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Abstracts of the 9th Annual Spring Congress of the Swiss Society of General Internal Medicine

Basel (Switzerland), May 21–23, 2025

SGAIM SSMIG SSGIM
Schweizerische Gesellschaft für Allgemeine Innere Medizin
Société Suisse de Médecine Interne Générale
Società Svizzera di Medicina Interna Generale
Swiss Society of General Internal Medicine

9TH ANNUAL SPRING CONGRESS OF THE SWISS SOCIETY OF GENERAL INTERNAL MEDICINE (SSGIM)

BASEL, MAY 21–23, 2025

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ORAL FREE COMMUNICATIONS – SWISS SOCIETY OF GENERAL INTERNAL MEDICINE (SSGIM)

FC1

A pre-post intervention STudy to improve fall Risk assessment in OLder hospitaLized adults (STROLL)

L. Bolt[1,2], A. Steck[1], P. Leist[1], N. Hauri[1], M. Méan[3], C. Aubert[1,2]

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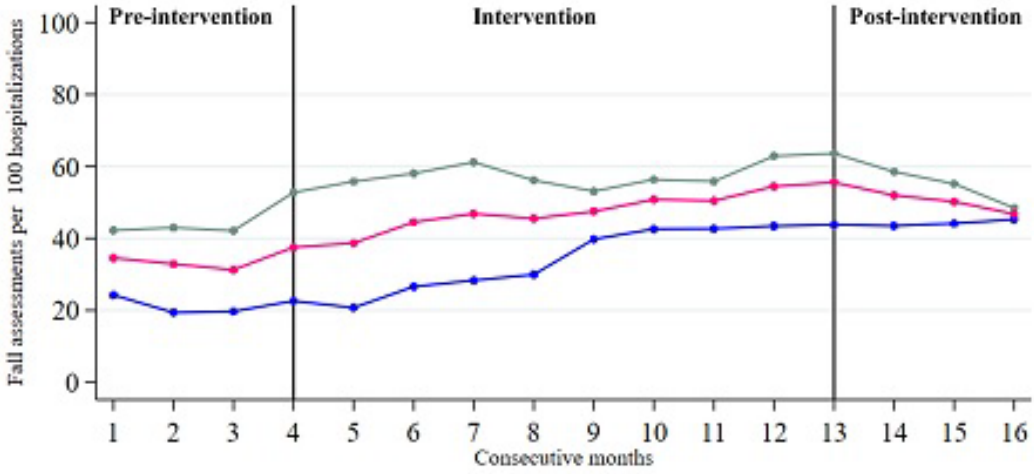
Introduction: Approximately 25–30% of adults aged ≥65 years fall annually, with a history of falls more than doubling the risk of recurrence. To enhance fall prevention, the Swiss Society of General Internal Medicine (SGAIM) published the quality indicator: "Proportion of patients ≥65 years old who were asked whether, and if yes, how often (number) and how (fall process) they have fallen in the previous 12 months." The goal is to systematically identify patients at risk of falling to target preventive measures. To address gaps in systematic assessment, we developed an interprofessional quality improvement intervention based on the SGAIM indicator to systematize fall risk assessment in adults aged ≥65 years hospitalized on general internal medicine (GIM) wards and tested its impact in a pre-post intervention study at two University hospitals.

Methods: The study was conducted on GIM wards of Bern University Hospital (Inselspital) and Lausanne University Hospital (CHUV) from 08/2022–11/2023 and included a 4-month pre-intervention, 9-month intervention, and 3-month post-intervention period. The intervention targeted healthcare professionals (HCP), i.e. residents and nurses. It included an e-learning session, an oral presentation, and in addition for nurses, monthly reminders using quizzes. It trained HCPs to assess fall risk systematically using questions based on the SGAIM quality indicator. The intervention was also designed to empower nurses and residents in implementing fall prevention measures for at-risk patients. We used multivariable logistic regression to assess the association between frequency of fall risk assessment and the intervention periods (pre- versus post-intervention).

Results: Among 6864 patients, mean age was 79 (± 8) years and 46% were female. Compared to the intervention period, the odds of a documented fall risk assessment was lower during the pre-intervention period than during the intervention (odds ratio [OR] 0.56, 95% confidence interval [CI] 0.50–0.63), while there was no significant difference between the post-intervention and the intervention period (OR 1.11, 95% CI 0.97–1.26) (Figure).

Conclusions: This quality improvement intervention significantly improved the SGAIM quality indicator for fall risk assessment. Implementing this intervention in other hospitals could further enhance adherence to the quality indicator nationwide.

Figure Fall risk assessments over time



	Pre-intervention	Intervention	Post-intervention
	n with assessment (%) / N	n with assessment (%) / N	n with assessment (%) / N
Combined	562 (34.1) / 1647	1904 (48.1) / 3956	626 (49.6) / 1261
Bern	398 (45.0) / 885	1317 (58.1) / 2266	362 (54.4) / 666
Lausanne	164 (21.5) / 762	587 (34.7) / 1690	264 (44.4) / 595

FC2

Association between SARS-CoV-2 testing and antibiotic use in Swiss nursing home residents

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Introduction: Acute respiratory infections (ARIs) constitute 30% of nursing home (NH) infections, with antibiotics often over-prescribed, particularly for viral ARIs. Despite a meta-analysis finding no link between respiratory virus testing and antibiotic use, no studies have explored this post-SARS-CoV-2. This study evaluates the impact of SARS-CoV-2 testing on NH antibiotic prescriptions.

Methods: A retrospective observational study was conducted across 45 NHs in Vaud Canton (2,427 long-stay beds) from July 2021 to June 2023. Monthly facility-level data included:

– SARS-CoV-2 tests/results (laboratories)

– Antibiotic prescriptions (pharmacies)

Linear regression, adjusted for Swiss viral epidemiology, assessed associations between (i) SARS-CoV-2 testing and (ii) positive test results on antibiotic prescriptions. From these models, the number of tests needed to prevent an antibiotic prescription was estimated based on test positivity rates.

Results: SARS-CoV-2 testing rates ranged from 0.3% to 15.9% of residents per NH, peaking in January 2022, July 2022, and November 2022. Test positivity followed similar trends except for the last testing peak. Antibiotic prescriptions ranged from 3.9% to 7.4% monthly, with peaks in December 2021, April 2022, and January 2023 (Figure 1). While overall SARS-CoV-2 testing was not significantly associated with antibiotic prescriptions (coefficient = -0.03 [95% CI: -0.16; 0.10], p = 0.65), positive SARS-CoV-2 results were negatively correlated with prescriptions (coefficient = -0.28 [95% CI: -0.53; -0.03], p = 0.029). A 10% increase in positivity was associated with a 2.8% reduction in antibiotic use, with 3.5 positive tests needed to prevent one prescription (Figure 2).

Conclusion: While overall testing rates were not associated with changes in antibiotic prescribing, positive SARS-CoV-2 results were linked to reduced antibiotic prescriptions in NH residents. This suggests that positive diagnostic results can support clinicians in making more informed prescribing decisions, potentially avoiding unnecessary antibiotic use when bacterial infection is unlikely.

Figure 1

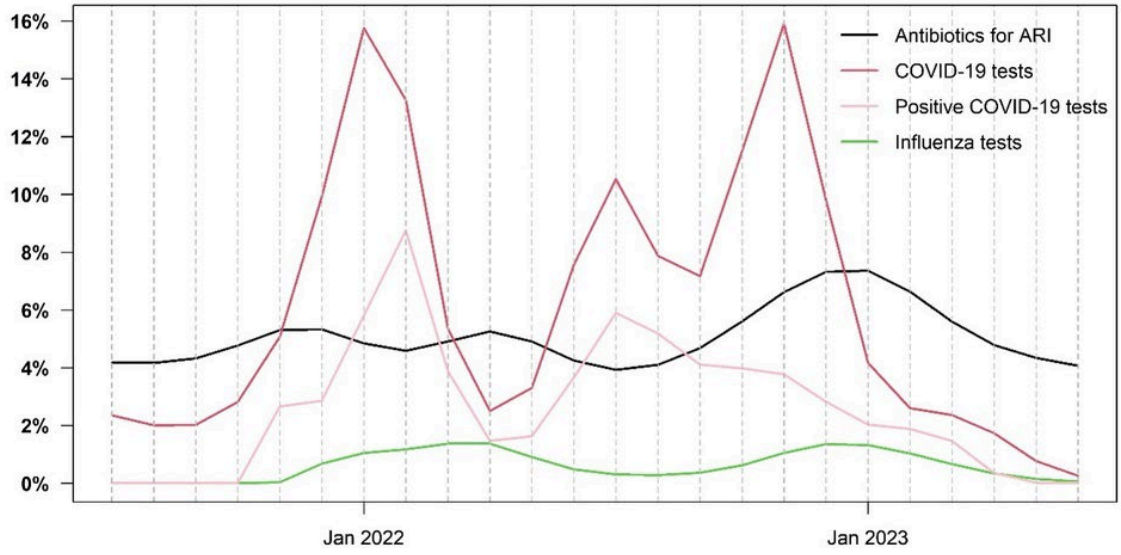
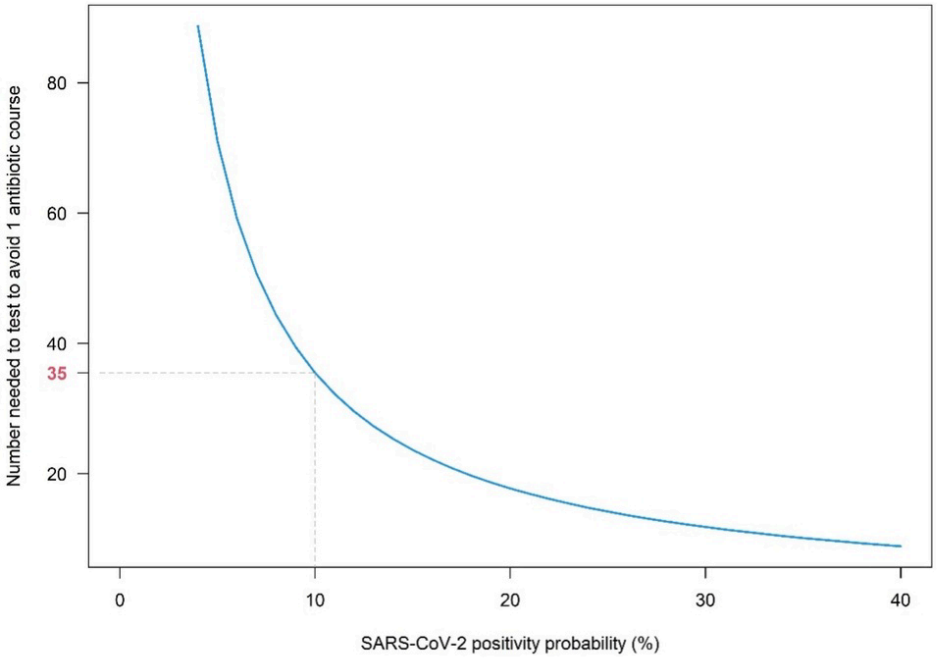


Figure 2



FC3

Clinical signs and host inflammatory biomarkers to guide antibiotics among nursing home residents with lower respiratory tract infections

A. Roux[1], N. De Pasquale[2], J. Luder[3], D.-L. Vu[4], A. Niquille[5], E. Rubli[6], T. Bizzozzero[7], J. Sauser[8], A. Cassini[9], E. Glampedakis[10], T. Snaka[2], T. Roger[2], V. Prendki[3], N. Boillat-Blanco[2]

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Introduction: Diagnosing pneumonia in frail nursing home (NH) residents with lower respiratory tract infections (LRTIs) is challenging and often leads to antibiotic overuse. This study aims to develop a clinical decision support tool using vital signs and CRP to guide antibiotic prescribing.

Methods: Prospective observational study (2022–2024) in 33 NHs in Western Switzerland including residents with LRTIs. On symptom onset, nursing teams measured vital signs and collected blood for CRP. LUS was performed within 3 days and reviewed by two experts. Pneumonia was defined as consolidations >1 cm on LUS. Diagnostic performance was assessed using AUROC, sensitivity, specificity, and likelihood ratios.

Results: Among 240 residents (62% female, median age 88 and frailty score 7), 74 (31%) had a LUS-diagnosed pneumonia. Residents with pneumonia had a higher heart rate (median 85.5 vs 80.0, p-value = 0.014), respiratory rate (24 vs 22, p-value = 0.015), a lower SpO_2/FiO_2 ratio (426 vs 438, p-value = 0.027) and a higher CRP (56.6 vs 27.1, p-value <0.001).

AUROC were 0.60 (95% CI 0.52–0.68) for heart rate, 0.60 (0.52–0.68) for respiratory rate, 0.59 (0.51–0.67) for SpO_2/FiO_2, and 0.69 (0.62–0.77) for CRP. CRP <20 mg/L demonstrated a sensitivity of 89% and NLR of 0.41, while CRP >60 mg/L showed a specificity of 81% and a PLR of 2.46. For intermediate CRP (20–60 mg/L; N = 112, 47%), respiratory rate <22 cpm (79% sensitivity, NLR 0.71) or SpO_2/FiO_2 >447 (90% sensitivity, NLR 0.56) suggested withholding antibiotics, whereas heart rate >100/min (90% specificity, PLR 3.06) supported prescribing.

Conclusion: CRP was the strongest pneumonia predictor. Low CRP supports withholding antibiotics, high CRP supports prescribing, and additional vital signs refine decisions for intermediate CRP levels. These findings highlight CRP and vital signs' potential to reduce antibiotic overuse in NHs.

FC4

Is There an Association of Iron Deficiency and Depression?

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Introduction: Iron deficiency (ID) is a prevalent condition worldwide. Recent cross-sectional US data showed an association between ID and depression in nonpregnant women of reproductive age, but evidence of this association is limited. The aim of the study was to assess the association of ferritin and current major depressive disorder (MDD) cross-sectionally and longitudinally.

Methods: Data stemmed from CoLaus|PsyCoLaus, a prospective cohort study including 35 to 75-year-old randomly selected inhabitants of Lausanne, Switzerland, recruited between 2003 and 2007, who underwent physical and psychiatric investigations. After the baseline investigation (F0) the cohort was followed-up after approximately 5 (F1), 9 (F2) and 13 years (F3). Participants with ferritin ≥400 mcg/L and CRP >10 mg/dl were excluded leaving 5,818 participants (women 56.2%, mean age 52.4y) at F0. The cross-sectional association of ferritin (exposure) and current MDD (outcome) at F0, F2 and F3 was assessed using logistic regression. For the longitudinal association between ferritin and current MDD (N = 3,597) mixed-effect logit regressions were used and adjusted for demographic, lifestyle and physical health factors including fatigue and handgrip strength. Subgroup analyses included sex and menopause status. Results are presented as odds ratios (ORs) per 1ug/L Ferritin increase with 95% confidence intervals (CIs).

Results: Ferritin levels and current MDD were significantly associated at F0 (OR [95%CI] = 0.998 [0.997, 0.999], p = .003) and F2 (OR = 0.997 [0.995, 0.998], p <.001), and marginally associated at F3 (OR = 0.998 [0.997, 1.000], p = .095In the longitudinal model, higher ferritin levels were consistently associated with lower likelihood of current MDD (adjOR = 0.997 [0.994, 0.999], p = .016) indicating that per each 10ug/dL increase in ferritin, the risk of having a current MDD decreases by 3%. Ferritin was associated with current MDD in women (OR [95%CI] = 0.998 [0.996, 1.000], p = .045) but not in men (OR [95%CI] = 0.998 [0.996, 1.000], p = .119). Besides, ferritin was a significant predictor of current MDD in pre- (OR [95%CI] = 0.997 [0.995, 0.998], p <.001), but not in post-menopausal females (OR [95%CI] = 0.998 [0.995, 1.001], p = .123).

Conclusions: Our findings showed that lower ferritin levels are associated with higher risk of MDD, especially in premenopausal females, even after adjusting for a range of demographic, lifestyle and physical health factors.

FC5

Patient-Physician Sex Interactions and Cardiovascular Risk Factor Management: A Population-Based Cross-Sectional Study

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Introduction: Cardiovascular disease affects both females and males, but sex differences exist in risk factors, manifestations, and outcomes. Beyond patient sex, growing evidence suggests that physician sex may also influence cardiovascular care. This study aimed to assess the effect of both patient and general practitioner (GP) sex on the management of dyslipidemia, hypertension, and diabetes.

Methods: Data were drawn from the CoLaus|PsyCoLaus study (2014-2017), a prospective population-based cohort in Lausanne, Switzerland. In a cross-sectional analysis, we assessed treatment and control rates for each cardiovascular risk factor across the four patient-GP sex combinations. Logistic regression models were adjusted for patient and GP characteristics, with clustering at the physician level to account for multiple patients managed by the same GP.

Results: A total of 3,717 patients (55.7% female) and 580 GPs were included. Male patients had higher prevalence rates of smoking, obesity, dyslipidemia, hypertension, and diabetes than female patients (P<0.001 for all comparisons). Female GPs cared for a higher proportion of female patients compared to male GPs (64.5% vs. 53.3%, P<0.001) (table 1). Independent of GP sex, female patients with dyslipidemia were more likely to be treated but less controlled than male patients (table 2). For hypertension, female patients treated by female GPs were less likely to receive treatment (OR 0.62 [0.42-0.92], P = 0.018), while no differences in control were found between the four patient-GP sex groups (table 2). Regarding diabetes, male patients treated by female GPs were more likely to receive treatment (OR 3.36 [1.15-9.78], P = 0.026), whereas female patients with male GPs tended to be less treated, although the association did not reach statistical significance (OR 0.61 [0.35-1.06], P = 0.077) (table 2).

Conclusion: This cross-sectional study in a Swiss population highlights differences in the prevalence and management of cardiovascular risk factors according to patient and GP sex. Associations varied across conditions, with female patients being more treated and less controlled for dyslipidemia irrespective of GP sex, while hypertension and diabetes care depended on patient-GP sex combinations.

Table 1. Physician and patient characteristics by sex

Physicians	**Male**	**Female**	**P-value**
Physicians, *n*	396	184	
Age (years)	56.1 (10.6)	49.6 (9.5)	<0.001
Years of practice	28.4 (11.1)	22.0 (9.6)	<0.001
Swiss nationality	353 (89.1)	159 (86.4)	0.342
Female patients	1559 (53.3)	512 (64.5)	<0.001
Patients	**Male**	**Female**	**P-value**
Patients, *n*	1646	2071	
Age (years)	62.0 (10.1)	63.2 (10.3)	<0.001
Educational level			
Low	808 (49.1)	1133 (54.7)	<0.001
Middle	404 (24.5)	572 (27.6)	
High	434 (26.4)	366 (17.7)	
Smoking status			
Never	586 (35.6)	971 (46.9)	<0.001
Former	745 (45.3)	732 (35.4)	
Current	315 (19.1)	368 (17.8)	
Body mass index			
Normal or underweight (<25 kg/m^2)	524 (31.8)	1033 (49.9)	<0.001
Overweight (25 to <30 kg/m^2)	784 (47.6)	677 (32.7)	
Obese (≥30 kg/m^2)	338 (20.5)	361 (17.4)	
Dyslipidemia[a]	1259 (76.8)	856 (41.5)	<0.001
Hypertension[b]	908 (55.2)	906 (43.8)	<0.001
Diabetes[c]	267 (16.3)	148 (7.2)	<0.001

Results are expressed as number of participants (%) for categorical variables and as mean (standard deviation) for continuous variables. Comparisons using chi-squared test for categorical variables and Student's t-test for continuous variables. [a]*Dyslipidemia*: LDL-cholesterol ≥ the threshold for corresponding SCORE risk category or treatment with hypolipidemic drug; [b]*Hypertension*: Blood pressure ≥140/90 mmHg or treatment with antihypertensive drug; [c]*Diabetes*: Fasting plasma glucose ≥7.0 mmol/L or treatment with antidiabetic drug.

FC6

Predictive value of cumulative exposure compared to single measurement of traditional cardiometabolic risk factors for cardiovascular disease and all-cause mortality

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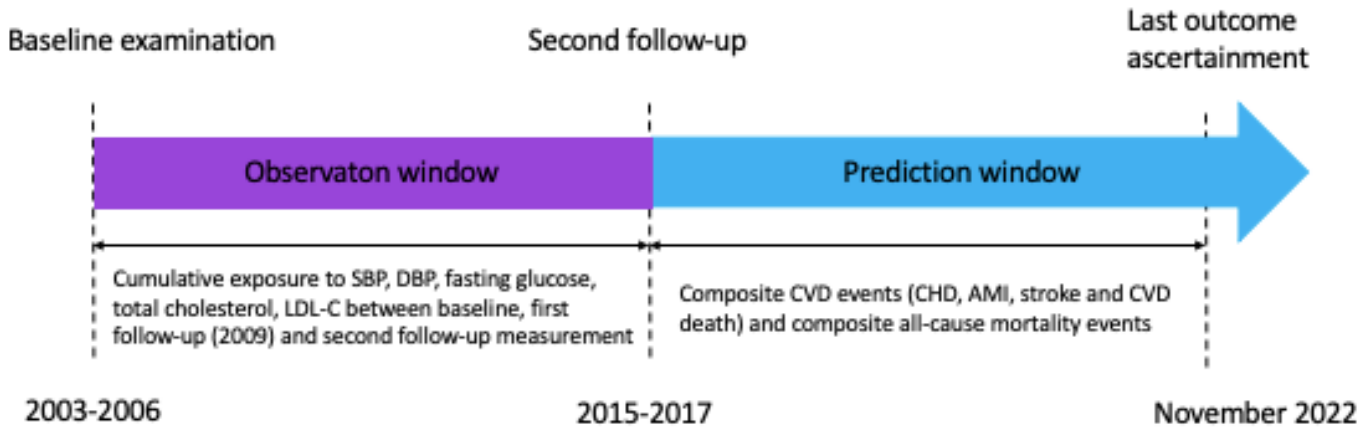
Introduction: CVD is the leading global cause of death, increasingly affecting young adults. While cumulative exposure to cardiometabolic risk factors (CMRFs) shows promise for risk prediction, its added prognostic value compared to single measurements remains unclear.

Methods: We used data from the prospective CoLaus|PsyCoLaus study, which enrolled 6,733 Swiss participants at baseline (2003–2006), with follow-ups conducted every 5 years including measurements of CMRFs. A landmark survival model was applied, with a 10-year observation window for cumulative exposure and a prediction window, the period from the second follow-up (2015–2017) to the occurrence of the first event (Figure 1). Separate Cox regression models were computed for each CMRF (i.e., systolic blood pressure [SBP], diastolic blood pressure [DBP], fasting glucose, total and LDL-cholesterol [LDL-C]) to evaluate whether 10-year cumulative exposure to CMRFs predicted fatal or non-fatal CVD events or all-cause mortality, independent of single-point measurements taken at the second follow-up.

Results: The median observation period was 10.7 years, with 94.9% of participants having three CMRF measurements. Among 3,318 participants with cumulative data, 139 experienced CVD events, and 136 died from any cause during the 3.8-year median prediction period. Cumulative total cholesterol and LDL-C were strongly associated with higher risk of CVD and all-cause mortality, independently of single-point measurements. These associations remained significant after adjusting for age, sex, education, BMI, diabetes, antihypertensive, antidiabetic, and lipid-lowering treatments, chronic kidney disease, and family history of CVD (Figure 2). No association was found for the other CMRFs.

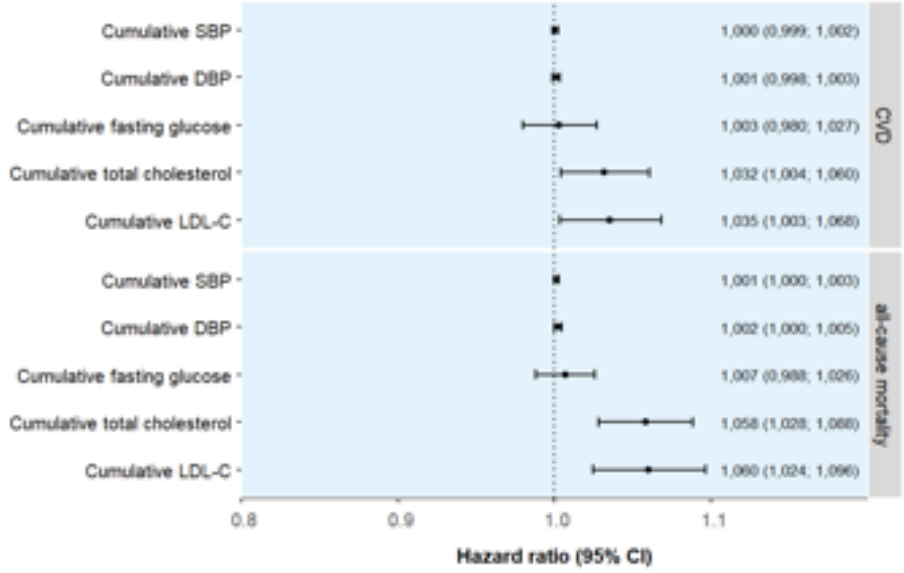
Conclusion: Cumulative exposure to total or LDL-C predicts CVD and all-cause mortality independently of single cholesterol measures, highlighting the importance of long-term monitoring in effective prevention strategies.

Figure 1. Study Design



We included 3,318 participants from the CoLaus|PsyCoLaus study, enrolled between 2003 and 2006. The period from baseline to the second follow-up served as the "observation window" to assess cumulative exposure to CMRFs. The "prediction window" extended from the second follow-up to the final outcome assessment in 2022, evaluating CVD events and all-cause mortality.
CMRFs = cardiometabolic risk factors; CVD = cardiovascular disease; SBP = systolic blood pressure; DBP = diastolic blood pressure; LDL-C = LDL-cholesterol; CHD = coronary heart disease ; AMI = acute myocardial infarction.

Figure 2. Association between cumulative CMRFs and CVD events or all-cause mortality independant of single-point measurements in multivariable regression models



Hazard ratios for incident CVD risk and all-cause mortality, independent of single-point measurements and adjusted for age, sex, education, BMI, diabetes, antihypertensive, antidiabetic, and lipid-lowering treatments, chronic kidney disease, and family history of CVD.

FC7

Preoperative testing in low-risk surgeries – Adherence to international recommendations in Switzerland in the light of "smarter medicine"

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Introduction: International guidelines[1,2,3,4] recommend against performing routine tests before low-risk surgeries in patients without relevant systemic diseases. However, evidence for specific preoperative tests is scarce, especially concerning low-risk interventions. The aim of this study was to assess the incidence of preoperative testing prior to low-risk surgeries, the incidence of postoperative complications, and the association of preoperative testing with postoperative complications.

Methods: We performed a retrospective cohort study including all adult patients undergoing low-risk surgery within the years 2019-2020, using billing data of a health insurance company (Helsana) in Switzerland. We used 1:1 propensity score matching to form a control group. We assessed preoperative testing (e.g. blood tests, ECG, chest x-ray) within 90 days prior to the intervention and postoperative complications (e.g. myocardial infarction, stroke, death) within 90 days after the surgery.

Table 1. Patient characteristics in case and control groups

	Cases	Controls	Significance Level
	104'219	104'219	
Age, mean (SD)	59.796 (18.630)	59.960 (18.788)	*
Gender, female (n, %)	56'825 (54.5%)	57'261 (54.9%)	.
Residential Area (n, %)			
Northwestern Switzerland (BS, BL, AG)	14'809 (14.2%)	14'813 (14.2%)	
Zurich (ZH)	25'762 (24.7%)	25'862 (24.8%)	
Espace Mittelland (BE, FR, SO, NE, JU)	20'975 (20.1%)	21'068 (20.2%)	
Eastern Switzerland (GL, SH, AR, AI, SG, GR, TG)	12'598 (12.1%)	12'514 (12.0%)	
Central Switzerland (LU, UR, SZ, OW, NW, ZG)	8'246 (7.9%)	8'203 (7.9%)	
Lake Genva Region (VD, VS, GE)	15'632 (15.0%)	15'478 (14.9%)	
Ticino (TI)	6'197 (5.9%)	6'281 (6.0%)	
correspondence language (n, %)			
German	78'658 (75.5%)	78'662 (75.5%)	
French	18'904 (18.1%)	18'801 (18.0%)	
Italian	6'437 (6.2%)	6'532 (6.3%)	
Romansh	220 (0.2%)	224 (0.2%)	
Health insurance model (n, %)			
Model 1: Free choice of provider	35'848 (34.4%)	36'060 (34.6%)	
Model 2: General practitioner	11'786 (11.3%)	11'823 (11.3%)	
Model 3: Telemedicine	11'351 (10.9%)	11'541 (11.1%)	
Model 4: General practitioner or telemedicine	37'664 (36.1%)	37'363 (35.9%)	
Model 5: premed telephone consulting	7'570 (7.3%)	7'432 (7.1%)	
Pharmaceutical cost groups (n, %)			
Cardiac disease	1'458 (1.4%)	1'389 (1.3%)	
COPD/severe asthma	1'579 (1.5%)	1'444 (1.4%)	*
Diabetes mellitus type 1	1'830 (1.8%)	1'663 (1.6%)	**
Diabetes mellitus type 2	1'384 (1.3%)	1'293 (1.2%)	.
Dyslipidemia	13'635 (13.1%)	13'714 (13.2%)	
Cancer	35 (0.0%)	36 (0.0%)	
Complex cancer	1'033 (1.0%)	908 (0.9%)	**
Kidney disease	194 (0.2%)	141 (0.1%)	**
Pulmonary arterial hypertension	30 (0.0%)	21 (0.0%)	

Kruskal-Wallis test was used to calculate significance level for age, Fisher exact test for gender and pharmaceutical cost groups, Chi-Square test for reographic region, correspondence language and health insurance model. *Significance levels: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1*

Table 2. Preoperative testing by intervention type

	Eye surgery	Hernia surgery	Transuret. Proced.	Arthro-scopies	Hand/Plastic Surgery	Thyroid surgery	Gyn. Interv.	All Cases	Control	Sign.level
n	9'552	6'868	2'548	4'118	75'533	984	4'616	104'219	104'219	
					Preoperative testing					
Any preoperative testing (n, %)	6'200 (64.9%)	4'873 (71.0%)	2'341 (91.9%)	2'394 (58.1%)	36'557 (48.4%)	821 (83.4%)	3'263 (70.7%)	54'108 (51.9%)	37'868 (36.3%)	*** 3
Blood analyses (n, %)	5'802 (60.7%)	4'567 (66.5%)	2'134 (83.8%)	2'207 (53.6%)	32'541 (43.1%)	797 (81.0%)	2'836 (61.4%)	50'884 (48.8%)	33'438 (32.1%)	*** 3
Urinanalysis (n,%)	1'548 (16.2%)	1'482 (21.6%)	1'747 (68.6%)	521 (12.7%)	11'516 (15.2%)	170 (17.3%)	1'668 (36.1%)	18'652 (17.9%)	11'539 (11.1%)	*** 3
ECG (n,%)	2'719 (28.5%)	2'106 (30.7%)	1'035 (40.6%)	993 (24.1%)	6'990 (9.3%)	337 (34.2%)	513 (11.1%)	14'693 (14.1%)	6'207 (6.0%)	*** 3
Chest x-ray (n,%)	534 (5.6%)	450 (6.6%)	214 (8.4%)	206 (5.0%)	2'487 (3.3%)	78 (7.9%)	129 (2.8%)	4'098 (3.9%)	2'445 (2.3%)	*** 3
Echocardiography (n,%)	418 (4.4%)	360 (5.2%)	155 (6.1%)	110 (2.7%)	2'314 (3.1%)	55 (5.6%)	56 (1.2%)	3'468 (3.3%)	2'435 (2.3%)	*** 3
Pulmonary function (n,%)	259 (2.7%)	209 (3.0%)	63 (2.5%)	76 (1.8%)	1'504 (2.0%)	34 (3.5%)	60 (1.3%)	2'205 (2.1%)	1'526 (1.5%)	*** 3
Ergometry (n,%)	231 (2.4%)	242 (3.5%)	103 (4.0%)	68 (1.7%)	1'439 (1.9%)	26 (2.6%)	32 (0.7%)	2'141 (2.1%)	1'462 (1.4%)	*** 3
Overnight pulse oximetry (n,%)	41 (0.4%)	46 (0.7%)	11 (0.4%)	13 (0.3%)	274 (0.4%)	6 (0.6%)	7 (0.2%)	398 (0.4%)	260 (0.2%)	*** 3

¹) Kruskal-Wallis test, ²) Fisher exact test, ³) Chi-Square test
*Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1*

Results: We included 104'219 patients with low risk surgery in the observation period and formed an equally large control group. The most frequently performed type of low risk surgeries were hand and plastic surgeries (72.5%). More than every second patient in case group (54.2%) underwent any form of preoperative testing. The most frequent performed tests were analysis of laboratory values (48.8%), followed by ECGs (14.1%) and chest x-rays (3.9%). There was significantly less testing in the control group, just 36% underwent any form of test. Patients who underwent preoperative testing are shown to be older and have more preexistent comorbidities. However, preoperative testing didn't reduce postoperative complications. On the contrary, the group with preoperative tests had significantly more complications (e.g. 0.2% death in group without preoperative testing vs. 0.4% in group with preoperative testing).

Conclusion: Although guidelines recommend otherwise, this study shows preoperative testing is still overused in patients undergoing low-risk surgeries. This study with its large study population and highly generalizable data shows that it is necessary to raise awareness of practitioners, in order to reduce overtesting and health costs.

FC8

Prevalence of antibiotic use and healthcare-associated infections in Swiss long-term care facilities: a point-prevalence study

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Introduction: Evidence on antibiotic use and healthcare-associated infections (HAIs) in Swiss long-term care facilities (LTCFs) is scarce. Data from 2016/17 showed 3.1% HAIs and 4.9% antibiotic use in European LTCFs [1,2]. To guide policymakers in the prioritization of interventions, we performed a nation-wide point-prevalence study on antibiotic prescription and HAIs among residents of Swiss LTCFs.

Methods: In January 2024, we invited all Swiss LTCFs to participate in the study. Data were collected in September 2024 both at the institutional and individual level using the ECDC HALT-4 protocol, adapted to better capture resident-level and institutional risk factors (RF) for HAIs. The proportion of residents with HAIs and with systemic antibiotic use was calculated by language region; RF for HAIs were identified using random-effects models accounting for institutional clustering.

Results: Among 1530 eligible Swiss LCTFs, we recruited 94 (6%) institutions for a total of 7244 residents (median age 87 years, 70% females). The institutions were distributed among German- (46%), Italian- (35%) and French-speaking (19%) regions. Residents were cared for by their general practitioner (45% of LTCFs), a facility-employed physician (16%) or a combination of both (39%). Among residents, 2.3% (95% CI 1.9-2.6, n = 164) suffered from HAIs and 2.6% (95%CI 2.3-3.0, n = 191) received antibiotics. HAI-prevalence was similar across language regions, while the percentage of residents receiving antibiotics was higher in French-speaking regions (5.0%, 95%CI 3.8-6.3) compared to Italian- (3.0%, 95%CI 2.3-3.7) or German-

speaking ones (1.6%, 95%CI 1.2-2.0). Most common HAIs were urogenital (44%), respiratory (15.4%) and skin infections (15%). The presence of a urinary catheter was an independent RF for HAIs (aOR 2.71, 95%CI 1.76-4.17). Most antibiotics (69%) were prescribed for infection treatment, 31% for prophylaxis. Most commonly prescribed antibiotics were aminopenicillins (28%), trimethoprim/sulfamethoxazole (17%), and nitrofurantoin (16%).

Conclusions: Antibiotic use and HAI-prevalence in Swiss LTCFs are comparable to the European average, with significant differences across language regions for antibiotic use. Urinary tract infection was the most common HAI and urinary catheter the most important potentially modifiable RF for HAIs.

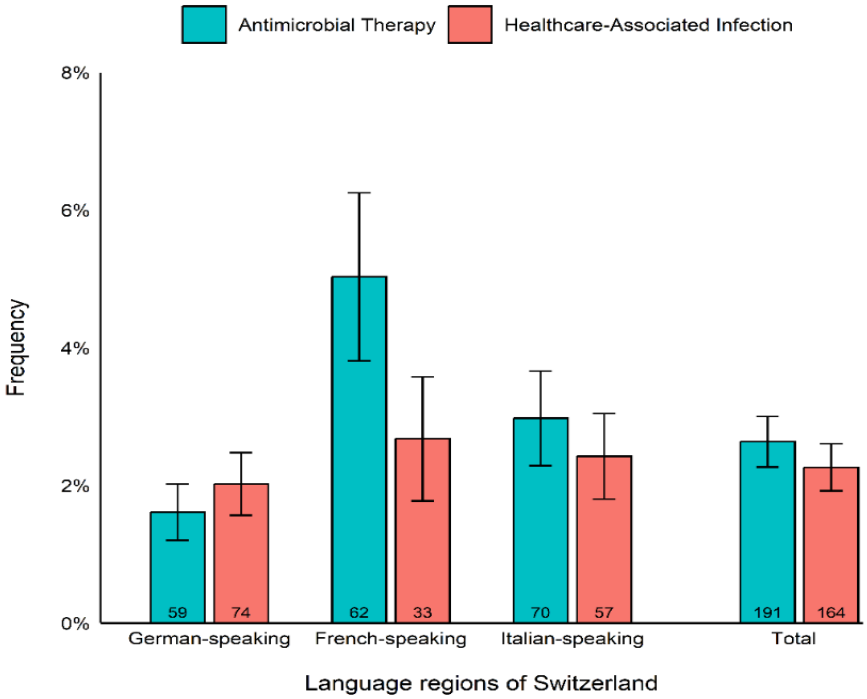

Fig. 1. Prevalence of HAIs and antibiotic use in Swiss LTCFs by language region

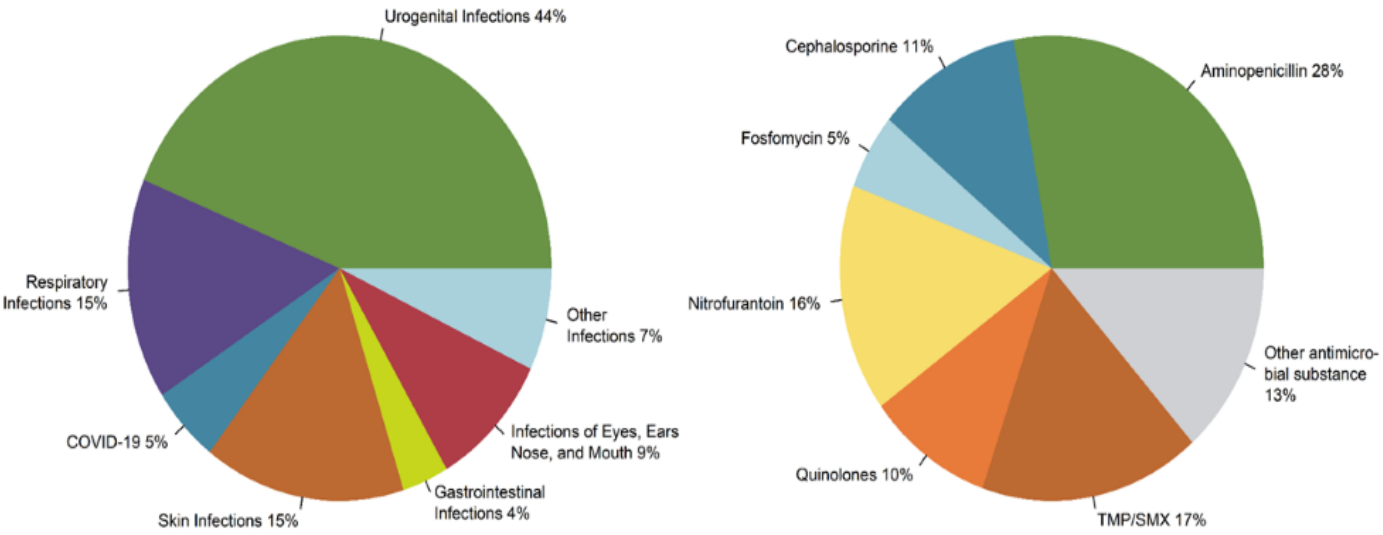

Fig. 2. Frequencies of HAIs (left) and antibiotic substances (right)

FC9

Translating evidence into practice: a consensus study to develop an actionable framework for patient-centered opioid deprescribing

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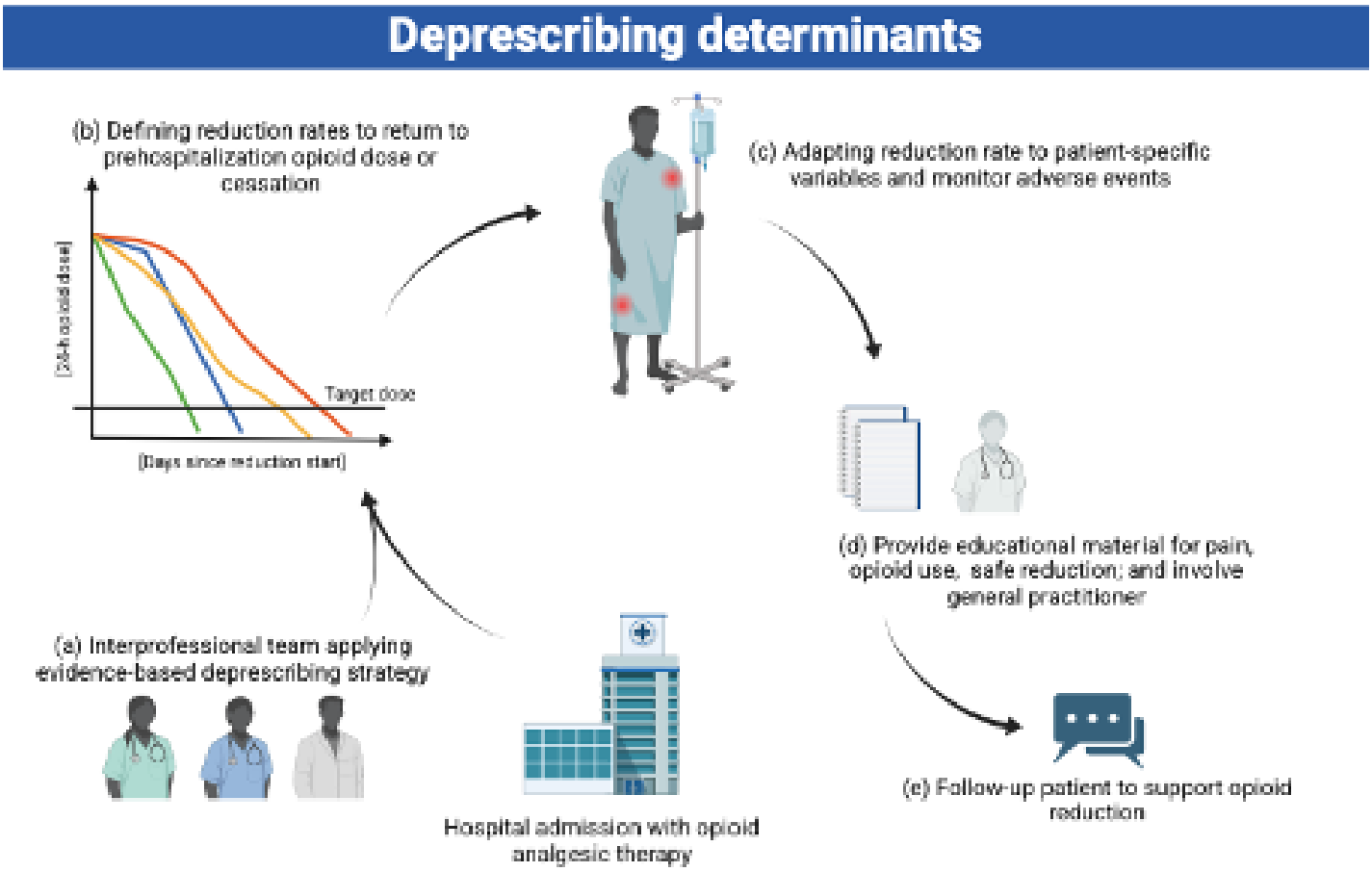
Introduction: Hospital-initiated opioid analgesics that extend beyond discharge can lead to long-term use and negative health outcomes. Despite these concerns, there is a lack of published protocols for structured deprescribing. We aimed to develop an actionable opioid deprescribing framework integrating evidence-based reduction protocols with patient-centered determinants for systematic implementation in tertiary care.

Methods: We conducted a multi-level consensus study to bridge evidence, clinician expertise, and patient perspectives. Initial framework development included focus group discussions with multidisciplinary clinicians (n = 5). The framework was validated for our institution using a two-round Delphi survey across six medical specialties (n = 11). An opioid reduction calculator was developed in Python (version 3.12.3), applying a reduction trajectory for prespecified starting and end doses. Final refinement included interviews with patients receiving opioid therapy (n = 11) to optimize understandability of the reduction plan as a patient handout.

Results: The framework identified four critical domains for successful opioid deprescribing: reduction strategies, patient-specific variables, environmental enablers, and procedural elements. Reduction strategies categorized patients into chronic and new users, allowing for grace periods for dose stabilization, with particular attention to patients exhibiting pain catastrophizing behavior and frailty. Environmental and procedural factors included shared responsibility and interdisciplinarity, ensuring follow-ups facilitated by a coordinated care team. These findings were operationalized into the reduction calculator, proposing initial individualized reduction plans (10-25%) based on key patient-specific variables with built-in stabilization periods. Delphi validation achieved full consensus (87.8% first-round agreement; 100% final consensus) on all framework components. Patient involvement refined the handout to improve understandability and actionability.

Conclusions: We developed an actionable opioid deprescribing framework for our institution, providing other healthcare institutions with a practical blueprint for their own implementation. Our multi-level consensus identified critical domains and established individualized reduction protocols, addressing a critical gap in transitional care while facilitating safe opioid deprescribing practices.



FC10

Uptake of Tobacco Cessation Services Embedded in the Vaud Lung Cancer Screening Pilot Project

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Introduction: Lung cancer remains the leading cause of cancer-related mortality globally. Low-Dose Computed Tomography (LDCT) screening and smoking cessation significantly reduce lung cancer-specific and overall mortality among active smokers. When combined, these interventions yield the most substantial benefit, both in terms of lung cancer mortality reduction and smoking cessation. Despite international recommendations, evidence on the optimal integration of smoking cessation counselling into LDCT screening programmes is limited. Emerging data suggests that intensive, same-day, on-site counselling is particularly effective, achieving uptake rates above 50%. We explored the feasibility and acceptability of incorporating this approach into the Vaud Lung Cancer Screening Pilot Project (VLCSPP).

Methods: The VLCSPP is conducted at the Lausanne University Hospital (CHUV) and included 1000 participants at baseline between 08.01.2024 and 20.12.2024. Among participants, 703 current smokers were offered an on-site cessation consultation immediately following their baseline LDCT screening. The counselling sessions, delivered by trained nurses or physicians, included follow-up options. Data were collected on counselling uptake, follow-up preferences, planned quit attempts, and nicotine replacement therapy (NRT) use for analysis.

Results: Of the 703 current smokers (70% of all screening participants), 396 (56%) accepted the cessation counselling. Among those, 217 (55%) agreed to follow-up: 133 (61%) opted for free, phone-based support; 55 (25%) preferred follow-up with their general practitioner and 48 (22%) selected specialised tobacco cessation consultations. Additionally, 243 (61%) of counselling participants committed to attempting to quit smoking within three months, and 252 (64%) chose to use NRT. Participants who received cessation counselling led by physicians were more likely to engage in follow-up.

Conclusion: Personalised, same-day, on-site smoking cessation counselling was highly accepted in the context of the VLCSPP. Offering a combination of in-person and remote follow-up options enhanced follow-up acceptability. Integrating such practices into screening programmes could maximise the "teachable moment" provided by LDCT, optimising smoking cessation outcomes.

ORAL FREE COMMUNICATIONS – GUEST SOCIETY: SWISS SOCIETY FOR GERIATRICS (SFGG/SPSG)

FC11

Drugs and Orthostatic hypotension in geriatric inpatients population: a link?

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Introduction: The prevalence of orthostatic hypotension (OH) rises with age and frailty. Is OH linked to the geriatric in-patient's antihypertensive or hypotensive drugs?

Method: Retrospective study over 12 years (from 1 January 2012 to 31 December 2024) of all geriatric in-patients in the Valais Hospital, observing the possible link between the orthostatic testing (OT) and their medication(s): antihypertensive drugs (AH) [diuretics, angiotensin-converting enzyme inhibitors (ACEIs), angiotensin II antagonists (A2As), renin inhibitors, calcium channels blockers, beta-blockers, centrally acting antihypertensive drugs], hypotensive drugs (H) [= drugs with potential hypotensive effect: antidepressants, antiparkinsonians, neuroleptics, benzodiazepines, opioids, nitrate derivatives], drugs (number of active substances) as well as co-morbidities favoring OH (hypertension, falls, dementia, diabetes, Parkinson's disease). OT is a manual measurement of blood pressure (BP) after 5 minutes supine (T0), and after1 (T1), 3 (T3) and 5 (T5) minutes after rising to an upright position. OH was defined by a ≥20 mmHg decrease in systolic BP and/or a ≥10 mmHg decrease in diastolic BP.

Results: In our group (average age of 82.78 years and 62% women), 32% of the 10,245 subjects had OH, 25.6% at T1, 15.4% at T3, and 15.2% only at T5. The statistically significant parameters associated with OH were the use of H drugs (72% of the group), particularly antidepressants, opioids and antiparkinsonians, as well as the number of active substances in a drug and male sex. No association between OH and AH, or the combination of H and AH drugs, was demonstrated (Table 1). Multivariate analysis (Table 2) showed that H drugs increased the probability of OH by 12% (OR 1.12; CI 1.01-1.23, p 0.030), number of active substances in medication by 1% (OR 1.01, CI 1.00-1.02, p 0. 012), the presence of dementia by 12% (OR 1.12, CI 1.01-1.24, p 0.025), and Parkinson's disease by 69% (OR 1.69, CI 1.39-2.06, p <0.001). OH was reduced by 30% in women (OR 0.70, CI 0.64-0.76, p <0.001).

Conclusion: OH affects 1/3 of geriatric in-patients, which is indicative of the need to look for it in older subjects, mainly if they suffer from dementia, diabetes or Parkinson's disease. A review of drugs with hypotensive action should be systematically carried out, targeting antiparkinsonians, antidepressants and opiates, and discussing their possible discontinuation. AH drugs don't cause OH in our study.

Table 1. Clinical characteristics of the patients

Characteristics	All patients	OT -	OT +	p-value[1]
	N = 10 245[2]	N = 6917 (68%)[2]	N = 3328 (32%)[2]	
Age	82.78 (6.99)	82.71 (6.97)	82.92 (7.01)	0.15
Women	6,334 (62%)	4,483 (65%)	1,851 (56%)	<0.001***
Hypertension	6,054 (59%)	4,077 (59%)	1,977 (58%)	0.7
Dementia	2,238 (22%)	1,464 (21%)	774 (23%)	0.016*
Diabetes	1,980 (19%)	1,293 (19%)	687 (21%)	0.019*
Parkinson	430 (4.2%)	228 (3.3%)	202 (6.1%)	<0.001***
Hypotensive drug (H)[3]	7,423 (72%)	4,951 (72%)	2,472 (74%)	0.004**
Antihypertensive drug (AH)[4]	7,861 (77%)	5,328 (77%)	2,533 (76%)	0.3
H + AH	5,623 (55%)	3,751 (54%)	1,872 (56%)	0.054
Number of active substances	15.62 (5.72)	15.46 (5.61)	15.94 (5.92)	<0.001***
H-antidepressants	0.30 (0.55)	0.29 (0.54)	0.32 (0.58)	0.004**
H-opioids	0.38 (0.69)	0.39 (0.70)	0.35 (0.65)	0.002**
H-antiparkinsonians	0.08 (0.36)	0.06 (0.31)	0.11 (0.43)	<0.001***

[1] Pearson's Chi-squared test; Welch Two Sample t-test *p<0.05; **p<0.01; ***p<0.001 [2] N (%); Mean (SD)
[3] Hypotensive drugs (=drugs with potential hypotensive effects): antidepressants, antiparkinsonians, neuroleptics, benzodiazepines, opioids, nitrate derivatives
[4] Antihypertensive drugs : diuretics, angiotensin-converting enzyme inhibitors [ACEIs], angiotensin II antagonists [A2As], renin inhibitors, calcium channel blockers, beta-blockers, centrally acting antihypertensive drugs)

Table 2. Multivariate Analysis

Coefficients	OR[1]	95% CI[2]	p-value[3]
Women	0.70	0.64-0.76	<0.001***
Dementia	1.12	1.01-1.24	0.025*
Parkinson	1.69	1.39-2.06	<0.001***
Hypotensive drug (H)	1.12	1.01-1.23	0.030*
Number of actives substances	1.01	1.00-1.02	0.012*
[1]OR = Odds Ratio,	[2]CI = Confidence Interval	[3]*p<0.05; **p<0.01; ***p<0.001	

FC12

Neurological Manifestations in Celiac Disease: Linking Immune Dysregulation to the Gut-Brain Axis

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Learning objectives:

- Recognize neurological manifestations of celiac disease, including ataxia, polyneuropathy, and choreiform movements.
- Understand the role of nutritional deficiencies and immune-mediated mechanisms in the neurological complications of celiac disease.
- Identify the importance of strict dietary adherence and serologic monitoring in managing celiac disease-related neurological symptoms.

Case: A 63-year-old woman presented with progressive ataxia, sensory deficits, and choreiform movements. Neurological examination revealed diminished reflexes, significant ataxia, and positive Romberg sign. Electrophysiological testing confirmed axonal polyneuropathy. Laboratory studies showed undetectable vitamin E, elevated vitamin B6, and positive anti-GD1b antibodies. Initial management with a gluten-free diet, nutritional supplementation, and symptomatic treatment did not halt neurological decline, prompting intravenous immunoglobulin therapy, which led to subjective but not objective improvement. Persistent anti-transglutaminase antibodies and duodenal biopsy-confirmed villous atrophy indicated ongoing gluten exposure. Enhanced dietary counseling led to improved antibody levels and stabilization of neurological symptoms.

Discussion: Celiac disease can present with diverse neurological symptoms, including ataxia, polyneuropathy, and movement disorders, even in the absence of gastrointestinal manifestations [1]. The pathophysiology likely involves both immune-mediated mechanisms and nutritional deficiencies [2]. Vitamin E deficiency, common in celiac patients, contributes to nerve dysfunction [3]. Persistent neurological symptoms despite a gluten-free diet should prompt investigation for ongoing gluten exposure and possible autoimmune-mediated damage. Neurological manifestations of celiac disease can overlap with other autoimmune disorders such as multiple sclerosis, Guillain-Barré syndrome, and Hashimoto's encephalopathy, necessitating careful differential diagnosis [4,5,6]. Regular serologic monitoring and strict dietary adherence are crucial to prevent irreversible neurological complications. This case underscores the need for early recognition, comprehensive management, and a multidisciplinary approach to optimize outcomes in celiac disease-related neurological manifestations.

E-POSTERS – SWISS SOCIETY OF GENERAL INTERNAL MEDICINE (SSGIM)

P1

Are young Swiss physicians interested in general internal medicine research ?– a cross-sectional survey

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Introduction: In Switzerland, demand for General Internal Medicine (GIM) research is increasing, partly due to an aging population, where evidence-based practice remains limited. Internationally, structured mentorship and dedicated research time have been shown to improve academic careers. This study assessed interest in GIM research among young physicians in postgraduate training and identified their needs and barriers with the aim of proposing strategies enhance research engagement.

Methods: An electronic cross-sectional survey was conducted from January to March 2024, distributed by GIM department heads at large Swiss hospitals and primary care institutes. The survey included closed-ended questions on demographics and interest, activities, mentorship, sponsorship, and information needs regarding research, as well as open-ended questions on barriers and career needs. Quantitative data were analyzed descriptively. Open-text responses underwent thematic analysis.

Results: Of 414 surveys, 251 (61%) were analyzed based on completion. Most respondents (70%) were aged 30–40 years and 58% were female. While 171/251 (68%) of respondents expressed interest in GIM research, only 83/251 (33%) were conducting research, and 25/251 (10%) had completed research-specific training. Furthermore, 58% of participants felt uninformed about research opportunities. Preferred information channels included chief physician presentations during training (73%), dedicated webpages (66%), and conference sessions (64%). Key barriers to research included lack of protected time (63%), absence of mentorship (18%) and financial constraints (15%). Although 60% had a mentor, only 7% had participated in a formal mentorship program. Open-ended responses highlighted the need for mentorship, protected time, and institutional support.

Conclusion: Despite strong interest, young GIM physicians face significant barriers to research participation and academic career progression. Strategies to address these barriers could include: improved information dissemination and outreach to smaller hospitals; structured fellowships, dedicated career-planning services, and clear "research clinician" roles to improve engagement; work-sharing models, part-time residencies, and equitable pay to enhance access; and mentorship incentives to increase supervision quality and engagement. Together, these measures can foster a diverse, robust pipeline of clinician-researchers and strengthen academic GIM in Switzerland.

P2

Assessing Resident Performance in General Internal Medicine: Validation of the MedEval Questionnaire

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Introduction: MedEval is a novel coaching system that includes weekly assessments of resident performance through a structured set of performance questions and regular sessions with an assigned mentor (Figure). The questionnaire for general internal medicine (version 2023) consists of 20 items, each evaluated on a 5-point Likert scale (Table). Validating the psychometric properties of this questionnaire is essential to ensure alignment with the underlying constructs and to identify opportunities for improving its quality and reliability.

Methods: Data were collected from questionnaires completed during routine use of MedEval in the department for general internal medicine at a Swiss university hospital between July 2021 and February 2024. Confirmatory factor analysis (CFA) was conducted to evaluate the underlying factor structure and model fit, assessed using standard indices, including the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Standardised Root Mean Square Residual (SRMR). Internal consistency was evaluated using Cronbach's alpha. Variance explained by key questionnaire factors in Item B4 (overall independence) was assessed through multiple linear regression.

Results: A total of 892 evaluations assessing the performance of 163 trainees were conducted by 33 evaluators and included in our study. Initial CFA yielded a moderate fit (CFI: 0.899, RMSEA: 0.098, SRMR: 0.067). Linking Item B4 (overall independence) to multiple latent variables (medical knowledge, education, administration) resulted in a good model fit (CFI: 0.927, RMSEA: 0.089, SRMR: 0.045). Internal consistency was high across most factors ($\alpha > 0.90$) but lower for education ($\alpha = 0.67$) likely due the lower number of items. Regression analysis revealed that medical knowledge, education, and administration explained 61% of the variance in B4, while behaviour contributed insignificantly. The total score excluding B4 strongly correlated with B4 ($r = 0.768$).

Conclusion: The MedEval performance evaluation questionnaire for general internal medicine demonstrates high internal consistency. Overall independence (item B4) was found to be the strongest and most reliable measure for performance.

Figure: MedEval Concept

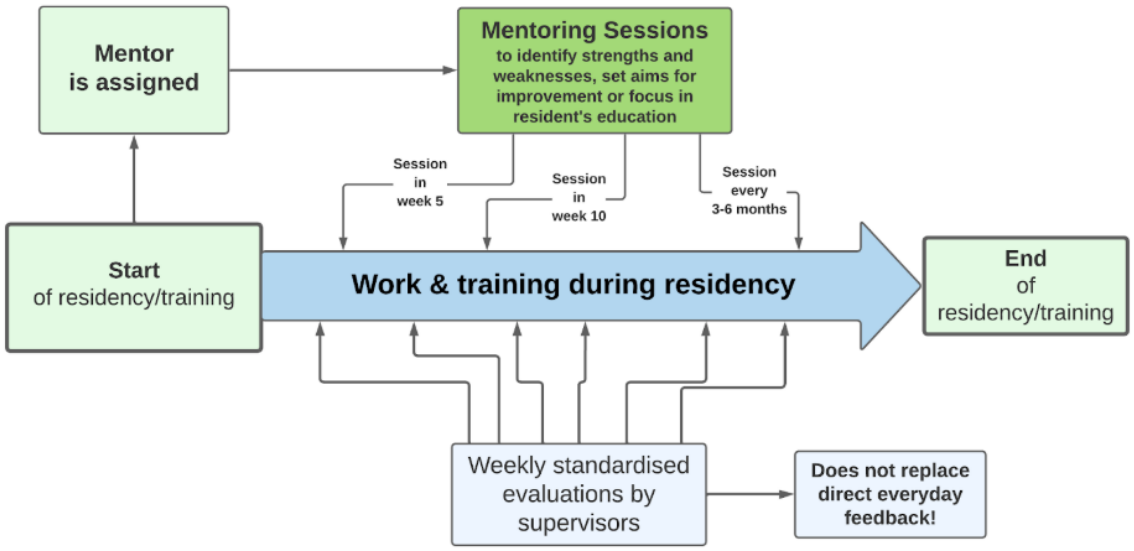

Table: MedEval Questionnaire (Version 2023)

Dimension	Item	
Medical Knowledge	M1	Medical knowledge (overall)
	M2	Correctly collects patient history and clinical findings
	M3	Integrates medical knowledge and clinical findings into assessment (problem definition, clinical reasoning)
	M4	Presents patients concisely and precisely
	M5	Identifies priorities regarding therapy and diagnostics
	M6	Recognizes emergency situations
	M7	Safely performs invasive interventions and can interpret the results
Administration & Organisation	A1	Is careful and reliable in their work
	A2	Has efficient time management, can prioritize organizationally correctly
	A3	Conducts rounds in a structured manner, adheres to schedule times
	A4	Completes discharge letters in a timely manner
	A5	Quality of discharge letters / documentation
Communication & Collaboration	B1	Collegiality & communication (handovers, helpfulness)
	B2	Demonstrates a constructive attitude, efficiency, and a factual manner within the team
	B3	Self-assessment; knows own limits
	B4	Independence (overall)
	B5	Commitment (overall)
	B6	Interaction with patients/relatives
Education	E1	Proactively initiates independent searches for academic literature and evidence-based sources
	E2	Is actively engaged in student teaching

Each item is rated on a 5 point likert scale, with 1="well below average", 2="below average", 3="average", 4="above average", 5="well above average". "Average refers to the average performance of all residents at the institution as perceived by the evaluator.

P3

Associations between exercise patterns and health outcomes among sedentary and non-sedentary individuals

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Introduction: Physical inactivity and sedentary behaviour are significant modifiable risk factors for chronic diseases. Despite well-established benefits of physical activity, adherence remains challenging. This study evaluates regular moderate exercise compared to intermittent vigorous exercise, and their associations with self-rated health, mental health and sleep quality among sedentary and non-sedentary individuals.

Methods: Participants from the Specchio population-based study in Geneva, Switzerland, completed yearly follow-ups between 2021 and 2024. Baseline information included physical activity levels and frequency, pre-existing conditions, as well as behaviour and socioeconomic factors. Follow-ups included information on self-rated health, new disease or health events, sleep quality, mental health and questions on behaviour. Logistic regression models were used to evaluate the association between exercise level at baseline (2021) and subsequent (2021-2023) overall self-rated health, mental health and sleep quality in all individuals, as well as in sedentary and non-sedentary groups. Linear regression with fitted models was done by exercise level between 2021 and 2024 for self-rated health, mental health and sleep quality.

Results: Overall, n = 5,720 participants were included, mean age was 51.2 years. A third of participants reported sedentary behaviour, more likely in young professionals. Individuals who engaged in intermittent vigorous exercise had higher scores for self-rated health, mental health and sleep quality compared to regular moderate exercise and partial to no exercise. Intermittent vigorous exercise was a determinant for better self-rated health (aOR 1.43 [1.18-1.72]), and better mental health aOR 1.77 [1.47-2.13]) when compared to other exercise patterns. Intermittent vigorous activity seemed to remain associated with favorable health outcomes including self-rated health aOR 1.25 [1.03-1.52] and mental health aOR 1.39 [1.17-1.66] in sedentary individuals.

Conclusion: Intermittent vigorous exercise could be a good option that primary care physicians can recommend especially for young professionals with a busy schedule and increasing sedentary behaviour.

P4

In Hospital Detection of Elevated Blood Pressure (INDEBP) - interim analysis of prospective cohort: Prevalence of hypertensive ambulatory blood pressure

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Introduction: Elevated blood pressure (BP) is frequent in hospitalized patients, but its relationship to ambulatory BP measurements (ABPM) remains unclear. This study assessed the prevalence of hypertension in the ambulatory setting following hospital discharge in patients with elevated in-hospital BP.

Methods: Medical inpatients with ≥2 BP readings ≥140/90 mmHg were included. Hospital BP was defined as the mean of these 2 readings. Exclusion criteria included symptomatic hypertension, BP >180/110 mmHg, hospitalization for acute cardiovascular conditions, and missing consent. Standardized BP measurement was the mean of the 2nd/ 3rd measurement after 5 minutes of seated rest. Four weeks post-discharge, all patients underwent 24-hour ABPM. Hypertension on ABPM was defined as a 24-hour mean BP ≥130 or ≥80 mmHg, with awake/asleep cut-offs of ≥135/85 mmHg and ≥120/70 mmHg, respectively. Statistical analyses used Wilcoxon signed-rank and chi-square tests.

Results: Of 488 screened patients, 89 were included, and 52 completed ABPM. Median age was 71 (IQR 63 – 77) years with 37% female. Median systolic/diastolic 24h, awake, and asleep ABPM values were 134/82, 136/85, and 127/75 mmHg, respectively. Thirty-seven patients (71%) had hypertensive BP in either systolic or diastolic 24-hour means, and 25 patients (48%) had hypertensive in both systolic and diastolic 24-hour means. Thirty-one patients (60%) had hypertensive systolic and 31 (60%) hypertensive diastolic 24-hour means, 27 (52%) and 28 patients (54%) hypertensive awake, and 34 (65%) and 38 (73%) hypertensive asleep periods. Among all patients, 11 (21%) showed no hypertension in ABPM, while 21 (40%) were consistently hypertensive across all periods. The comparison of patients with a hypertensive vs normotensive 24h-mean is shown in the table.

Conclusion: A relevant proportion of patients with elevated BP in hospital show hypertension in ABPM. These findings underscore the need for follow-up BP monitoring in such patients to assess their risk of persistent hypertension in the ambulatory setting.

Table: comparison of patients with a hypertensive ABPM vs those with a normotensive ABPM 4 weeks after hospital discharge.

BL characteristic	Hypertensive ABPM N = 37	Normotensive ABPM N = 15	p-value
Age (years), median (IQR)	68 (62–77)	75 (69–81)	0.163
Body mass index kg/m2, median (IQR)	27.4 (25.4–31.6)	23.5 (22.1–27.4)	0.028
Female sex, n (%)	12 (32.4)	7 (46.7)	0.517
Known hypertension, n (%)	21 (56.8)	9 (60.0)	1.000
Hospital BP systolic, median (IQR)	150 (147–157)	159 (149–164)	0.080
Hospital BP diastolic, median (IQR)	85 (79–89)	82 (76–84)	0.108
Standardized BP systolic, median (IQR)	145 (137–157)	132 (124–149)	0.028
Standardized BP diastolic, median (IQR)	85 (79–89)	77 (63–86)	0.009
Percent elevated BP values in hospital	58.8 (36.8–86.7)	25.0 (15.8–67.6)	0.028
Changes of antihypertensive medication during hospitalization, n (%)	19 (51.4)	6 (40.0)	0.663

P5

In which setting is inappropriate prescribing more prevalent among older multimorbid adults with polypharmacy across four European countries?

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Introduction: Polypharmacy is a growing safety concern among older adults, linked to potentially inappropriate medications (PIMs) and potentially prescribing omissions (PPOs), which contribute to adverse outcomes and increased healthcare costs. Tools like STOPP (Screening Tool of Older Persons' Prescriptions) and START (Screening Tool to Alert doctors to Right Treatment) criteria aim to improve prescribing quality. Longitudinal changes in PIMs and PPOs and variations across living settings and countries remain underexplored. To address these gaps, we analyzed PIM and PPO patterns in multimorbid older adults transitioning across different living settings over one year.

Methods: We used data from the control group (n = 1045) of the multinational OPERAM trial, a cluster-randomized controlled trial investigating medication optimization in patients aged ≥70 years with multimorbidity (≥3 chronic conditions) and polypharmacy (≥5 medications). A subset of the STOPP/START criteria (63/80 STOPP, 30/34 START), depictable in trial data, was applied to detect PIMs and PPOs. We assessed them at different time points (admission to discharge, admission to 12-month follow-up), by living place (home vs. nursing home) and country (Belgium, Ireland, Netherlands, Switzerland).

Results: At admission, 63.5% of patients had ≥1 PIM (mean 1.3, standard deviation [SD] 1.3), and 72% had ≥1 PPO (mean 1.5, SD 1.4). Among nursing home residents (n = 114), 74.6% had ≥1 PIM (mean 1.6, SD 1.3) compared to 62.3% of community-dwelling patients (mean 1.2, SD 1.3, p = 0.01), and 84.2% had ≥1 PPO (mean 2.0, SD 1.5) compared to 70.7% (mean 1.5, SD 1.4, p = 0.002). At discharge, 64.2% of patients had ≥1 PIM and 72.7% had ≥1 PPO, with no significant change from admission. Swiss patients had the highest PPO prevalence (mean 1.9, SD 1.6), patients from Belgium the lowest (mean 1.2, SD 1.2). Irish patients had the highest PIM prevalence (mean 1.4, SD 1.3), while Swiss and Dutch had the lowest (mean 1.2, SD 1.3). Between admission and 12-month follow-up, 23.7% of patients had an increase in PPOs while 21.9% had a decrease. 22.2% of patients had an increase in PIMs and 23.3% a decrease.

Conclusion: Inappropriate medications and potentially prescribing omissions are highly prevalent in multimorbid older adults, particularly in nursing home residents. Dynamic changes over time in this vulnerable population require a continuous process of medication review.

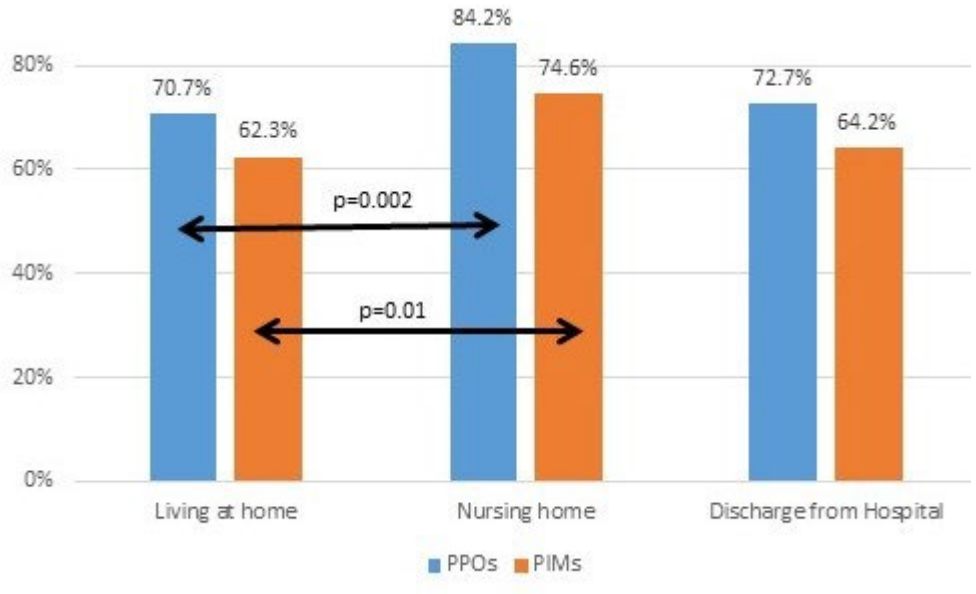

Fig. 1. Percentage of Patients with ≥1 PIM/PPO by Setting

P6

Incidence of acute kidney injury in patients treated with beta-lactam monotherapy or beta-lactam/amikacin combination therapy after autologous hematopoietic stem cell transplantation

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Introduction: Febrile neutropenia (FN) in hematopoietic stem cell transplantation (HSCT) requires the immediate initiation of appropriate antibiotic treatment. Two treatment approaches are proposed: a de-escalation strategy, consisting of a broad-spectrum β-lactam combined with an aminoglycoside, and an escalation strategy including a broad-spectrum β-lactam only. We aimed to investigate the incidence of acute kidney injury (AKI) in patients after autologous HSCT according to empiric antibiotic treatment with or without additional amikacin.

Methods: This two-centre, retrospective cohort study was conducted at the University Hospitals of Basel (centre 1) and Bern (centre 2), Switzerland between 2016 and 2022. Adult patients requiring antibiotic treatment due to FN after autologous HSCT were included. All patients received a broad-spectrum β-lactam. Patients in centre 1 additionally received the aminoglycoside amikacin for one to three days. The primary objective was the incidence of AKI (definition according to KDIGO) within seven days after the initiation of empiric antibiotic treatment.

Results: Overall, 125 episodes per centre were included. The majority of patients was male (n = 163, 65.2%) and the median age was 61 years [interquartile range (IQR) 55-67)] (Table 1). The median eGFR on the first day of antibiotic treatment was 96 ml/min/1.73m^2 (IQR 95-105) in centre 1 and 100 ml/min/1.73m^2 (IQR 86-111) in centre 2, respectively (p = 0.06). Cefepime was the beta-lactam most frequently administered (95%). The majority of patients in centre 1 received amikacin for three days (n = 66, 53%). There was no statistically significant difference in the incidence of AKI between centre 1 and centre 2 (4 vs. 5 patients, p = 1.0) (Figure 1). Only two patients (centre 2) suffered from an infection with an extended spectrum beta-lactamase producing pathogen.

Conclusion: There was no difference in the incidence of AKI in patients treated with or without amikacin due to FN after autologous HSCT. The short-term administration of amikacin in FN in haematological autologous transplant patients with normal to high baseline eGFR is safe regarding renal function. However, in a low-resistance setting, its empirical addition may be discussed.

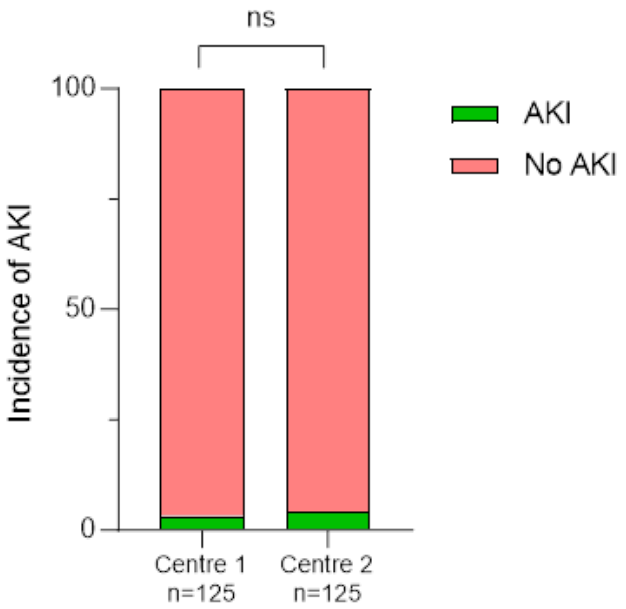

Figure 1. Incidence of acute kidney injury in the amikacin (Centre 1) and the non-amikacin group (Centre 2).

Variable	Amikacin group, centre 1 (*n* = 125)	Non-Amikacin group, centre 2 (*n* = 125)	Total (*n* = 250)
Number of patients	120	125	245
Number of treatment episodes	125	125	250
Age (years)	61 (55-67)	62 (55–67)	61 (55–67)
Male sex	87 (70)	76 (61)	163 (65)
BMI (kg/m^2)	24 (22-27)	24 (22-27)	24 (22-27)
Charlson Comorbidity Score	3 (2–4)	3 (2–4)	3 (2–4)
Haematological disorder			
Multiple myeloma	70 (56.0)	67 (54)	137 (55)
Acute leukaemia	1 (1)	13 (10)	14 (6)
Lymphoma	54 (43)	43 (34)	97 (39)
Amyloid light-chain-amyloidosis	0 (0)	2 (2)	2 (1)
Laboratory parameter*			
Creatinine (µmol/L)	65 (54–81)	59 (46–78)	63 (49–80)
eGFR (ml/min/1.73m^2)	96 (85–105)	100 (86–111)	98 (85–108)
C-reactive protein (mg/L)	26 (11.0–53)	23 (12–52)	24 (11–53)
Leucocytes (G/L)	0.06 (0.04–0.10)	0.04 (0.02–0.10)	0.05 (0.03–0.10)
Neutrophils (G/L)	0.02 (0.01–0.03)	0.03 (0.01–0.18)	0.02 (0.01–0.04)
Albumin (g/L)	30 (27–32)	28 (25–29)	29 (27–31)
Definition of infection			
Clinically defined infection	33 (26)	50 (40)	83 (33)
Microbiologically defined infection	41 (33)	47 (38)	88 (35)
Fever syndrome of unknown focus	51 (41)	28 (22)	79 (32)
Infection site			
Mucositis	72 (77)	6 (6)	78 (40)
Respiratory tract	7 (7)	6 (6)	13 (7)
Gastrointestinal tract	9 (10)	79 (80)	88 (46)
Urinary tract	0 (0)	6 (6)	6 (3)
Catheter	6 (6)	1 (1)	7 (4)
Central nervous system	0 (0)	1 (1)	1 (0.5)
Bacteraemia	34 (27)	33 (26)	67 (27)
Bacteraemia pathogens			
Escherichia coli	21 (62)	18 (55)	39 (58)
Escherichia coli ESBL	0 (0)	1 (3)	1 (2)
Klebsiella pneumoniae	1 (3)	6 (18)	7 (10)
Coagulase-negative staphylococci	0 (0)	3 (9)	3 (5)
Pseudomonas aeruginosa	2 (6)	3 (9)	5 (8)
Serratia marcescens	1 (3)	0 (0)	1 (2)
Enterococcus avium	1 (3)	0 (0)	1 (2)
Enterococcus faecalis	0 (0)	1 (3)	1 (2)
Gemella species	1 (3)	0 (0)	1 (2)
Gram positive rods	1 (3)	0 (0)	1 (2)
Streptococcus mitis group	6 (18)	0 (0)	6 (9)
Viridans streptococci	0 (0)	1 (3)	1 (2)
Colonization with ESBL producing organism	3 (2)	2 (2)	5 (2)
ESBL urine infection	0 (0)	1 (1)	1 (0.4)
Outcome			
Length of stay	23 (21–26)	21 (19–23)	22 (20–25)
Mortality 30 days	0 (0)	1 (1)	1 (0.4)
Mortality 90 days	0 (0)	1 (1)	1 (0.4)

Table 1. Patient baseline characteristics. Data are presented as count (percentages) or median (interquartile range). *at initiation of antibiotic treatment. BMI: body mass index; eGFR: estimated glomerular filtration rate; ESBL: extended spectrum beta-lactamase

P7

Major Adverse Cardiac Events After Bariatric Surgery: an 11-Year Comparison of Gastric Bypass vs. Sleeve Gastrectomy

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Introduction: Metabolic bariatric surgery is the most effective and durable treatment for weight loss and improvement of cardiovascular diseases. With sleeve gastrectomy now surpassing gastric bypass as the most common procedure worldwide, comparing their associations on major adverse cardiac events (MACE) is needed.

Methods: A population-based inverse probability weighted cohort study was conducted using administrative claims data from Switzerland. Adults undergoing gastric bypass or sleeve gastrectomy for obesity treatment between January 2012 and December 2022 were included. The primary outcome was 4-point MACE, including acute myocardial infarction, ischemic stroke, hospitalizations for heart failure, and all-cause mortality. Secondary outcomes were the individual components of MACE, surgical re-interventions, and associated complications.

Results: Of 39,068 patients (median [IQR] age, 42 [35–50] years; 28,556 women [73.1%]; 23,774 with a body mass index (BMI) ≥ 40kg/m² [60.8%]), 30,270 (77.5%) underwent gastric bypass and 8,798 (22.5%) sleeve gastrectomy. After weighting, over a median follow-up of 5.2 years, the primary outcome occurred in 580 patients (1.9%) in the gastric bypass group and 268 (3.0%) in the sleeve gastrectomy group, with incidence rates of 3.98 and 5.04 per 1,000 patient-years, respectively (hazard ratio [HR] 0.76; 95% confidence interval [CI], 0.65 to 0.89). This difference was primarily driven by lower rates of acute myocardial infarction (HR 0.63; 95% CI, 0.46 to 0.86) and ischemic stroke (HR 0.69; 95% CI, 0.49 to 0.98). No differences were observed in all-cause mortality. Secondary outcomes, both long- and short-term, favored gastric bypass over sleeve gastrectomy, except for higher rates of revision surgery and immediate postoperative complications.

Conclusion: For patients undergoing metabolic bariatric surgery, over a follow-up of up to 11 years, gastric bypass was associated with lower rates of MACE than sleeve gastrectomy. Known postoperative complications were confirmed for both gastric bypass and sleeve gastrectomy.

P8

Prescriptions of long-term beta blockers after myocardial infarction in European primary care settings (PRACTITIONER study) – a case vignette study with general practitioners

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Introduction: There is uncertainty about the chronic use of beta blockers after acute myocardial infarction (AMI) with preserved left ventricular function. General practitioners' (GPs) perspectives offer insights into beta blocker prescribing in daily practice amidst evolving evidence. The aim of this study was to investigate how GPs prescribe beta blockers for patients post-AMI, how prescribing patterns vary across Europe, and what factors influence their decisions to prescribe or deprescribe beta blockers.

Methods: We conducted a cross-sectional online survey of GPs in Europe, using hypothetical case vignettes to explore their decisions about beta blocker deprescribing post-AMI. Vignettes varied in time since AMI, side effects, and comorbidities of a hypothetical patient. Sociodemographic and professional characteristics of GPs were also collected. Each research site collected a minimum of 20 responses (mean = 30.2). We analyzed adjusted associations between deprescribing decisions and GP characteristics using a multivariable Poisson regression model with a generalized estimating equations approach, accounting for clustering at the GP and country levels, and descriptively assessed factors influencing these decisions.

Results: A total of 602 GPs from 24 research sites in 20 countries completed the survey. GPs' mean age was 45.2 years (SD 11.8), 60.1% were female, the mean work experience was 14.5 years (SD 10.8). Overall, 89.2% of GPs opted to deprescribe beta blockers in at least one vignette. Time since AMI (5 years: adjusted RR 1.28, 95% CI 1.21–1.36; 10 years: adjusted RR 1.78, 95% CI 1.66–1.90, vs. 3 months) and the presence of side effects (adjusted RR 1.76, 95% CI 1.66–1.88) increased the deprescribing likelihood, while greater experience decreased it (adjusted RR 0.86, 95% CI 0.77–0.95 for the most experienced vs. least experienced).

Conclusion: In hypothetical scenarios, GPs are willing to deprescribe beta blockers post-AMI, factoring in patient-specific elements such as time since AMI and the presence of side effects. These findings suggest that while the debate around beta blocker continuation persists, GPs are already translating discontinuation practices into practice

P9

Trends in Avoidable Hospitalizations for Heart Failure in Switzerland (1999–2018): A Cross-Sectional Analysis

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Introduction: Cardiovascular disease (CVD) is the leading cause of death worldwide, causing nearly one-third of all deaths (18.5 million in 2019). Heart failure (HF), a major CVD subset, accounts for 1–2% of hospitalizations in Europe. The economic burden is high, with estimated annual costs of USD 16,000 per patient in the U.S. and a global cost of USD 108 billion in 2012. HF prevalence reached 64.3 million cases in 2017, rising due to aging and multimorbidity. As an ambulatory care-sensitive condition (ACSC), better primary care could reduce hospitalizations. Potentially avoidable hospitalizations (PAHs) serve as indicators of healthcare performance. Trends, determinants, and consequences of PAHs for HF in Switzerland from 1999 to 2018 were assessed in this study and published in 2024.

Methods: Swiss hospital discharge data (1999–2018) were analyzed. PAHs were defined using OECD criteria. Trends, demographics, admission characteristics, and healthcare resource use were assessed. Rates were expressed relative to total admissions or population. Trends were analyzed using linear regression. Multivariable logistic regression identified factors linked to emergency or ICU admissions, with results as odds ratios (OR) and 95% confidence intervals (CI). A two-sided test with $p < 0.05$ indicated significance.

Results: A total of 206,000 PAHs for HF were included (49.1% female, 55.8% aged over 80). Admission rates rose from 54.5 to 117.6 per 10,000 admissions (1999–2018). Age-standardized rates increased from 107.8 to 220.7 per 100,000 inhabitants. Patients over 80 accounted for 60.4% of cases in 2018 (vs. 49.2% in 1999). Emergency admissions rose from 60.7% to 89.0%, while ICU admissions slightly increased (7.6% to 8.6%). Median hospital stay fell from 12 to 8 days. PAHs for HF cost CHF 170 million in 2018, with 407 occupied beds annually.

Conclusions: PAHs for HF in Switzerland have steadily increased, reflecting an aging population and evolving healthcare needs. Strengthening outpatient care could reduce medical and financial burdens. These findings highlight the need for targeted interventions to optimize HF management in primary care.

Table 1. Consequences of potentially avoidable hospitalizations for heart failure, Switzerland, 1999–2018.

	Result
N	206,000
Type of hospital stay (%)	
Infirmary	161,847 (78.6)
Semi-private	29,392 (14.3)
Private	14,702 (7.1)
Intensive care unit stay (%)	17,855 (8.7)
Destination at discharge (%)	
Home	148,576 (72.1)
Medical home	25,493 (12.4)
Other	31,931 (15.5)
Length of stay (days)	10 [7 – 15]
Estimated cost (CHF) §	9313 [8717 – 13,866]

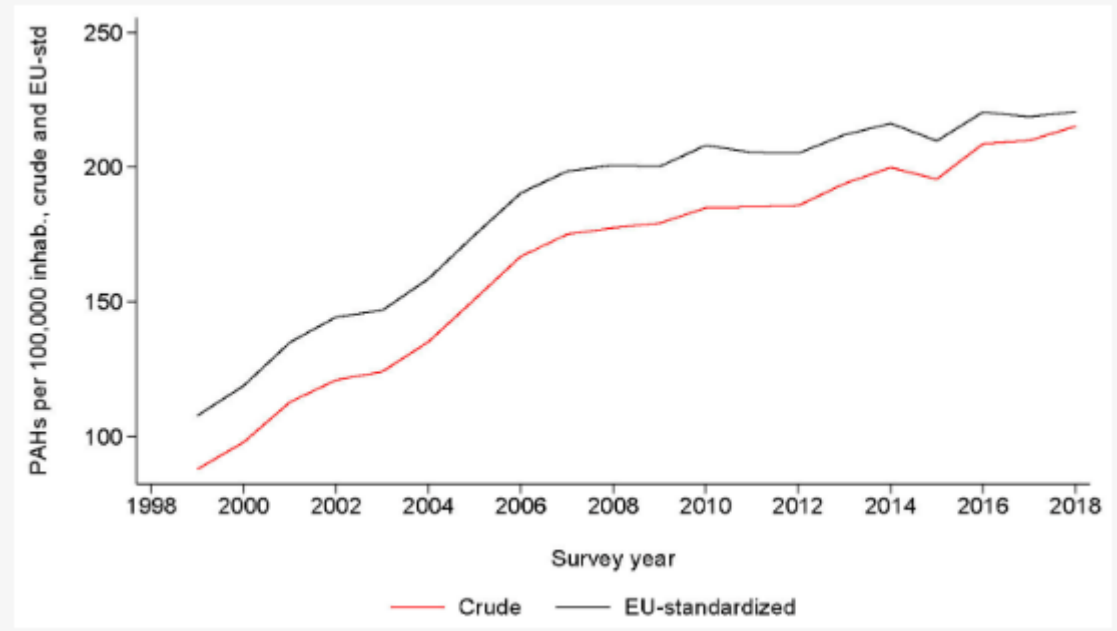

Figure 1. Trends in potentially avoidable admissions for heart failure in Switzerland, 1999–2018. Results are expressed as crude and age-standardized rates per 100,000 inhabitants.

P10

Varicella Vaccination Strategies for Refugees: Systematic or Targeted Approaches?

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Introduction: The varicella-zoster virus (VZV) can cause severe complications in non-immune adults, such as varicella pneumonia. Among migrant populations, access to preventive care, including vaccinations, is a public health challenge. Swiss vaccination plan[1] recommends that adults under 40 years of age with no clinical history of varicella should be vaccinated. However, Refugees may often be unaware of their vaccinal status and history of infection, as it is acquired in childhood. Our unit, which is part of the Geneva University Hospitals (HUG), is responsible for vaccinating refugees allocated to the canton of Geneva. As empirical evidence suggests that hospital admissions for varicella-related complications are rare among refugees, we decided to focus the VZV vaccination strategy on women of childbearing age because of the significant risk of foetal complications associated with varicella infection during pregnancy.

Methods: From June 2021 to December 2024, 249 women aged 18-40 years underwent systematic anti-VZV IgG screening before vaccination. A descriptive analysis of serological data was performed, complemented by an economic evaluation comparing the costs of serological testing (37.80 CHF/test) with systematic vaccination with the Varilrix vaccine (two doses, 62.50 CHF/dose).

Results: 29% of the women were from Turkey and 23% from Afghanistan, with the remainder coming from 30 different countries. Among them, 231 (92.8%) had immunity to VZV and 7.2% were seronegative. Seronegativity rates were comparable across all origins.

Conclusion: The results highlight the value of a targeted strategy against VZV in our refugee population. This approach avoids unnecessary vaccination of those who are immune and reduces health care costs while maintaining personalised care. Furthermore, the lack of significant serological differences between geographical origins supports the use of a universal approach tailored to this population. This strategy highlights the importance of precision medicine applied to public health, by focusing on individualised strategies based on serological data. This tailored and cost-effective approach (Table 1) ensures the efficient allocation of resources, minimises unnecessary interventions, and better addresses the specific needs of vulnerable populations.

Type of strategy	Cost (CHF)	Number of women	Total cost (CHF)
Serology tests for the whole group	37.80	249	9’412.20
Vaccination (2 doses only for seronegative women)	62.5 (x2)	18	2’250
Total cost for targeted strategy: serology + vaccination	-	-	11’662.20
Theoretical cost of vaccination for the whole group (2 doses)	62.5 (x2)	249	31’125
Total cost for systematic vaccination	-	-	31’125.00

P11

Associations Between Vitamin-Mineral Supplement Use and Physical Activity Levels - A Prospective Study

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Background and aims: Vitamin and mineral supplements (VMS) are widely used, often due to the belief that they enhance energy and performance. However, the association between VMS use and physical activity levels within the general population remains inconclusive. We aimed to better understand how VMS consumption relates to the evolution of physical activity levels over time.

Methods: Two prospective analyses conducted on a population-based cohort in Lausanne, Switzerland. Participants were divided into VMS users and non-users. Physical activity levels were assessed using a self-reported questionnaire for the 1st and 2nd follow-ups (2009-2012, 2014-2017) and a wrist-worn triaxial accelerometer for the 2nd and 3rd follow-ups (2014-2017; 2018-2021).

Results: In the analysis using self-assessed physical activity levels, 2170 (53.6% female, 55.3±9.6 years) of the initial 5064 patients were included. Median time between follow-ups was 5.3, interquartile range: [5.1;5.4] years. In both bivariate and multivariate analyses, no association was found between VMS consumption and evolution of physical activity. Sedentary time decreased by -1 [-18;15] minutes in VMS consumers, and by -7 [-15;0.6] minutes (p = 0.530) in non-consumers. Vigorous physical activity decreased by -7 [-13;0] minutes in VMS consumers, and -9 [-12;-6] minutes (p = 0.551) in non-consumers. As for the accelerometry-assessed physical activity levels, 1377 (51.8% female, 61.4±9.4 years) of the 4881 initial participants were included. Median time between follow-ups was 3.8 [3.6;4.0] years. In both the bivariate and multivariable analyses, no significant association was found between VMS consumption and evolution of physical activity. Sedentary time was stable, 0 [-10;11] minutes in VMS consumers, and [-5;8] minutes (p = 0.868) in non-consumers. Vigorous physical activity decreased by -1 [-2;0] minute in VMS consumers, and -1 [-1;0] minute (p = 0.363) in non-consumers (Table 1).

Conclusion: In this population-based prospective study, we found no association between VMS consumption and changes in physical activity levels.

Table 1: bivariate and multivariable analyses of the change in physical activity levels according to vitamin-mineral supplement consumption, prospective analysis, CoLaus|PsyCoLaus study, Lausanne, Switzerland

	Bivariate			Multivariable		
	Non consumers	Consumers	P-value	Non consumers	Consumers	P-value
Questionnaire						
As time (minutes)						
Sedentary	-7 [-15 ; 0.3]	-1.0 [-17 ; 15]	0.482	-7 [-15 ; 0.6]	-1 [-18 ; 15]	0.530
Light	146 [139 ; 153.4]	140 [127 ; 154]	0.444	146 [139 ; 152]	145 [130 ; 159]	0.922
Moderate	-134 [-141 ; -128.0]	-136 [-148 ; -125]	0.785	-134 [-140 ; -128]	-138 [-151 ; -125]	0.589
Vigorous	-9 [-12 ; -6]	-6 [-10 ; -2]	0.448	-9 [-12 ; -6]	-7 [-13 ; 0]	0.551
As % of time						
Sedentary	-0.5 [-1.2 ; 0.3]	0.2 [-1.4 ; 1.8]	0.464	-0.4 [-1.2 ; 0.4]	0.1 [-1.5 ; 1.7]	0.582
Light	15.1 [14.4 ; 15.9]	14.8 [13.4 ; 16.1]	0.644	15.1 [14.4 ; 15.8]	15.0 [13.5 ; 16.5]	0.883
Moderate	-13.8 [-14.4 ; -13.1]	-14.3 [-15.5 ; -13.2]	0.477	-13.8 [-14.4 ; -13-1]	-14.4 [-15.7 ; -13.0]	0.428
Vigorous	-0.9 [-1.2 ; -0.6]	-0.6 [-1.1 ; -0.2]	0.505	0.9 [-1.2 ; -0.6]	-0.7 [-1.4 ; 0.0]	0.592
Accelerometer						
As time (minutes)						
Sedentary	1 [-6 ; 7]	2 [-8 ; 11]	0.816	1 [-5 ; 8]	0 [-10 ; 11]	0.868
Light	-4 [-6 ; -2]	-7 [-10 ; -3]	0.174	-4 [-7 ; -2]	-6 [-9 ; -3]	0.420
Moderate	-10 [-14 ; -6]	-15 [-20 ; -10]	0.202	-11 [-15.3 ; -8]	-13 [-19 ; -7]	0.667
Vigorous	-1 [-1 ; 0]	-1 [-1 ; 0]	0.656	-1 [-1 ; 0]	-1 [-2 ; 0]	0.363
As % of time						
Sedentary	1.2 [0.7 ; 1.7]	1.9 [1.1 ; 2.6]	0.136	1.3 [0.8 ; 1.8]	1.6 [0.9 ; 2.4]	0.524
Light	-0.2 [-0.4 ; -0.1]	-0.5 [-0.8 ; -0.2]	0.171	-0.3 [-0.5 ; -0.1]	-0.5 [-0.8 ; -0.1]	0.374
Moderate	-0.9 [-1.3 ; -0.5]	-1.3 [-1.8 ; -0.8]	0.226	-0.1 [-1.4 ; -0.6]	-1.1 [-1.7 ; -0.5]	0.756
Vigorous	-0.1 [-0.1 ; 0]	-0.1 [-0.1 ; 0]	0.938	-0.1 [-0.1 ; 0]	-0.1 [-0.1 ; 0]	0.710

P12

Development of the CARE-DM model to predict the risk of cardiovascular disease in older adults with type 2 diabetes

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Introduction: The European Society of Cardiology recommends the use of the SCORE2-Diabetes cardiovascular disease (CVD) risk prediction model in primary prevention for persons with diabetes aged 40–69 years; however, no model is currently recommended for older individuals. We aimed to develop a new risk prediction model, CARE-DM, for the estimation of incident CVD risk in older adults with type 2 diabetes.

Methods: We used individual participant data of persons aged ≥65 years with type 2 diabetes and without prior CVD from four population-based cohorts (CoLaus, HRS, Health ABC, SHARE) to develop a model to predict the risk of incident CVD event (a composite of cardiovascular death, nonfatal stroke, and nonfatal myocardial infarction), accounting for the competing-risk of non-cardiovascular death. We defined 5-year CVD risk categories as low (<2.5%), moderate (2.5-<5%), high (5-<10%) and very high (≥10%) risk. We assessed model calibration (observed-to-expected [O/E] ratio and calibration slope) and discrimination (c-index), and corrected estimates for optimism using bootstrapping and 10-fold cross-validation. We also conducted an internal-external cross-validation.

Results: The model was developed using data from 6'943 participants (median age 72 years, 56% women). During a median follow-up time of 6.3 years, 17% of participants experienced a CVD event and 22% died of non-cardiovascular causes. Using the model, 0% of participants were classified as low-risk, 3% as moderate risk, 39% as high-risk and 58% as very high risk (Figure 1). Agreement between observed and predicted 5-year risk was adequate (Figure 2). The optimism-corrected O/E ratio and calibration slope were 1.01 (95% CI 0.95-1.08) and 1.13 (0.95-1.31), respectively. The optimism-corrected c-index at 5-years was 0.65 (0.63-0.67). The c-index was similar across age groups, 65-74 years (0.61, 95% CI 0.58 to 0.64) and 75+ years (0.63, 0.60 to 0.65), as well as between men (0.64, 0.61 to 0.66) and women (0.65, 0.63 to 0.68). A model including an indicator for low-, moderate- or high-risk geographical region, classified as in SCORE2-Diabetes, showed similar performance.

Conclusion: The new CARE-DM model allows prediction of the incident risk of CVD in older adults with type 2 diabetes. Further external validation should be conducted to verify its performance prior to clinical implementation.

Figure 1. Cumulative incidence curves by risk group

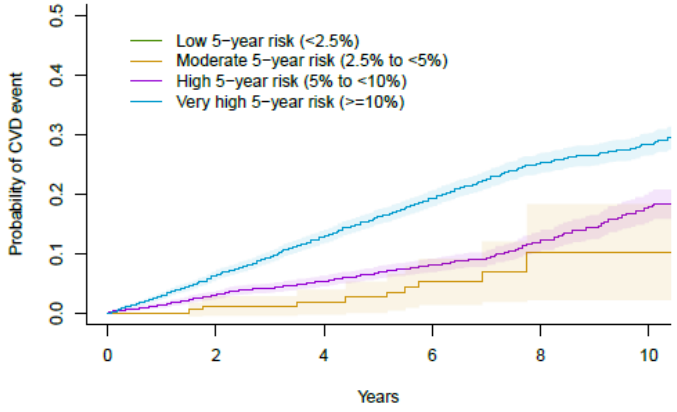
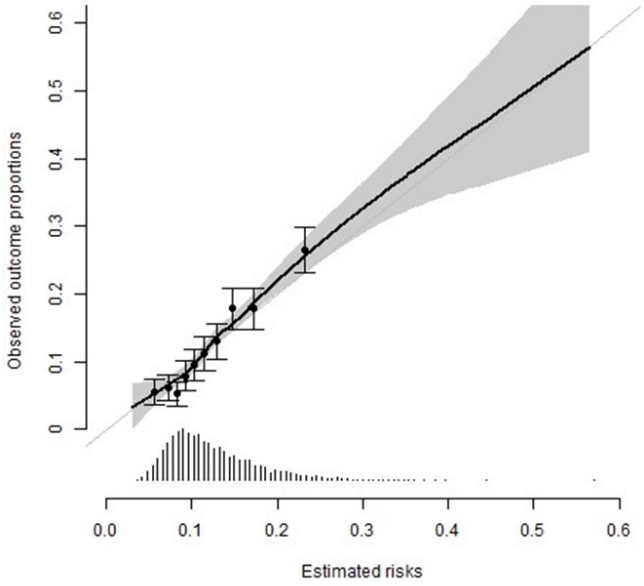


Figure 2. Calibration plot at 5-years



P13

Exploring the mediating role of chronic conditions in the association between socioeconomic disadvantage and frailty development: a population-based study of older adults in a Swiss city, Lausanne cohort 65+

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Introduction: Frailty represents a major public health challenge amidst global population aging. While socioeconomic disadvantage is associated with a higher risk of frailty development, the mediating role of chronic conditions remains underexplored.

Methods: Data came from 3'643 participants (58.6% women) of the Lausanne cohort 65+, a population-based study of individuals aged 65-70 years at baseline in 2004, 2009, and 2014, residing in Lausanne, Switzerland, and followed until 2022. Baseline socioeconomic disadvantage was assessed via education, occupation, income, health insurance subsidy, and financial strain. Subsequent frailty was measured triennially using the Fried phenotype (unintentional weight loss, poor handgrip strength, exhaustion, slow walking speed, and low physical activity). We explored the mediating role of chronic conditions—obesity, diabetes, hypertension, cardiovascular disease, respiratory disease, and multimorbidity (≥2 conditions)—in the association between socioeconomic disadvantage at baseline and subsequent frailty, using counterfactual mediation analysis with Cox Proportional Hazard models to estimate the proportion mediated.

Results: Socioeconomic disadvantage was consistently and strongly associated with both chronic conditions and subsequent frailty. Participants with socioeconomic disadvantage had an increased risk of developing frailty compared with their socioeconomically advantaged counterparts, with age-, sex-, and cohort-adjusted Hazards ratios (95% confidence interval) ranging from 1.53 (1.10-1.95) to 2.56 (1.83-3.28). (Table 1). Obesity mediated 16% to 55%, diabetes mediated 11% to 22%, and multimorbidity mediated 21% to 39% of the increased frailty risk due to socioeconomic disadvantage. In contrast, hypertension, cardiovascular disease and respiratory disease showed minimal or non-significant mediation.

Conclusion: Chronic conditions, particularly obesity and diabetes, play a key role in mediating the long–term association between socioeconomic disavantage and frailty. Targeted early screening, diagnosis, and management of these conditions among socioeconomically disadvantaged individuals, along with structural interventions to prevent obesity and diabetes in the general population, could help reduce socioeconomic inequalities in frailty.

Table 1. Mediation of chronic conditions in the association between baseline socioeconomic factors and subsequent frailty, Lausanne Cohort 65+

Exposure	Mediator	Total association Hazards Ratio (95% CI)	Proportion mediated (95% CI)
Lower educational level *vs higher*	Obesity	1.54 (1.10-1.97)	0.55 (0.22-0.88)
Lower occupational position *vs higher*		1.57 (1.09-2.04)	0.39 (0.13-0.64)
Lowest income tertile *vs highest*		2.47 (1.77-3.16)	0.18 (0.09-0.27)
Receives health insurance subsidy *vs doesn't*		2.18 (1.63-2.72)	0.16 (0.05-0.27)
Experienced financial hardship *vs didn't*		2.47 (1.75-3.18)	0.29 (0.14-0.45)
Lower educational level *vs higher*	Diabetes	1.53 (1.10-1.95)	0.21 (0.01-0.41)
Lower occupational position *vs higher*		1.54 (1.08-2.01)	0.22 (0.01-0.42)
Lowest income tertile *vs highest*		2.36 (1.71-3.02)	0.14 (0.04-0.24)
Receives health insurance subsidy *vs doesn't*		2.18 (1.65-2.71)	0.11 (0.01-0.21)
Experienced financial hardship *vs didn't*		2.53 (1.80-3.26)	0.16 (0.01-0.31)
Lower educational level *vs higher*	Multimorbidity	1.57 (1.12-2.02)	0.39 (0.16-0.61)
Lower occupational position *vs higher*		1.61 (1.10-2.11)	0.30 (0.10-0.50)
Lowest income tertile *vs highest*		2.56 (1.83-3.28)	0.24 (0.15-0.34)
Receives health insurance subsidy *vs doesn't*		2.18 (1.62-2.74)	0.21 (0.09-0.33)
Experienced financial hardship *vs didn't*		2.47 (1.75-3.18)	0.23 (0.09-0.38)

Results are from counterfactual mediation models. Multimorbidity indicates having at least two chronic conditions (diabetes, hypertension, cardiovascular disease, respiratory disease). The total association is Hazards ratio (95% CI) from Cox proportional hazards ratio, adjusted for baseline age, sex, and cohort. Proportion due to mediation indicates the indirect association of the exposure with the outcome that involves pathways through the mediator.

P14

Factors influencing the transition to palliative care at the end of life

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Introduction: End-of-life care decisions are complex and often influenced by various factors, yet chemotherapy remains a frequent choice despite its limited benefits in advanced stages. Understanding how specific factors impact patients' willingness to transition to palliative care can provide valuable insights for improving care. This study examines these factors to support more informed and patient-centered decision-making.

Methods: A factorial vignette study was conducted in Switzerland with 1572 participants (51.4% women). The vignettes depicted interactions where physicians informed patients about their advanced cancer prognosis. Eleven attributes, including time for discussion, physician experience, and emotional self-disclosure, were systematically varied. Participants rated their willingness to initiate palliative care on an 11-point Likert scale. Data were analyzed using mixed effects regression models.

Results: The most influential factors increasing willingness to choose palliative care were adequate time for discussion (β = 1.60, p <0.01), provision of clear and detailed information (β = 1.51, p <0.01), and continuity of care (β = 0.94, p <0.01). Personal elements, such as emotional and personal self-disclosure (β = 0.32, p <0.01; β = 0.42, p <0.01), alignment with patient preferences (β = 0.66, p <0.01), and prior physician-patient relationships (β = 0.22, p <0.01; β = 0.29, p <0.01), also played a significant role.

Conclusion: This study highlights actionable factors that can improve transitions to palliative care. Showing understanding, clear communication, and patient-centered approaches were identified as key drivers of willingness to shift from active treatment. These findings underscore the potential for simple but meaningful adjustments in clinical practice to address a challenging area of care.

P15

Gut-microbiota Derived Phenylacetylglutamine: A Novel Biomarker for Adverse Events in Patients with Acute Coronary Syndrome

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Introduction: The gut microbiota-derived metabolite phenylacetylglutamine (PAGln) is linked to cardiovascular events. Data on its predictive utility towards ischaemic events in patients (pts) with acute coronary syndrome (ACS) remains scarce. Here we investigate the associations of PAGln with ischemic and fatal events in ACS pts and studied related mechanisms in endothelial cells.

Methods: In 1'848 prospectively recruited pts with ACS (SPUM-ACS; ClinicalTrials.gov Identifier: NCT01000701) PAGln levels were assessed and associations with major adverse cardiovascular events (MACE) and mortality were modelled using Kaplan-Meier (KM) method and Cox proportional hazard regression models. For experimental studies, endothelial cells (EC) were treated with physiological doses of PAGln and its effect on reactive oxygen species (ROS) generating enzymes were determined.

Results: In KM analysis, an increased 1-year MACE (p <0.001 - Figure 1A) and mortality risk (p <0.0001 - Figure 1B) was noted across PAGln tertiles. In line, multivariable analysis revealed higher PAGln levels (>2.6 µM) associated with MACE independently of traditional risk factors (HR 1.78, 95% CI 1.01 – 3.14; p <0.05) (Figure 1C). ROC analysis demonstrated a notable sex-specific difference in the predictive utility of PAGln for MACE. Among females, PAGln showed a discriminative performance with an AUC of 0.76 (95% CI: 0.66–0.86), whereas among male pts, discrimination was markedly lower, with an AUC of 0.59 (95% CI: 0.54–0.64) (p <0.01) (Figure 1D). Combination of elevated PAGln levels with the gut metabolite Trimethylamine-N-oxide (TMAO), a known prognostic biomarker in ACS, synergistically predicted enhanced MACE and mortality risk (HR: 2.30, 95% CI 1.35-3.93 p <0.01–HR: 2.72, 95% CI 1.5-7.08 p <0.05, resp.) (Figure 1E). In vitro, PAGln at the physiological dose (100 µM) induced oxidative stress via ROS-generating NADPH oxidase 2 (NOX2) enzyme in EC (p <0.0001) (Figure 2A and B).

Conclusion: PAGln represents an independent predictor of adverse outcomes in ACS patients, notably in a sex-specific fashion. Our results highlight the importance of gut microbiota-derived metabolites in assessing cardiovascular risk.

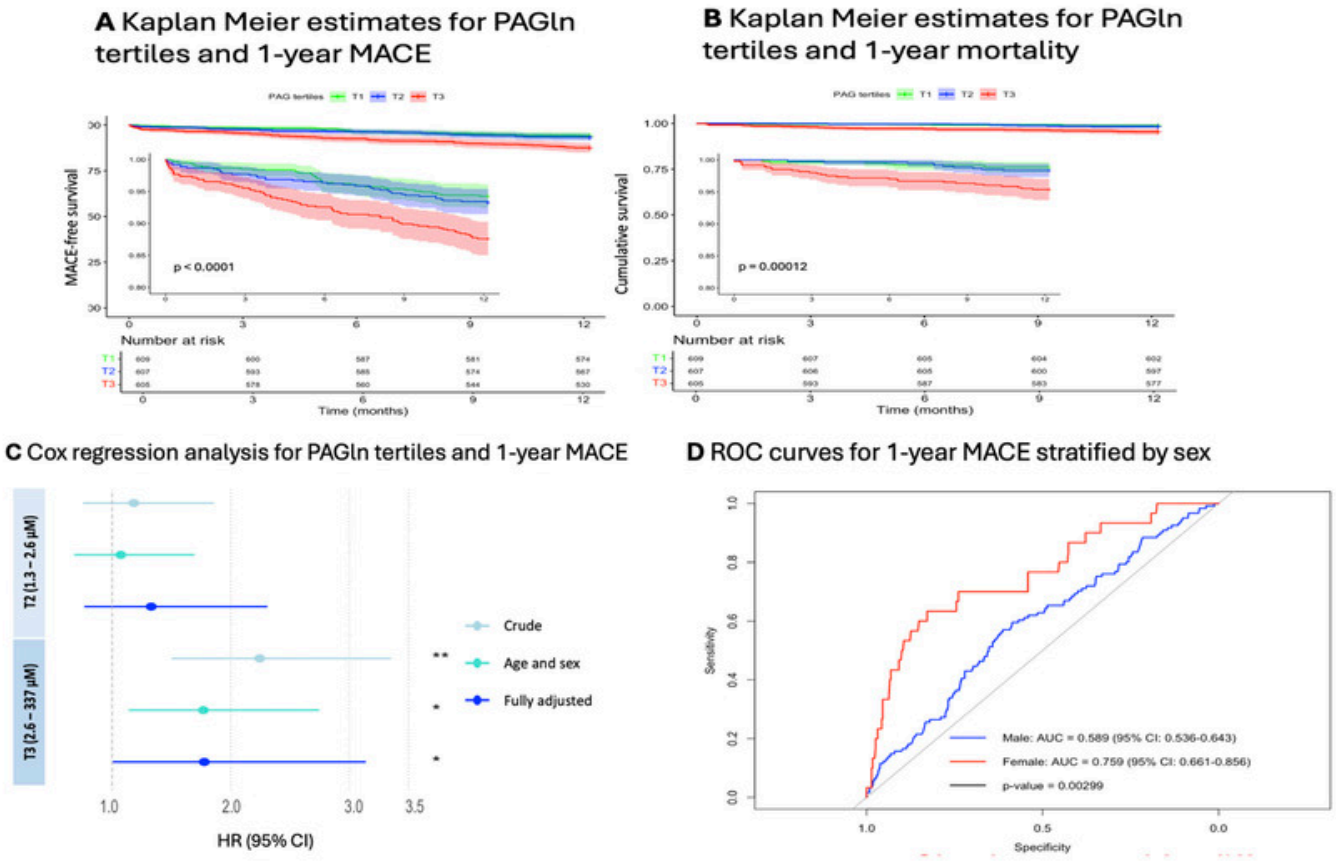

Figure 1. KM estimates **A)** MACE and **B)** mortality. **C)** Crude and adjusted HR for MACE. **D)** Receiver Operating Characteristic curves for plasma PAGln levels in predicting MACE, stratified by sex.

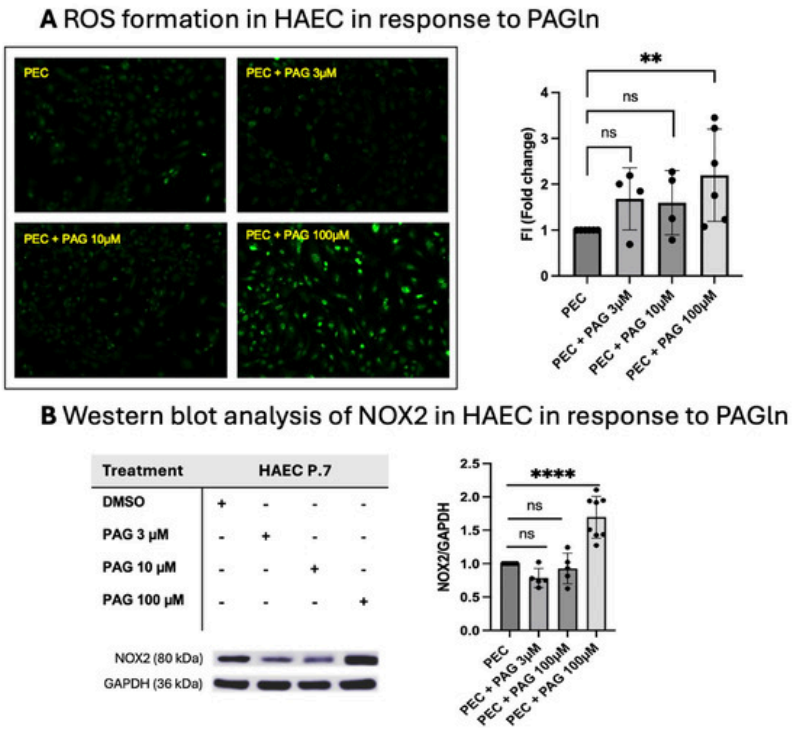

Figure 2. A) ROS formation in response to different physiological doses of PAGln (3, 10 and 100 µM). **B)** Western blot analysis of the protein expression level of NOX2 after treatment with PAGln.

P16

Investigating the association between serum magnesium, genetic variants, and chronic kidney disease: a prospective analysis

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Introduction: Magnesium is an essential trace element involved in numerous physiological processes. Recent evidence suggests that magnesium deficiency may play a critical role in the development and progression of chronic kidney disease (CKD). Therefore, this study aimed to investigate the association between genetic variations, serum magnesium levels, and CKD risk in the general population.

Methods: This prospective study included 4047 participants. Linear regression analyses were performed to identify single nucleotide polymorphisms (SNPs) associated with serum magnesium levels. Cox regression models were used to evaluate the impact of hypomagnesemia on the risk of CKD. Mediation analyses were applied to assess the direct and indirect effects of SNPs on CKD development via magnesium levels. Additionally, Mendelian Randomization (MR) analyses were conducted to investigate the causal relationship between genetically predicted serum magnesium levels and CKD risk.

Results: Multivariable linear regression analyses identified significant associations between SNPs rs4072037, rs3925584, rs11144134, and rs4460629 and serum magnesium levels (all $p < 0.05$). Hypomagnesemia was significantly associated with an increased risk of CKD, with a hazard ratio (HR) of 1.74 (95% CI: 1.15–2.64, $p = 0.009$). Analyses based on single SNPs and SNP scores did not reveal direct effects on CKD risk. Mediation analyses demonstrated that rs4072037, rs3925584, rs11144134, and rs4460629 exerted significant indirect effects on CKD risk through serum magnesium levels (all $p < 0.05$). However, the proportion of the total effect mediated by magnesium was low and not statistically significant, suggesting a limited contribution of this pathway to overall CKD risk. MR analyses found no evidence of a significant causal relationship between genetically predicted magnesium levels and CKD risk.

Conclusion: This study emphasizes the pivotal role of magnesium in the development and progression of CKD, while also highlighting the substantial impact of genetic variations on serum magnesium levels.

P17

Is thyroid antibody testing useful to predict the risk of coronary heart disease and stroke independently of thyroid function? An individual participant data analysis

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Introduction: Thyroid peroxidase antibody (TPOAb) is present in 35–65% of individuals with subclinical hypothyroidism and predicts progression to overt hypothyroidism. While subclinical and overt hypothyroidism are associated with increased cardiovascular risk, the role of TPOAb in predicting coronary heart disease (CHD) and stroke independently of thyroid function remains unclear.

Methods: We identified studies through Thyroid Studies Collaboration (TSC). Additionally, we searched MEDLINE, EMBASE, and Cochrane Library databases from inception until July 2024 for eligible prospective studies reporting baseline thyroid function, TPOAb, and any of the following outcomes: CHD events, CHD mortality, stroke events, and stroke mortality. We used Cox proportional hazards models, adjusted for age, sex, and thyroid-stimulating hormone (TSH) within each cohort, followed by a random-effects meta-analysis to examine cardiovascular outcomes by TPOAb status, overall and comparing individuals with subclinical hypothyroidism to euthyroid individuals. Additional adjustments included smoking status, body mass index (BMI), systolic blood pressure, diabetes status, and total cholesterol.

Results: Among 100,250 adults from 14 cohort studies (median age 55 years, 56.7% women), 11.9% were TPOAb-positive, and 5.4% had subclinical hypothyroidism (of whom 41.6% were TPOAb-positive). We found no evidence of a risk difference between participants with positive vs. negative TPOAb in the overall population: HR 1.00 (95% CI 0.90-1.11) for CHD events; HR 0.95 (95% CI 0.78-1.16) for CHD mortality; HR 0.98 (95% CI 0.87-1.11) for stroke events; and HR 1.06 (95% CI 0.81–1.40) for stroke mortality. Comparing TPOAb-positive subclinical hypothyroidism to euthyroid individuals yielded no risk differences for CHD or stroke outcomes. Among participants with subclinical hypothyroidism, positive vs. negative TPOAb HRs were 0.87 (95% CI 0.72 to 1.05) for CHD events, 0.88 (95% CI 0.64 to 1.21) for CHD mortality, 0.68 (95% CI 0.51 to 0.90) for stroke events, and 0.93 (95% CI 0.51 to 1.90) for stroke mortality.

Conclusion: Positive TPOAb does not predict CHD or stroke risk independently of thyroid function. Our findings suggest that TPOAb testing is not useful in predicting cardiovascular risk in euthyroid individuals or those with subclinical hypothyroidism.

P18

New profession, new solution: Implementation of a Physician Associate as Coordinator of the Fracture-Liaison-Service at Cantonal Hospital Baselland

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Introduction: The role of the Physician Assistant (PA) first emerged in America in 1960 due to the shortage of doctors at the time and has since arrived in Europe. The tasks of PAs generally include semi-autonomous work under the supervision and delegation of physicians in order to supplement and relieve the physicians in their work, as well as participation in scientific projects.

Method: The Fracture Liaison Service (FLS) at Cantonal Hospital Baselland (KSBL) is linked to the University Center for the Musculoskeletal System and was initiated in December 2023 by the head traumatologist in orthopaedics. It was implemented in collaboration with the internist in orthopaedics and a PA in orthopaedics, based on the Best Practice Framework (BPF) of the International Osteoporosis Foundation (IOF). The aim of the FLS is to identify patients with low- or atraumatic fractures, assess them comprehensively and initiate coordinated treatment in order to prevent subsequent fractures. Every month, the FLS identifies and cares for around 50 orthopaedic inpatients. The PA carries out assessments, provides information about osteoporosis and its prevention and treatment and, if necessary, coordinates further investigations and treatment. Since March 2024, the FLS has also been offering a weekly outpatient consultation in which an average of 2 patients are advised, treated (e.g. infusions) and trained in the independent administration of medication by the PA.

Results: The initial results after one year show a high level of efficiency in the detection of new cases of osteoporosis, information and education of patients and relatives, as well as recommendations for further therapies and clarifications to the further treatment providers. Externally, an increase in Dexa measurements has already been noticed in the region. There is also a high level of patient and referring physician satisfaction.

Conclusion: The PA profession has great potential to close gaps in care and relieve the burden on doctors. In the coming years, increasing professionalization, internationalization and integration in various healthcare systems can be expected. Studies show that both doctors and patients are satisfied with the contribution of this profession to health promotion and that PAs report good job satisfaction (Malone, 2022). Cooperation

with other healthcare professions, legal protection and the creation of attractive career prospects will be decisive for the success of this profession.

P19

Practice, Knowledge and Attitude of Physicians and Pharmacists towards the Spontaneous Reporting System of Adverse Drug Reactions in Switzerland

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Introduction: Reporting adverse drug reactions (ADRs) is important for patient safety by supporting the early detection of potential drug risks. Despite legal obligations in Switzerland, underreporting of ADRs is common and comparable to other countries [1].

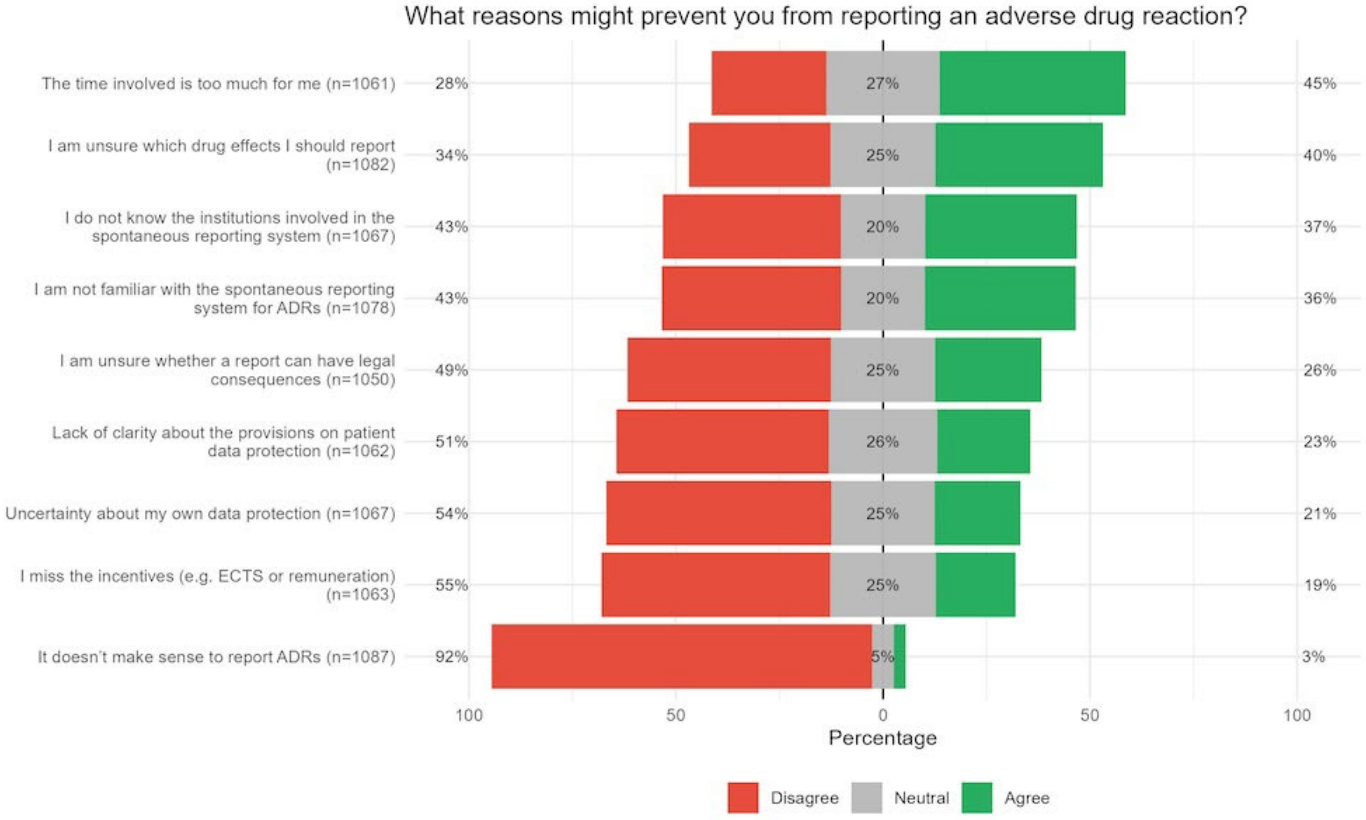
This study aims to assess the practice, knowledge and attitude of physicians and pharmacists towards the spontaneous reporting system of ADRs in Switzerland.

Methods: A nationwide cross-sectional survey in electronic format was sent to physicians and pharmacists.

Results: A total of 835 physicians and 273 pharmacists filled out the questionnaire. Participants had a mean professional experience of 20.8 years. ADRs were previously suspected by 589 (53.2%) of participants, and 562 (50.7%) had reported ≥1 ADR. Most HCPs reported to Swissmedic (396), pharmaceutical companies (132), and regional centers (91). Two-thirds of participants (716 [64.6%]) had received information about their statutory obligation to report certain ADRs as part of their vocational training. Uncertainty about which drug effects should be reported (Fig. 1) was expressed by 438 participants (39.5%). Participants largely disagreed with 'I do not think it makes sense to report ADRs' (999 [90.2%]). Regarding 'The reporting procedure takes too much time,' 477 (43.1%) agreed. Over half of participants disagreed that they miss incentives when reporting ADRs (587 [53.0%]), that they are uncertain about their own data protection (580 [52.3%]), and that they lack clarity about the provisions on patient data protection (580 [52.3%]). Nonetheless, 270 (24.4%) were concerned about legal consequences from an ADR report. Most participants preferred reporting ADRs through an online registration form via a website (865 [78,1%]). More than half (609 [55,0%]) expressed the need for more information on which drug effects should be reported, while 648 (58,5%) showed willingness to uptake further training in pharmacovigilance.

Conclusion: In this nationwide survey, over half of physicians and pharmacists reported prior experience with ADR reporting, primarily to Swissmedic. While most participants were aware of their reporting obligations, uncertainty about which drug effects to report and concerns about the time required and potential legal consequences remain barriers. Addressing these challenges could enhance ADR reporting compliance and improve patient safety.

Fig. 1



ECTS = European Credit Transfer System. Parentheses = number of respondents/reason.

P20

The Challenges of Attracting Young Doctors to General Internal Medicine: A Qualitative Study

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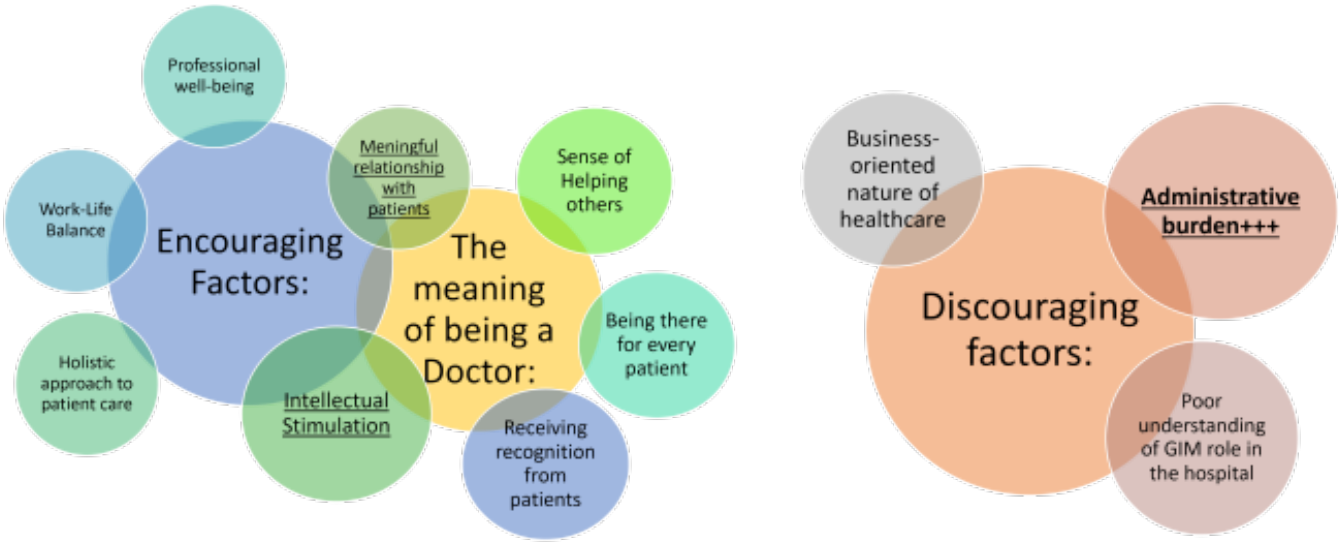
Introduction: In recent years, there has been a growing mismatch between the trend toward medical specialization at the expense of general internal medicine (GIM) and societal needs, especially with the increasing number of polymorbid and complex patients. In addition, the new generation of residents places greater emphasis on values such as work-life balance and professional well-being. This study aims to explore the factors that encourage or discourage young physicians from specializing in GIM. This may help to address these issues and prevent a shortage of internists.

Methods: This qualitative study was conducted through focus groups held in five hospitals of different sizes, located in both the French and German speaking regions of Switzerland. The 29 participants ranged in age from 26 to 39 years with 1 to 7 years of clinical experience. The discussions were guided by a semi-structured interview protocol that included open-ended questions about factors influencing the decision to specialize in GIM, the perceived value of the profession, and its perception by society and the medical community. The transcripts were then analyzed using thematic analysis in an iterative process. The analysis aimed to capture the depth and complexity of the participants' experiences and to identify common patterns and unique insights.

Results: The main factors that inspire or discourage residents to specialize in GIM are graphically depicted in Figure 1. Encouraging factors were related to elements that give meaning to the profession, such as the holistic approach to patient care. Conversely, the primary discouraging factors were related to systemic issues like administrative load that diminish the attractiveness of GIM. Although the perception of GIM during medical studies was generally positive, the findings revealed that the role of hospital-based GIM is poorly understood and appreciated by the general public.

Conclusions: Addressing the systemic issues identified in this study, such as reducing administrative burden and improving public understanding of GIM, is critical to attracting young physicians to this specialty. By focusing on protecting the focus on patient care and the meaningful activities of the profession, we can improve job satisfaction and ensure that GIM continues to effectively meet societal needs.



P21

A 71 year old patient with loss of appetite, fatigue and headache

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Learning objective: In unclear cases, prior diagnostic judgement may need to be challenged, including a thorough review of previous diagnostic imagings.

Case: A 71-year-old female patient was admitted to the emergency department with loss of appetite and lack of energy. The patient had been in good health and full of energy until one month prior, when she had presented at another hospital with headache and double vision. At that time, cranial CT and MRI had reportedly been unremarkable and treatment with aspirin had been initiated for a suspected microvascular etiology. Nine months earlier, a gastroscopy and colposcopy had shown signs of gastritis and a few polyps. At our hospital, the clinical examination was unremarkable. Initial laboratory testing was normal except for low TSH levels with normal free thyroid hormone levels, which was interpreted in light of grave's disease diagnosed over twenty years ago. A CT scan of the thorax and abdomen did not show any clues for neoplasia except for two liver lesions, which were identified as haemangiomas in the complimentary sonography. We ordered a review of the MRI scan from the other hospital, primarily looking for signs of endocrine orbitopathy. While the latter was not found, a haemorrhaged pituitary macroadenoma was identified and confirmed on high-resolution MRI of the pituitary gland. Evaluation of the hormonal axes revealed panhypopituritarism and cortisol substitution was started. Within two days, the patient markedly improved and was discharged home with an appointment for a follow up endocrinology consult.

Discussion: Our patient showed an uncommon reason for loss of appetite. This case illustrates a common pitfall, where clinical judgement relied on pre-existing information that was only

questioned after unrevealing initial evaluation. Hypopituitarism can present with a variety of symptoms, which may include fatigue, decreased appetite, cold intolerance, dry skin and other symptoms depending on the affected hormonal axes. The consequences of ACTH deficiency are the most serious with the potential for life-threatening hypotension. Pituitary apoplexy is a rare cause of hypopituitarism, usually caused by haemorrhage into a pre-existing pituitary adenoma. It typically presents with headache, diplopia, possible visual loss and sudden onset hypopituitarism, most of which were present in our patient.

P22

Adherence to guideline recommendations during the COVID-19 pandemic: retrospective study of real time clinical data

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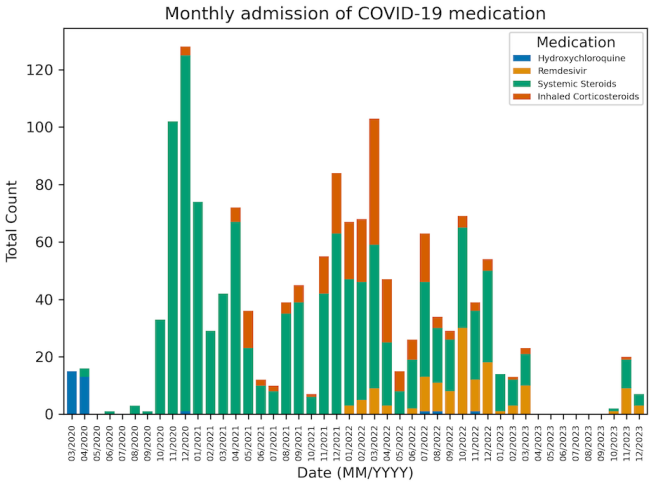
Introduction: Rapid spread of the novel coronavirus SARS-CoV-2 and evolving evidence on treatment efficacy of various medications led to changing recommendations how to treat patients with coronavirus disease 2019 (COVID-19). In this study, we assessed how guideline recommendations were implemented into clinical practice.

Methods: Retrospective observational study of adult patients hospitalized with COVID-19 that were not in best supportive care of dying. We assessed guideline adherence to four selected medications (Hydroxychloroquine, Remdesivir, systemic steroids, inhaled corticosteroids) with changing recommendations of the internal hospital internal guideline and the World Health Organization (WHO) guideline. The severity of comorbidity was categorized using the Charlson Comorbidity Index (CCI).

Results: Out of 3003 patients, who were hospitalized due to or with COVID-19 between 03/2020 and 11/2023, 2636 were included in the analysis (1193 [45.26%] female, median age of 73 years). Most patients were multimorbid (CCI 0 in 301 [11.42%], CCI 1-2 in 587 [22.27%], CCI 3-4 in 1100 [41.73%], and CCI ≥5 in 648 [24.58%]). In total 25.87% were admitted to the intermediate care unit or intensive care unit. Oxygen therapy was used in 1495 [56.71%] patients, invasive ventilation in 198 [7.51%] patients, and 171 [6.49%] died. Most disagreements with guidelines were observed for hydroxychloroquine (HCQ) and inhaled corticosteroids. HCQ was used in 32 patients. In 11 [34.38%] cases the use was not in agreement with the internal guideline and in 3 [9.37%] cases it was used after the first WHO recommendation not to use the medication. Inhaled corticosteroids were used in 231 cases of which 148 [64.07%] were not according to the internal guideline. Remdesivir was used in 138 cases (45 [32.61%] WHO 'conditional against', 83 [60.15%] WHO 'conditional for' recommendation and in 36 [26.09%] cases not adherent to the internal guideline). Systemic steroids were used in 1096 cases with a 100% adherence rate. In 1441 cases (54.67% of the study population) there were no admission of systemic steroids although it would have been according to the internal guideline.

Conclusion: Evolving evidence and changes in recommendations may explain why physicians use medications against the recommendations of guidelines. In our study, we showed non-adherence for hydroxychloroquine and inhaled corticosteroids indicating professional skepticism against recommendations.



P23

An unusual cause of chronic diarrhea

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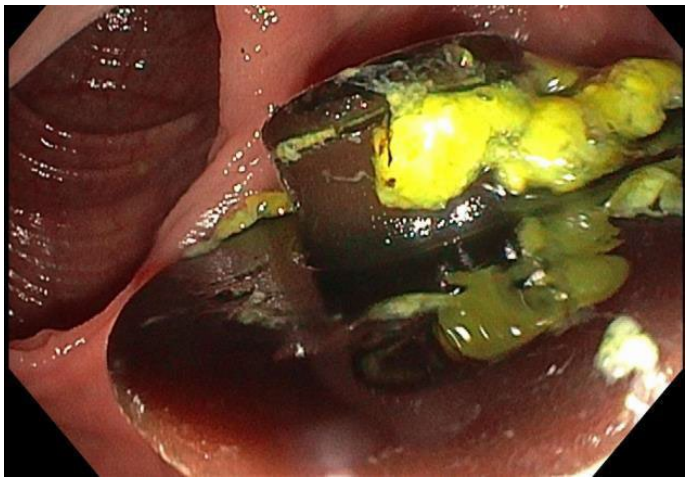
Learning objectives: Percutaneous endoscopic gastrostomy (PEG) is performed to ensure enteral nutrition in patients with stenosing tumors and dysphagia among other conditions. In case of chronic diarrhea with no recognizable cause, a correct position of the PEG tube needs to be verified.

Case: A 78-year-old female patient presented with ongoing, progressively worsening watery diarrhea for 3 months. The patient suffered from oculopharyngeal muscular dystrophy with dysphagia requiring total enteral artificial nutrition and hydration, and had undergone a pull-PEG tube insertion two years before as well as a hemicolectomy 14 years before due to colon cancer. The patient reported an unintentional weight loss of 4-5kg in the last 3 months (10% body weight, BMI 17kg/m^2), leading to a loss of strength and energy. Empirical antibiotic therapy prescribed by the family doctor had not led to any symptom improvement. Physical examination and blood analysis did not reveal any indicative findings, a stool sample for Clostridium difficile was negative. A colonoscopy was performed, during which the plastic inner bumper of the PEG tube was found in the colon. This was confirmed by a computed tomography showing the inner bumper in the colon lumen with additional wall thickening and diffused increased enhancement in the small intestine. Blood analyses showed hypothyroidism, which we interpreted as a consequence of the malabsorption of levothyroxine pills. The dynamics and cause of the tube dislocation were unclear. It was assumed that during the PEG-placement an accidental puncture of the colon between the abdomen and stomach wall had occurred, with spontaneous migration into the colon. In a simultaneous gastroscopy and re-colonoscopy the migrated PEG tube was removed through the colon, the fistula tracts in the cecum and stomach were closed, a new PEG tube was inserted so that feeding could be resumed.

Discussion: After excluding common causes of diarrhea and weight loss, we performed a colonoscopy to find the underlying issue. The diarrhea can be explained by the fact that the feeding solution had been unknowingly applied directly into the colon and excreted undigested. Medication such as levothyroxine and vitamin D had also not been correctly absorbed. A PEG tube dislocation has to be considered as a possible cause for persistent diarrhea with consequent unintentional weight and function loss due to malabsorption.



Colonoscopy snapshot: inner bumper of migrated PEG tube

P24

Antibiotic Prescription for Elderly Patients in End-of-Life Care: A National Randomized Survey Among Physicians in Switzerland

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Introduction: Infections are common at the end of life, yet the benefits of antibiotics for symptom relief or prolonged survival remain uncertain. This study aimed to investigate physicians' attitudes and factors influencing antibiotic prescription for frail older patients in palliative care settings across Switzerland.

Methods: A survey was conducted among physicians specializing in internal medicine, geriatrics and family medicine, practicing in both hospital and ambulatory settings across Switzerland's three linguistic regions. Participants were randomized to receive one of three clinical vignettes describing a geriatric patient with aspiration pneumonia, with variations in advance directives, functional dependence, and dementia status. They were asked whether they would prescribe antibiotics and to explain their reasoning. The survey also collected participant demographics, including age, linguistic region, practice setting and palliative care experience.

Results: Among the 195 participants, 78% opted not to prescribe antibiotics. The primary reason for prescribing antibiotics was to alleviate dyspnea. Physicians were significantly more likely to prescribe antibiotics for patients with better functional status. Notably, 76.4% believed withholding antibiotics could shorten life, while 77.9% did not think antibiotics improved comfort. Physicians in French-speaking regions were more likely to prescribe antibiotics than their counterparts in German- and Italian-speaking regions (33.7% vs. 13.8% and 11%, respectively). Age, practice setting and palliative care experience did not significantly affect prescribing behavior. Additionally, 77.9% of physicians stated they would modify their decision if the patient's family disagreed with their initial choice.

Conclusion: Better functional status was the strongest predictor of antibiotic prescription among physicians for this population. Cultural differences were observed, with physicians in French-speaking regions more likely to prescribe antibiotics compared to those in German- and Italian-speaking regions. While most physicians believed withholding antibiotics could shorten life, they did not perceive antibiotics as improving patient comfort. These findings highlight ongoing uncertainties and cultural variations in antibiotic prescribing practices at the end of life.

P25

Associations Between Vitamin-Mineral Supplement Use and Physical Activity Levels. A Cross-Sectional Study

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Background and aims: Vitamin/mineral supplements (VMS) are commonly consumed, based on the belief of their invigorating properties. Still, the association of VMS and physical activity (PA) levels in the general population remains equivocal. We aimed to study the association between VMS consumption and PA levels.

Methods: Three cross-sectional analyses (2009-2012, 2014-2017 and 2018-2021) conducted on a population-based cohort in the city of Lausanne, Switzerland. Participants were divided into VMS users and non-users. PA levels were assessed using a self-reported questionnaire for the 1st and 2nd follow-ups and a wrist-worn triaxial accelerometer for the 2nd and 3rd follow-ups.

Results: Overall, 4157 (54.1% female, 57.5±10.5 years) and 2149 (51.2% female, 61.0±9.5 years) participants were included in the questionnaire-based analyses of the 1st and 2nd follow-ups, respectively. After multivariable analysis, no association between VMS consumption and physical activity was found in either. The sedentary behavior of the 1st and 2nd follow-ups, re-

spectively, represented 54.1±0.6% and 54.0±0.7% of total daytime in VMS consumers, and 53.8±0.3% (p = 0.633) and 53.7±0.4% (p = 0.708) in non-consumers. Vigorous physical activity represented respectively 3.7±0.2% and 3.1±0.2% of time in VMS consumers, and 3.9±0.1% (p = 0.348) and 3.0±0.15% (p = 0.578) in non-consumers (Table 1). As for the accelerometery-assessed physical activity levels, 2267 (52.1% female, 61.9±9.7 years) and 1777 (52.5% female, 65.0±9.5 years) participants were included in the analyses of the 2nd and 3rd follow-ups, respectively. After multivariable analysis, no association was found between VMS consumption and physical activity in either follow-up. The sedentary behavior of the 2nd and 3rd follow-ups, respectively, represented 68.7±0.4% and 70.0±0.4% of daytime in VMS consumers, and 69.1±0.3% (p = 0.466) and 70.1±0.3% (p = 0.791) in non-consumers. Vigorous physical activity represented respectively 0.5±0.2% and 0.4±0.02% of daytime in VMS consumers, and 0.4±0.2% (p = 0.227) and 0.4±0.02% (p = 0.711) in non-consumers.

Conclusion: In this population-based cross-sectional study, we found no association between VMS consumption and physical activity levels.

Table 1: bivariate and multivariable associations between vitamin-mineral supplement consumption and self-reported physical activity levels, CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	Bivariate			Multivariable		
	Non consumers	Consumers	P-value	Non consumers	Consumers	P-value
First follow-up						
As time (minutes)						
Sedentary	523 [396 ; 651]	504 [409 ; 622]	0.153	519±3	519±6	0.964
Light	173 [107 ; 255]	185 [125 ; 260]	0.006	190±2	194±4	0.376
Moderate	188 [118 ; 287]	180.5 [120 ; 269]	0.133	217±2	210±5	0.200
Vigorous	17 [0 ; 49]	15 [0 ; 39]	0.015	38±1	35±2	0.346
As % of time						
Sedentary	54.8 [41.6 ; 67.4]	53.6 [43.2 ; 66.0]	0.916	53.8±0.3	54.1±0.6	0.633
Light	18.0 [11.2 ; 26.6]	19.7 [12.9 ; 27.7]	<0.001	19.8±0.2	20.3±0.4	0.220
Moderate	19.65 [12.2 ; 29.8]	19.1 [13.0 ; 28.4]	0.540	22.5±0.2	21.8±0.5	0.236
Vigorous	1.7 [0 ; 5.1]	1.6 [0 ; 4.2]	0.029	3.9±0.1	3.7±0.2	0.348
Second follow-up						
As time (minutes)						
Sedentary	524 [408 ; 644]	503 [407 ; 625]	0.046	516±4	520±7	0.689
Light	324 [239 ; 424]	333 [253 ; 420]	0.310	341±4	338±6	0.604
Moderate	52 [12 ; 106]	49 [14 ; 96]	0.397	76±2	72±4	0.400
Vigorous	10 [0 ; 37]	13 [0 ; 40]	0.166	29±1	30±2	0.620
As % of time						
Sedentary	54.9 [42.5 ; 66.4]	54.4 [43.3 ; 64.7]	0.364	53.7±0.4	54.0±0.7	0.708
Light	33.9 [25.3 ; 43.8]	36.0 [26.5 ; 44.9]	0.045	35.4±0.4	35.3±0.6	0.826
Moderate	5.3 [1.3 ; 11.1]	5.2 [1.6 ; 9.8]	0.566	7.9±0.2	7.6±0.4	0.490
Vigorous	1.1 [0 ; 3.8]	1.4 [0 ; 4.4]	0.124	3.0±0.1	3.1±0.2	0.578

P26

Case report: Extreme chronic anemia due to bladder tumor

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Learning objectives: In the rare cases of extreme chronic anemia (hemoglobin <2 g/dl) apply careful clinical observation and multidisciplinary approaches to recognize adaptive mechanisms and implement individualized, restrictive transfusion strategies.

Case: A 64-year-old female presented in hypovolemic shock with an exceptionally low hemoglobin level of 1.6 g/dl. She was unresponsive with centralized circulation and no visible external bleeding. Focused Assessment Sonography for Trauma (FAST) revealed a conglomerate in the bladder, interpreted as a clot or tumor. Computed tomography (CT) showed bladder tamponade and strengthened suspicion of urothelial carcinoma. After initial stabilization with 2.5 l of Ringer's solution and rapid transfusion of 1.5 units of packed red blood cells (PRBCs), the patient became responsive with a hemoglobin of 3.0 g/dl. She denied dyspnea or angina. Urological consultation recommended cystoscopy the following day and advised against bladder catheterization. Transfusion continued slowly under intensive care monitoring. By the time of surgery, she had received 3 PRBCs total, with a pre-operative hemoglobin of 4.7 g/dl. The procedure was uncomplicated. Throughout her hospital stay, the patient remained stable without signs of cardiac ischemia or decompensation. A total of 11 PRBCs were transfused over 15 days. At discharge, her hemoglobin was 8.1 g/dl. She was later able to undergo urological cancer treatment.

Discussion: Extreme anemia, defined as hemoglobin below 2 g/dL, is rare in industrialized countries due to advanced healthcare systems. Published cases primarily attribute chronic extreme anemia to malnutrition and bleeding malignancies. The human body's compensatory mechanisms for chronic oxygen deprivation are multifaceted and not yet fully understood. They include increased ventilation and cardiac output, activation of

hypoxia-inducible factors (HIFs), and promotion of angiogenesis. In absence of clear guidelines, transfusion strategies should be tailored to the patient's clinical condition. Future research into alternative therapies, such as hypoxia-inducible factor stabilizers or synthetic oxygen carriers, may provide additional options for such complex cases.

Table 1: Laboratory values on admission

Parameter	Arterial Blood Gas Analysis (ABGA)
pH	7,26
Base Excess [mmol/l]	-17,3
Lactate [mmol/l]	12
Creatinine [mmol/l]	170
Hemoglobin [g/dl]	1,5
pCO2 [kPa]	2,8
pO2 [kPa]	5,1
HCO3 [mmol/l]	9

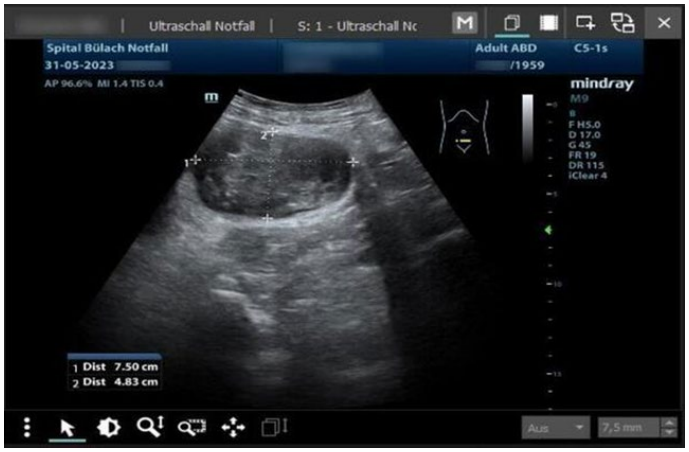

Image 1: Transversal ultrasound image of the bladder.

P27

Characteristics of hospitalizations with respiratory syncytial virus (RSV) in Switzerland: Data from the Federal Statistical Office

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Introduction: Respiratory syncytial virus (RSV) is an RNA virus causing respiratory tract infections, ranging from mild colds to severe conditions like bronchiolitis and pneumonia. Globally, RSV accounts for 33 million lower respiratory tract infections and 59'600 deaths annually in children under 5. In Switzerland, RSV surveillance mainly targets young children, but studies suggest that the burden in adults is underreported, potentially due to insufficient data and diagnostic challenges. RSV is increasingly recognized as a cause of acute respiratory illness in multimorbid adults. The aim of this study was to assess RSV-related hospitalizations across age groups in Switzerland and to investigate outcomes in both children and adults.

Methods: This retrospective cohort study assessed RSV (primary or secondary diagnosis) hospitalization statistics from the Swiss Federal Statistical Office between 2017 and 2022. Outcomes included number of hospitalizations, length of hospital stay, and in-hospital mortality, stratified by age group. Data were presented as absolute and relative numbers.

Results: Over 30'000 RSV-related hospitalizations occurred in Switzerland between 2017 and 2022. The highest number of hospitalizations per 100'000 inhabitants was observed in children under 10 years (2'696/100'000), followed by adults aged 80 years and older (762/100'000). In-hospital mortality was <0.1% in children and young adults but increased with age, reaching 6% in those over 60 years of age. Similarly, the average length of stay increased from 4.7 days in children, up to 11.6 days in patients aged 60 and older. RSV was predominantly recorded as the primary diagnosis in children under 10 years (82%). In adults, it was commonly documented as a secondary diagnosis, with chronic diseases being the primary condition.

Conclusion: RSV-related hospitalizations, complications, and mortality vary significantly across age groups, with the youngest and oldest populations being most affected. While children have the highest incidence, older adults, particularly those with chronic comorbidities, face higher mortality and longer hospital stays. These findings emphasize the need for targeted prevention and vaccination strategies, especially in vulnerable age groups.

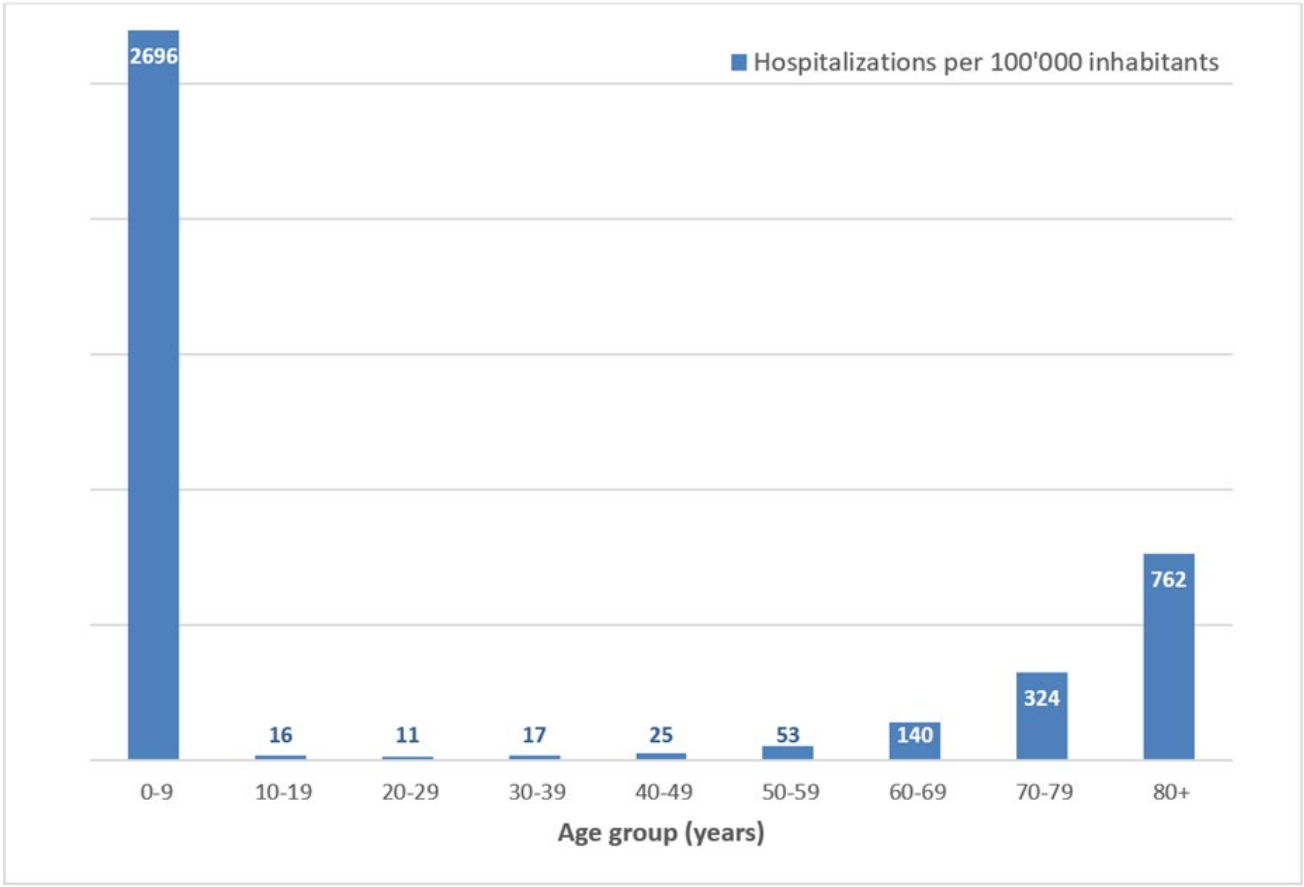

Figure 1: RSV-related hospitalizations per 100’000 inhabitants in Switzerland (2017-2022).

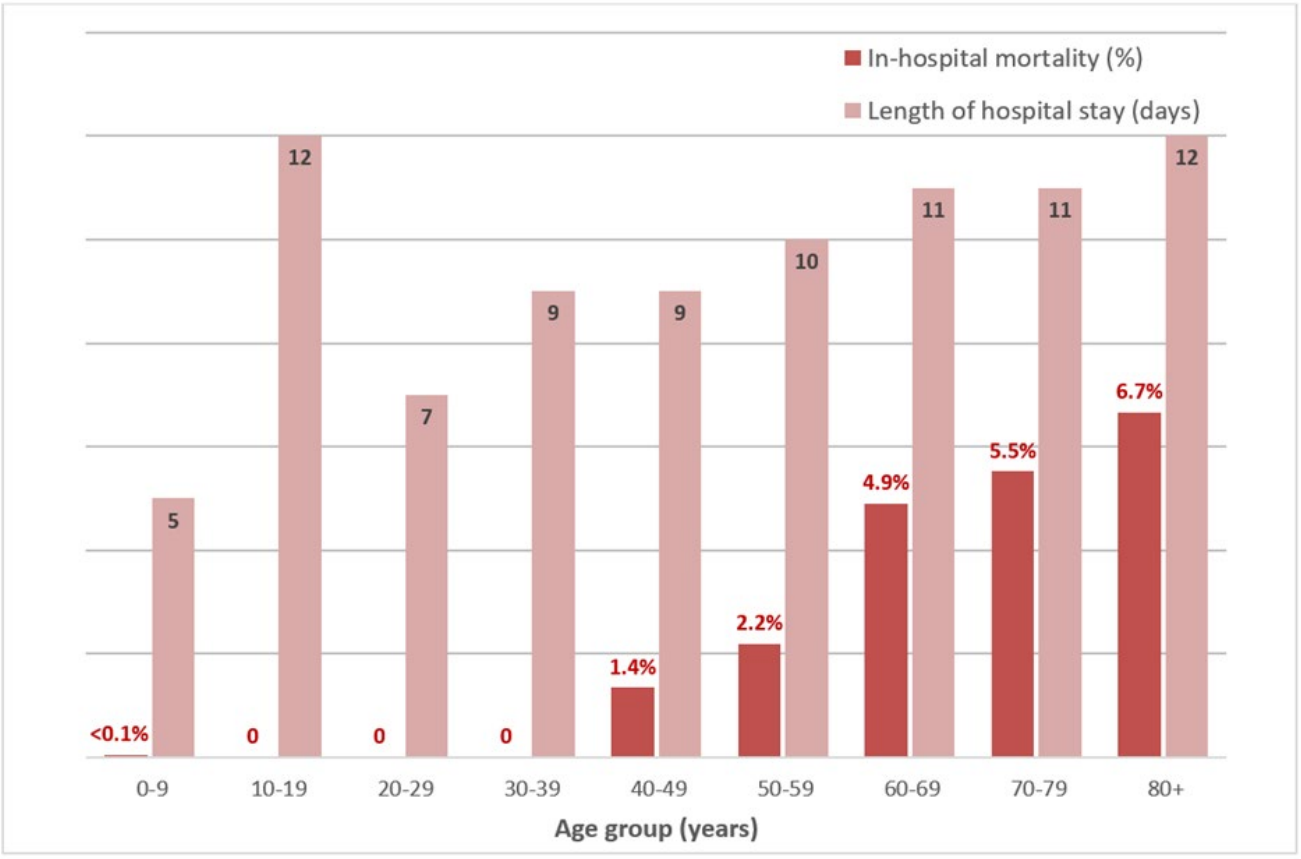

Figure 2: In-hospital mortality and length of hospital stay in RSV-related hospitalizations in Switzerland (2017-2022).

P28

Checklist-guided Code Status Discussions in Patients for Whom Cardiopulmonary Resuscitation is Considered Futile - An Ancillary Project of the CLEAR Checklist Trial

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Introduction: Code status discussions represent a fundamental aspect of advanced care planning. We investigated the effects of a structured approach to code status discussions on code status decisions and different quality of care measures among patients for whom resuscitation measures are considered futile.

Methods: In this ancillary analysis of a cluster-randomized controlled trial across six Swiss teaching hospitals, 177 admitted patients for whom resuscitation measures were considered futile based on a prearrest Good Outcome Following Attempted Resuscitation score ≥14 or a Clinical Frailty Scale ≥7 were randomized to checklist-guided discussions or usual care. Outcomes included patients' code status decisions, preference for mechanical ventilation and intensive care unit admission, patients' psychological burden after the code status discussion assessed by the State-Trait Anxiety Inventory and the Hospital Anxiety and Depression scale, and physicians' perception regarding the discussions.

Results: There was no significant difference in code status decisions (rate of "do-not- resuscitate", checklist group 89% vs usual care group 82%, p = 0.19). However, patients in the checklist group were less likely to prefer ICU admission compared to usual care (31/89 [36%] vs 44/88 [52%], OR 0.53; 95%CI 0.29 to 0.99, p <0.046). Physicians perceived code status discussions using the checklist less challenging (3.5±2.8 vs 4.7±2.8, difference -1.23; 95%CI -2.1 to -0.35, p <0.006). Patients` psychological reaction to code discussions did not significantly differ between groups.

Conclusion: Checklist-guided discussions in patients for whom cardiopulmonary resuscitation is considered futile reduced their preference for ICU admission while alleviating physicians' challenges during code status discussions without adversely affecting patients' psychosocial burden.

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Choledochocele with Elevated Cholestasis Parameters – Case Report of a Patient with known Microcystic Lymphatic Malformation and Acute Abdominal Pain

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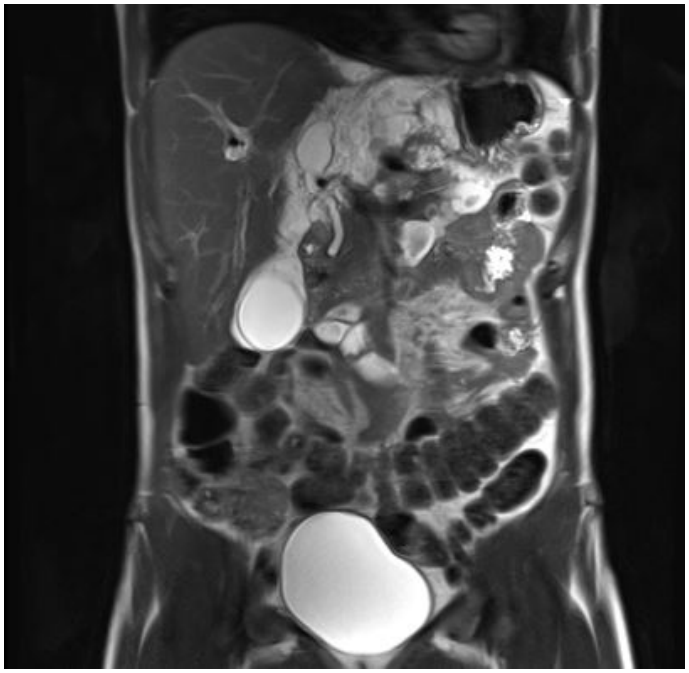
Learning objectives

- Early Intervention and Follow-up: Exacerbations of microcystic lymphatic malformations (MLM) can present with non-specific symptoms.
- Multidisciplinary Management: Acute MLM exacerbations can mimic other conditions, requiring a collaborative approach with specialists in vascular anomalies, infectious diseases, and gastroenterology.
- Management: Corticosteroids are effective for managing inflammation during exacerbations and long-term treatment with Sirolimus is crucial[1].
- Infectious Risk: MLM patients are at an increased risk of infections and should be closely monitored and treated with empirical antimicrobial therapy when necessary.

Case: A 25-year-old male with a history of MLM and recurrent epigastric pain presented with severe abdominal pain. He was treated with Sirolimus (mTOR inhibitor) abroad, leading to disease regression, but his condition worsened after stopping therapy. On examination, there was diffuse abdominal tenderness and laboratory results showed elevated inflammatory markers and cholestasis. MRCP and abdominal MRI revealed MLM progression and a choledochocele with a stone. A percutaneous US-guided biopsy confirmed MLM. The common bile duct (CBD) was not dilated, suggesting that the elevated cholestatic markers were unrelated to the choledochocele. Cell-free DNA analysis was negative for PIK3CA-related overgrowth spectrum. Pain was managed with opioids. As inflammatory markers increased, corticosteroid pulse therapy was initiated, along with empirical antibiotics, which were discontinued after five days. Despite initial improvement, CRP levels spiked when corticosteroids and antibiotics were stopped, prompting a second corticosteroid pulse. Symptoms improved within 24 hours. The patient was discharged on prophylactic antibiotics (ciprofloxacin, clindamycin) and it was planned to restart Sirolimus once inflammation subsided.

Discussion: MLMs are rare congenital anomalies causing chronic pain and functional impairment. Exacerbations are often triggered by inflammation or infections. In this case, a choledochocele was identified, but its role in this case was unclear. Instead of attributing the symptoms to choledocholithiasis from the choledochocele, MRCP and abdominal MRI were performed to assess MLM progression [2]. Corticosteroid therapy provided significant relief and prophylactic antibiotics helped address the increased infection risk. This case highlights the need for a multidisciplinary approach to managing MLM [3].



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Clinical Characteristics and Prognosis of Patients with Central Pulmonary Embolism

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Introduction: Central pulmonary embolism (cPE) refers to emboli in the pulmonary trunk or main pulmonary arteries, accounting for 24–60% of acute pulmonary embolism (PE) cases. Although cPE is traditionally regarded as more severe PE, its association with clinical outcomes remains controversial. This study aimed to compare clinical characteristics and outcomes between patients with cPE and non-cPE.

Methods: We analyzed 597 patients with acute PE from the prospective SWITCO65+ cohort. We compared baseline clinical characteristics and outcomes at 3 months (recurrent venous thromboembolism [VTE], overall and PE-related mortality, PE-related quality of life) and over the entire follow-up (recurrent VTE, overall/PE-related mortality) between patients with cPE vs. non-cPE. We examined the association between PE localization and recurrent VTE and overall mortality, adjusting for multiple confounders including thrombolysis and periods of anticoagulation, and competing risk of non-VTE-related death if appropriate.

Results: Overall, 217 (36.3%) patients had cPE. The median age of all analyzed patients was 74 years (interquartile range [IQR], 70-81 years). Symptoms/signs of respiratory distress, right-ventricular dysfunction, and myocardial injury were more prevalent in those with cPE. VTE recurrence, overall/PE-related mortality, and PE-related quality of life at 3 months did not vary by PE localization. After a median follow-up of 29.6 months, patients with cPE had a higher risk of fatal PE (5.5% vs. 2.1%; P = 0.033). After adjustment, cPE was associated with recurrent VTE (sub-hazard ratio [SHR] 2.22, 95%CI 1.25–3.91) but not with overall mortality (HR 0.74, 95%CI 0.45–1.21) during follow-up.

Conclusion: cPE was associated with a 2.2-fold increased risk of recurrent VTE compared to non-cPE. Whether an extended anticoagulation duration could reduce the recurrence risk following cPE should be further examined.

Table 1. Association between PE localization and clinical outcomes

Clinical outcomes	n events/N subjects	Adjusted SHR (95% CI)	*P*-value
Recurrent VTE*			
Non-cPE	33/380	Reference	-
cPE	30/217	2.22 (1.25-3.91)	0.006
	n events/N subjects	**Adjusted HR (95% CI)**	***P*-value**
Overall mortality†			
Non-cPE	77/380	Reference	-
cPE	34/217	0.74 (0.45-1.21)	0.228

Abbreviations: CI, confidence interval; HR, hazard ratio; SHR, sub-hazard ratio; VTE, venous thromboembolism.
*Adjusted for age, sex, cancer, history of VTE, unprovoked VTE, thrombolysis, and anticoagulation periods.
†Adjusted for age, sex, cancer, heart failure, chronic lung disease, pulse ≥110/min., systolic blood pressure <100 mmHg, respiratory rate ≥30/min., temperature <36°C, altered mental status, arterial O_2 saturation <90%, thrombolysis, and anticoagulation periods.

P31

Complementary Medicine Use and Expectations of Patients attending Oncology Clinics at Two Regional Hospitals in Switzerland

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Introduction: There is rising demand for complementary medicine (CM) approaches to be integrated to conventional medical care, particularly for patients with cancer. Once viewed as incompatible, many hospitals in Switzerland are now seeking to offer CM therapies alongside traditional oncology treatments for solid and hematological cancers. This study aims to explore the characteristics and motivations of CM users among adult patients with cancer in Switzerland to better understand their needs and expectations.

Method: A cross-sectional survey using an electronic questionnaire (also available in paper format) was distributed in October 2023 to patients who attended two oncology outpatient clinics (Fribourg and Rennaz hospitals) within the past 4 months. The quantitative survey assessed the prevalence of various CM practices, reasons for use of CM therapies, sources of information, and communication with healthcare professionals regarding CM. Descriptives statistics were performed in R.

Results: Of the 3,730 invitations sent, 553 (14.8% participation) complete responses were received. 58.2% of participants were women, mean age was 62.7 years and mean time since diagnosis was 3.4 years. 300 (54.2%) participants reported using a CM therapy at least once since the cancer diagnosis. CM users were more likely to be women, younger, with a higher level of education than non-CM users and were more likely to have a complementary health insurance. The most popular CM therapies were dietary supplements (41.7%) and therapeutic massage (36%). The symptoms most commonly motivating CM use were fatigue (69.3%), pain (46.6%) and anxiety (44.6%). The mostly common source of information about CM was social contacts (58.3%). 69.8% of participants reported disclosing their CM use to their oncologist and 63% of them were satisfied

or very satisfied with the conversation and information received when discussing the subject with their oncologist. 58% of participants were interested in having a specialist CM service in the oncology department.

Conclusions: Most patients with cancer use CM therapies at least once and are generally open to discussing it with their healthcare professionals. There is a substantial interest among patients for consultations with CM specialists as part of their oncology care. These results highlight the various symptoms motivating CM use and prompts the question of how to integrate CM therapies to current oncology management and guidelines.

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Determinants Of the achieveMent of a point-of-care UltraSonography certification in the western part of Switzerland (DOMUS): a Retrospective study and Cross-sectional Survey

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Introduction: Point-of-Care Ultrasound (POCUS) competencies require theory, hands-on courses and supervised training. In Switzerland, the requirements to be certified, established in 2018, include a minimum of 200 POCUS exams, half of them supervised by a certified tutor. Several POCUS courses are available in the Western part of Switzerland. The proportion of individuals achieving POCUS certification and the factors influencing the certification process are currently unknown.

Method: Retrospective observational study and a cross-sectional survey. Demographics of study participants were obtained from the registries of the three main Western Switzerland POCUS schools. Data on medical diploma, specialization and POCUS certification were obtained from the federal registry of medical professions. Data on supervisor/tutor/course leader titles were obtained from the Swiss Society of Ultrasonography in Medicine. Additionally, a web-based survey was distributed to all participants to assess the perceived barriers to obtaining POCUS certification.

Results: A total of 1429 doctors who attended POCUS courses between January 2015 and December 2023 were included in the primary analysis database and were invited to the survey; 529 (37%) responded. The number of courses attendees slightly increased from the first third (2015-2017) to the second third (2018-2020) of the study period (208 to 275, 32% increase). A 304% increase was observed from the second to the last third (2021-2023), reaching 1112 participants. In total, 80 (5.6%) of courses attendees were certified in December 2023. Factors associated with certification were male sex at birth (aOR of 2.4, 95%CI 1.4 to 4.0), emergency specialization (aOR of 3.4, 95%CI 1.8 to 6.4) and working in a tertiary care center (aOR 4.8, 95%CI 1.1 to 21.5). The most frequent perceived obstacles were lack of dedicated time (73%), unavailability of trainers (63%), lack of structured training (57%) and absence of certified trainers (51%).

Conclusion: The present study highlights the steep growth in demand for POCUS courses, particularly from 2021 onwards. While the number of attendees has dramatically increased, there is a markedly low certification rate and a perceived lack of certified supervisors. Efforts should be made to strengthen and organize supervision with the goal of POCUS certification for all participants, particularly those in need of this certification as an integral part of their formal post-graduate requirements.

P33

Diagnostic and Prognostic Performance of IGFBP7 in patients with Acute Dyspnea in the Emergency Department

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Introduction: Acute Heart Failure (AHF) is a frequent reason for emergency department (ED) visits that require hospitalization. Despite progress in chronic heart failure therapy, AHF patients, especially the elderly, have substantial morbidity and mortality rates. High IGFBP7 levels cause collagen accumulation, which result in myocardial fibrosis and cardiac dysfunction. IGFBP7 was connected to disease progression and worse outcomes. The aim was to determine if IGFBP7 levels in ED patients with acute dyspnea could contribute to the diagnosis and risk evaluation of AHF.

Methods: Patients presenting with acute dyspnea were enrolled in a prospective multicentre diagnostic study. IGFBP7 concentrations were measured in a blinded fashion. The final diagnosis was centrally adjudicated using all the individual patient information including cardiac imaging. Prognostic endpoints included all-cause mortality within 720 days and the combined outcome of all-cause mortality and AHF rehospitalizations.

Results: AHF was adjudicated in 52% of 966 patients. IGFBP7 levels were higher in AHF patients (150 [117.2-195.2] ng/mL vs. 91.3 [75.5-114.2] ng/mL, p <0.001). Patients in the highest IGFBP7 quartile were older, male, and more likely to have coronary artery disease, chronic heart failure, atrial fibrillation, and chronic renal disease. Participants had the lowest left ventricular ejection fraction (LVEF) and lowest estimated glomerular filtration rate (eGFR) before trial entry. The AUC of IGFBP7 was 0.85 (95% CI: 0.82 to 0.87), NT-proBNP was 0.92 (95% CI: 0.90 to 0.93), and hs-cTnT was 0.79 (p <0.001). Adding IGFBP7 to NT-proBNP increased the AUC to 0.93 (95% CI: 0.91 to 0.94). Patients with IGFBP7 plasma values above the median had a significantly greater mortality risk. AHF rehospitalization and all-cause death at 720 days were associated with IGFBP7 levels above the median.

Conclusion: IGFBP7 enhances the diagnostic and prognostic capabilities of NT-pro-BNP in patients presenting with acute dyspnea to the ED.

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Does Checklist-guided Shared Decision Making have a sustained effect on Code Status decisions among Medical Inpatients? Long-term follow up of the randomized CLEAR Checklist trial

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Introduction: In the previous CLEAR trial, use of a checklist to guide shared decision-making for code status discussions resulted in an improved quality of care by reducing patients' uncertainty and increasing satisfaction and knowledge. Also, a higher rate of "do not resuscitate" (DNR) code status preference was observed. However, it remains unclear whether these effects persist over long-term.

Methods: In this long-term follow-up study of the randomized-controlled CLEAR trial which compared code status discussions guided by a shared decision-making checklist (intervention group) to usual care discussion (control group), we evaluated the documented code status (primary endpoint) and several secondary endpoints including patients' knowledge about resuscitation measures and satisfaction with code status discussions after a mean follow-up time 3.2 (SD ±0.9) years.

Results: A total of 1,340 patients were included for the follow-up. Patients in the intervention group had a significantly higher rate of documented DNR status at follow-up compared to patients in the usual care group (251 [36.1%] vs 191 [29.8%]; adjusted risk ratio 1.23, 95% CI 1.04 to 1.45, p = 0.02). There were no significant differences in knowledge about resuscitation measures or satisfaction with code status discussions between groups.

Conclusions: Results of this follow-up study indicate that several years after a shared decision-making code status discussion, patients recalled little specific knowledge about resuscitation measures and their prognostic outcomes. However, the intervention group maintained a higher documented preference for DNR. These results highlight the need for repeated discussions, including prognosis and expected outcomes to support informed and consistent decision-making in this patient population.

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Effect of SGLT2-inhibitors on iron biomarkers in the context of inflammation

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Introduction: Sodium-glucose linked transporter 2 (SGLT2) inhibitors stimulate erythropoietin, resulting in increased iron utilisation. As a result, patients often have biomarkers indicating iron deficiency [1,2]. We aimed to investigate the association between SGLT2-inhibitors and iron biomarkers in anemic patients with inflammation.

Methods: This retrospective cross-sectional study included patients with anemia (WHO definition) and inflammation hospitalized between 01/01/2020 and 31/12/2023. We performed bivariate analyses using one-way ANOVA on log-transformed and original values of sTFR and ferritin-index, both markers of iron stores in the presence of inflammation [3]. Three-way ANOVA models assessed the effect of SGLT2-inhibitors on these biomarkers, adjusting for congestive heart failure (CHF) and diabetes mellitus (DM). Box-plots were used for illustration.

Results: Of the 439 participants, 12.5% (n = 55) were taking SGLT2-inhibitors. One-way ANOVA showed higher log-transformed sTfR values in SGLT2-inhibitor users (mean difference 0.20, 95% CI 0.02 to 0.38; p = 0.028). However, when CHF and DM were controlled for in the three-way ANOVA , the association disappeared (0.06, 95% CI -0.13 to 0.26, p = 0.517). Similar patterns were observed for sTfR and ferritin-index. Furthermore, all models explained only a small proportion of variance in iron biomarkers (<4%).

Conclusion: Our bivariate analysis showed an association between SGLT2-inhibitors and iron biomarkers in the presence of inflammation. However, this association disappeared when the model was controlled for CHF and DM. The apparent association may be attributable to factors other than SGLT2-inhibitors. This question should be further investigated in prospective studies in patients with inflammation.

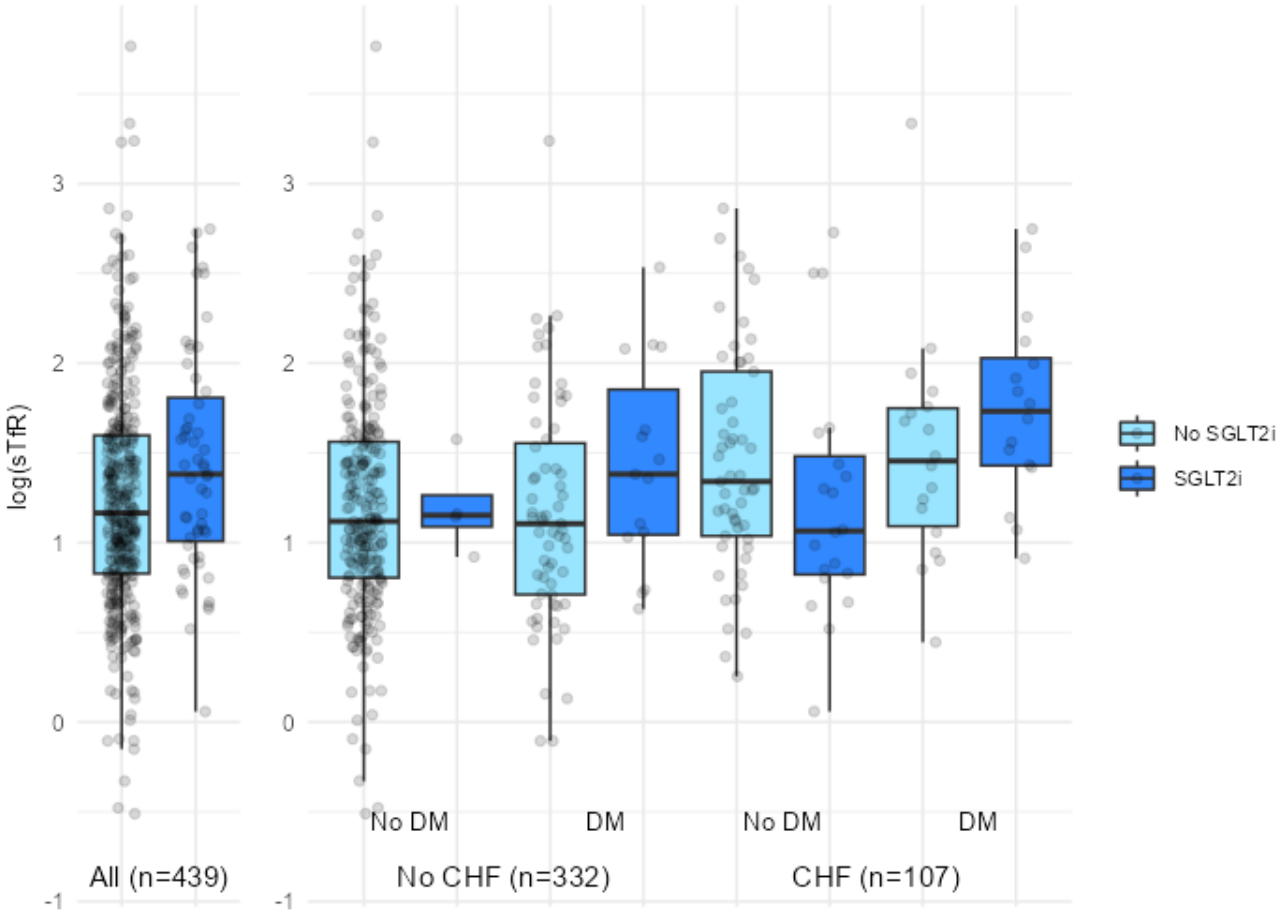

Figure 1: Boxplot of log(sTFR) of the whole sample depending on SGLT2-inhibitor use (left) and boxplots depending on SGLT2-inhibitor use stratified for underlying diseases congestive heart failure and diabetes mellitus.

SGLT2i = SGLT2-inhibitors, DM = diabetes mellitus, CHF = congestive heart failure, sTfR = soluble transferrin receptor

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Emergency Medicine and Sustainability: Optimizing a Care Process Through Life Cycle Analysis

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Introduction: Healthcare systems are significant contributors to greenhouse gas emissions on a national scale, with hospitals playing a major[HS1] role. Emergency departments, due to their high patient flow and extensive use of diagnostic tests, contribute substantially to these emissions. This study aims to perform a life cycle assessment (LCA) of a common pathology treated in emergency settings and to optimize the management protocol to reduce its carbon footprint while maintaining care standards.

Materials and methods: Limb injuries are by far the most common reason for consultations in our outpatient emergency unit (approximately 15% of 44'000 entries), with knee injuries being particularly frequent. These cases often require additional diagnostic tests (e.g., standard X-rays, MRIs), making them an ideal candidate for analysis. The environmental assessment employed the LCA methodology, which evaluates not only the direct impact of diagnostic tests, particularly imaging, but also consumables, facilities, and potential waste. Stepwise interventions were implemented to reduce the use of standard X-rays outside the Ottawa criteria (e.g., staff training, computerized alerts). The impact of these measures was assessed over a 2-month period in a pre-port intervention design, and a final LCA was conducted to estimate emission reductions.

Results: The average LCA for managing a knee injury in the emergency department showed emissions of approximately 11.5 kg CO2 equivalent (CO2 eq). The largest contributor was patient transportation (45[HS2] %), followed by consumables (18%), medications (14%) and staff transportation (13%). Standard X-rays accounted for 3.5% of total emissions. A threefold difference was observed between the minimum (8.1 kg CO2 eq) and maximum (22.1 kg CO2 eq) scenarios. Training et situation reminders of applying the Ottawa criteria reduced unnecessary X-rays from 26% to 4% of total radiological exams. Other interventions, like the introduction of TripCast score to reduce prophylactic anticoagulation, are ongoing.

Conclusion: Using LCA as an objective measure of an emergency care process allows for the identification of its various contributors and enables the adjustment of protocols based on sustainability criteria. Among the interventions, the implementation of computerized alerts to reinforce the Ottawa criteria significantly reduced unnecessary standard X-rays, demonstrating the potential for sustainable improvements in emergency care practices.

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Evaluation of the association between clinical events and apixaban/rivaroxaban's plasma exposure in patients from the OptimAT study

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Introduction: There is mounting evidence that direct oral anticoagulants' (DOAC) exposure is linked to clinical events, particularly bleeding events, which are more frequently seen in patients with higher DOAC plasma concentrations. However, data from real-life setting are sparse. We present here data on the 2-year clinical follow-up of patients from the OptimAT study (NCT03477331).

Methods: The OptimAT study was primarily designed to validate pharmacokinetic modeling of DOAC concentration in hospitalized patient. As part of secondary endpoints, clinical events along with DOAC treatment changes were monitored every 6 months over a 2-year follow-up. Clinical event-free survival was analyzed according to apixaban and rivaroxaban's plasma levels categorized as follows: 25-75th percentiles vs <25th and >75th percentiles. Clinical events were defined as a composite outcome including major and clinically relevant minor bleeding according to ISTH definition and thrombotic events including major adverse cardiovascular events and thrombo-cardio-embolic events. COX regression analyses were performed to assess the hazard ratios associated with extreme percentiles of DOACs' exposure and clinical events. Hazard ratios were adjusted for the HAS-BLED score.

Results: Clinical and demographic characteristics of the population (n = 200) are described in table 1. Major bleeding and thrombotic events were low but comparable to frequencies observed in landmark trials. No significant association between extreme percentiles of DOACs' plasma concentrations and clinical events was observed (Figure 1). With respect to the sample size and the assumed survivals under the alternate hypothesis, the study had only a power of 28% to identify a significant difference in clinical outcomes between extreme percentile patients. This power was also impaired by a high rate of DOAC treatment changes, which occurred in 53% and 41% of patients treated with rivaroxaban and apixaban, respectively.

Conclusions: Monitoring of clinical events within the frame of a PK study on antithrombotics provides useful descriptive data on the incidence of these events, comparable to those observed previously. It also showed a high rate of DOACs modifications in real-life which, combined with the sample size of such studies, hampers the power to detect a relevant risk associated with extreme drug exposure. Negative results deserve however to be communicated and pooled in meta-analyses.

Characteristics	Apixaban (n=100)	Rivaroxaban (n=100)
Age (years) (median, IQR)	77 (71-83)	74 (66-81)
Female (%)	42	36
Ethnicity (%)	Caucasian (97), African (1), Hispanic (1), Asian (1)	Caucasian (97), African (1), Hispanic (1), Asian (1)
Weight (median, IQR)	74.7 (60.3-89.2)	80.6 (70.0-91.8)
Height (median, IQR)	170 (163-175)	173 (166 – 180)
Creatinine Clearance* (ml/min) (median, IQR)	56.5 (46.5-71.7)	72.3 (55.4-96.6)
Reason for admission	Acute decompensated heart failure (35), Acute respiratory decompensation (6), Acute infection (12), Acute coronary syndrome (10), Ischemic stroke (2), VTE (4), Decline in physical function (2), Loss of Consciousness (1), Hemorrhage (1), Others (27)	Acute decompensated heart failure (25), Acute respiratory decompensation (7), Acute infection (18), Acute coronary syndrome (6), Ischemic stroke (1), VTE (19), Decline in physical function (1), Loss of Consciousness (1), Others (22)
Drug indication (%)	AF (89), VTE (11)	AF (64), VTE (36)
Dosage (%)	5mg bid (56) 2.5mg bid (40) 10mg bid (4)	10mg od (4), 15mg od (14), 20mg od (59), 15mg bid (23)
Reason of end of follow-up		
Death	14	4
Treatment modification	31 (planned for 3)	40 (planned for 17)
Treatment stop	10 (planned for 4)	13 (planned for 6)
End of study	31	28
Withdrawal	1	1
Clinical events		
Min/maj bleeding	8/1	10/0
Thrombotic/ischemic	1/3	1/3

Table 1. Clinical and demographic characteristics of the population

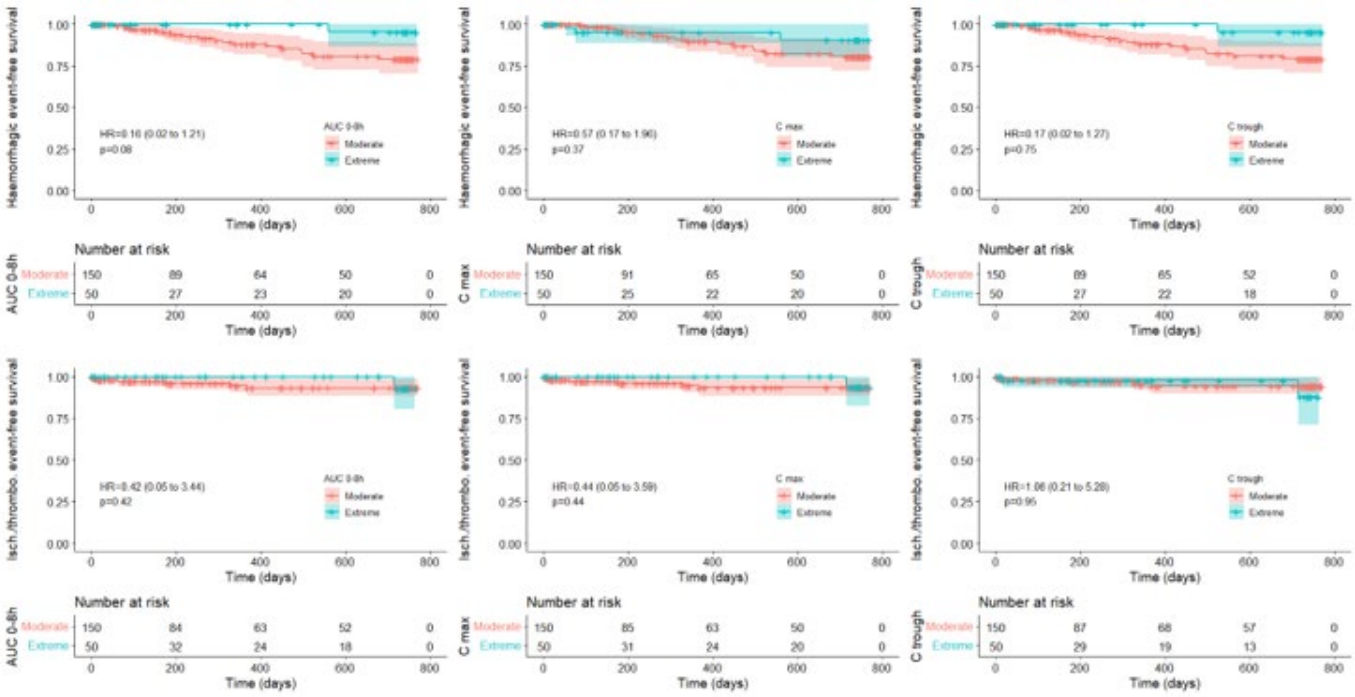

Figure 1. Reported hazard ratios (HR)s are adjusted for Has BLED score.

P38

Evolution of Ultrasound by Internists: POCUS (Point of Care Ultrasound), abdominal ultrasound and CEUS (Contrast enhanced ultrasound)- Implementation of a CEUS group-

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Introduction: Since 2022, POCUS has been part of the internal medicine curriculum, focusing on specific, clinically relevant questions. However, as POCUS was implemented in our clinic, the objectives were surpassed by questions raised by the usage of POCUS. Incidental findings led to an increase in multi-question POCUS and general abdominal ultrasounds, eventually resulting in the creation of a CEUS group. A retrospective analysis of the CEUS examinations was performed to suggest meaningful questioning regarding the implementation of a CEUS group.

Methods: A retrospective analysis was conducted on CEUS examinations performed between April 2023 and December 2024. Patient data, organ systems and findings of the CEUS examinations were reviewed, focusing on the objectives of CEUS and whether the clinical question was answered. The analysis was carried out independently by two experienced internal medicine physicians, with a third physician consulted in case of disagreement. A total of 74 ultrasound examinations were performed, of which 9 were excluded due to withdrawal of general consent.

Results: We examined 35 men and 30 women, with an average age of 62 (±17) and 56 years (±19), respectively. The liver was examined in 42.6% of cases (29), the kidney in 38.2% (26) and other organs in 17.6% (12), (with 3 cases involving two organs). In 63.1 % of cases (41) an ultrasound in the remaining cases other imaging modalities led to the decision to perform CEUS examination. Notably, 29 cases focused on incidental findings in liver (26 in non-cirrhotic and 3 in cirrhotic liver) followed by 26 cases of kidney lesions, mostly mildly complex cysts. In 39.7 % (27), the clinical question was adequately answered by CEUS, and no further follow-up was needed. In 32.4 % (22), ultrasound follow-up was required. Thus, 72.1 % (49) could be managed with ultrasound. The remaining cases needed further additional imaging modalities and/or remained unclear.

Conclusion: Our experience with CEUS on the ward indicates that incidental findings in structurally healthy liver and mildly complex kidney cysts or pseudo-tumors are ideal objectives for initiating a CEUS group. Most of these incidental findings could be conclusively evaluated using CEUS without the need for further imaging techniques.

P39

External Validation and Performance of the GO-FAR Score and Clinical Frailty Scale to predict long-term, all-cause mortality in medical inpatients

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Introduction: In an aging and increasingly complex patient population, risk prediction tools are critical for optimizing clinical decision-making. The Clinical Frailty Scale (CFS) evaluates frailty and mortality risk. The Good Outcome Following Attempted Resuscitation (GO-FAR) score is a pre-arrest score to predict survival after in-hospital cardiac arrest. This study assessed their prognostic accuracy in predicting long-term all-cause mortality among medical inpatients.

Methods: This ancillary analysis of the CLEAR trial included medical inpatients from six Swiss teaching hospitals. At admission, the CFS, GO-FAR score and Charlson Comorbidity Index (CCI) were recorded. Long-term follow up of vital status occurred between June and October 2024. The primary endpoint was long-term all-cause mortality.

Results: Among 2840 patients, 26% died during a mean follow-up of 3.3 years (SD 0.91 years). The GO-FAR score and CFS showed good discriminatory performance for all-cause mortality with areas under the receiver operating characteristics curve (AUROC) of 0.74 and 0.72, respectively. Combining both scores with the CCI, improved the AUROC to 0.79 (Figure 1). Both scores showed high specificity (GO-FAR: 98.4%; CFS: 99.2%), but low sensitivity (GO-FAR: 10.3%; CFS: 12.2%). Patients in the highest risk categories had significantly increased all-cause mortality risk, adjusted OR 17.72 (95% CI 10.5 to 29.91, p <0.001) for GO-FAR score and OR 19.81 (95% CI 11.27 to 34.83, p <0.001) for CFS.

Conclusion: The GO-FAR Score and CFS effectively predict long-term all-cause mortality, particularly when combined with the CCI. These tools may help clinical decision-making, resource allocation and advanced care planning in aging, multimorbid patient-populations.

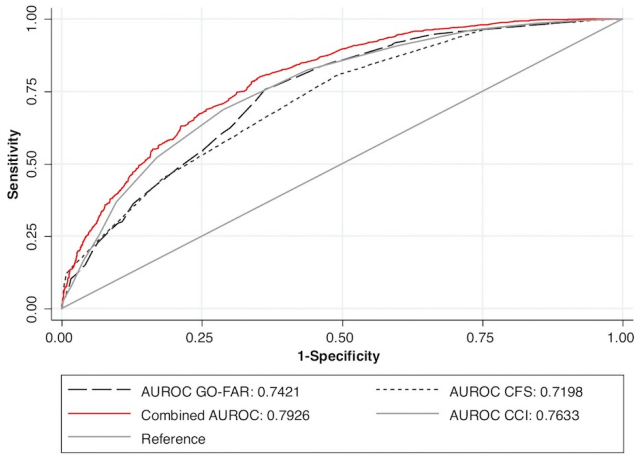

Figure 1. Comparison of ROC curves of the GO-FAR, CFS, CCI and combined AUROC of all scores. Abbreviations: AUROC Area under the receiver operating characteristic curve; CFS Clinical Frailty Scale; CCI Charlson Comorbidity Index; GO-FAR GO-FAR (Good Outcome Following Attempted Resuscitation) Score.

P40

Fisherman's Friends: „Sind sie zu stark, bist du zu schwach."A case report

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Learning objective: Scrutinizing information obtained from a patient's history, especially after apparative diagnostics and treatment are initiated, tends to be neglected in clinical practice.

Case: A 74 year old patient was admitted to the emergency department because of progressive bilateral thigh pain and muscular weakness. Physical examination showed bilaterally reduced muscular strength in both legs (3/5) with preserved deep tendon reflexes and hypertensive blood pressure measurements (>200/100mmHG). Blood samples revealed reduced potassium levels (1.8 mmol/L) and metabolic alkalosis (ph 7,51, bicarbonate 28 mmol/L) by electrocardiographic evidence of premature atrial beats, depressed ST-segments in leads V2-V6 and merging T-U-waves in leads V2-V3. After immediate potassium repletion, further investigation showed renal potassium-wasting (trans-tubular potassium gradient/TTKG >14), nondetectable Renin (<0.5 mU/L) and normal Aldosterone (30.4 pmol/L) by preserved early morning Cortisol levels including adequate response to the low-dose Dexamethasone suppression test. Abdominal sonography did not demonstrate adrenal gland enlargement or renal artery stenosis. Rechallenging the initial diagnosis of primary hyperaldosteronism, taking into account the normal Aldosterone levels, the patient's history was reviewed focussing on the constant intake of potentially interfering food and drugs. Interestingly, the patient reported an increased consumption of about two to three packs (50-75g) per week of "Fisherman's Friends Eucalyptus taste", a licorice containing lozenge, in the last two weeks before admission. Potassium-stabilizing therapy was stopped and the patient was instructed to no longer consume any kind of licorice-flavored tablets or chewing gums.

Discussion: Apparent mineralocorticoid excess syndrome is based on the impaired conversion of Cortisol to Cortison by the 11-beta-hydroxysteroiddehydrogenase (11-ß-HSD) enzyme, which normally impedes corticosteroid-mediated activation of renal mineralocorticoid receptors despite an approximately 100-fold higher concentration of Cortisol over Aldosterone. Licorice contains glycyrrhetinic acid, a steroid which competitively inhibits 11-ß-HSD-2-isoform by an intake of about 100mg per day (found in 60-70g or two packs of Fisherman's Friends). Rechallenging a preliminary diagnostic hypothesis by asking more detailed questions sometimes obviates further unnecessary investigation and also potentially harmful treatment.

P41

Impact of Care Reorganization during COVID-19 Waves on non-COVID Inpatients in a Swiss Hospital: a retrospective cohort study

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Introduction: The COVID-19 pandemic required healthcare systems to reorganize around COVID-19 patient surges. The effects of this reorganization on non-COVID patients' outcomes remain unclear. This retrospective cohort study aims to quantify the effects of successive COVID waves on mortality, length of stay and transfer to intermediate and intensive care units among non-COVID patients by comparing COVID and non-COVID periods.

Methods: Data from inpatients hospitalized at the Geneva University Hospital from January 1, 2019, to March 1, 2023, whose primary discharge diagnosis was non-COVID, excluding patients from psychiatry and women-mother-child departments were extracted from the electronic health records. Analysis of the impact of the COVID periods on in-hospital mortality, transfer rates to intermediate and intensive care units, and length of stay were then performed with adjustments on gender, age, insurance class, level of care, department, and main diagnosis.

Key results: A total of 22,972 non-COVID patients over three COVID waves were included and compared to 51,252 pre-COVID patients, 46,753 patients in the inter-wave period, and 39,844 post-COVID patients. Compared to pre-COVID period, in-hospital mortality of non-COVID patients rose significantly during all COVID waves, peaking in the first wave (OR 1.25, 95% CI [1.05, 1.49]), and decreased during inter-wave periods (OR 0.91, 95% CI [0.85, 0.97]). Transfers to intermediate care units increased throughout the COVID period and normalized post-COVID, whereas intensive care unit transfers decreased significantly from the second wave onward. When compared to pre-COVID, length of stay did not differ during the first wave and was shorter in other periods.

Conclusions: Worsened outcomes for non-COVID patients during COVID waves highlight the need for protocols ensuring quality of care during future epidemics.

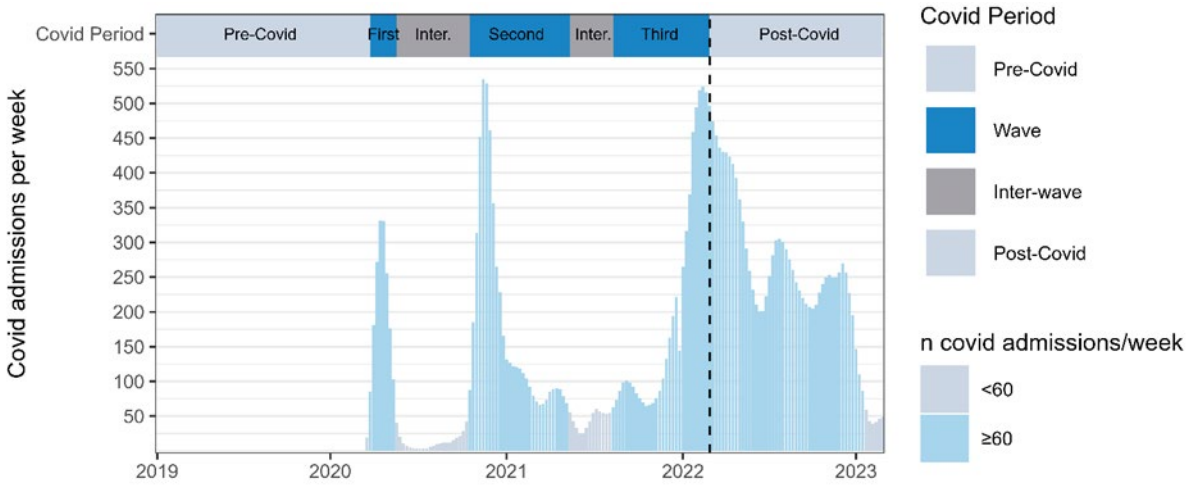

Figure 1 Covid Wave determination

Table 1 Multivariable linear regression on in-hospital mortality rate and intermediate and intensive care transfers' rate and hospital length of stay.

	In-hospital mortality			**Intermediate care transfers**		
COVID period	Odd ratio	CI95	P-value	Odd ratio	CI95	P-value
Pre-COVID	ref	ref	ref	ref	ref	ref
Wave 1	1.25	[1.05, 1.49]	0.011	1.44	[1.30, 1.60]	<0.001
Wave 2	1.20	[1.08, 1.33]	<0.001	1.17	[1.10, 1.25]	<0.001
Wave 3	1.12	[1.00, 1.24]	0.045	1.09	[1.02, 1.16]	0.007
Inter-Wave	0.91	[0.85, 0.97]	0.007	1.12	[1.07, 1.16]	<0.001
Post-COVID	0.99	[0.93, 1.07]	0.867	1.01	[0.97, 1.05]	0.753
	Intensive care transfers			**Length of stay**		
COVID period	Odd ratio	CI95	P-value	Odd ratio	CI95	P-value
Pre-Covid	ref	ref	ref	ref	ref	ref
Wave 1	0.96	[0.81, 1.14]	0.620	1.03	[0.98, 1.09]	0.263
Wave 2	0.81	[0.73, 0.90]	<0.001	0.95	[0.92, 0.98]	0.002
Wave 3	0.70	[0.63, 0.79]	<0.001	0.97	[0.94, 1.00]	0.033
Inter-Wave	0.77	[0.72, 0.81]	<0.001	0.95	[0.93, 0.96]	<0.001
Post-Covid	0.74	[0.69, 0.79]	<0.001	0.94	[0.92, 0.96]	<0.001

P42

Impact of sex in acute decompensated heart failure

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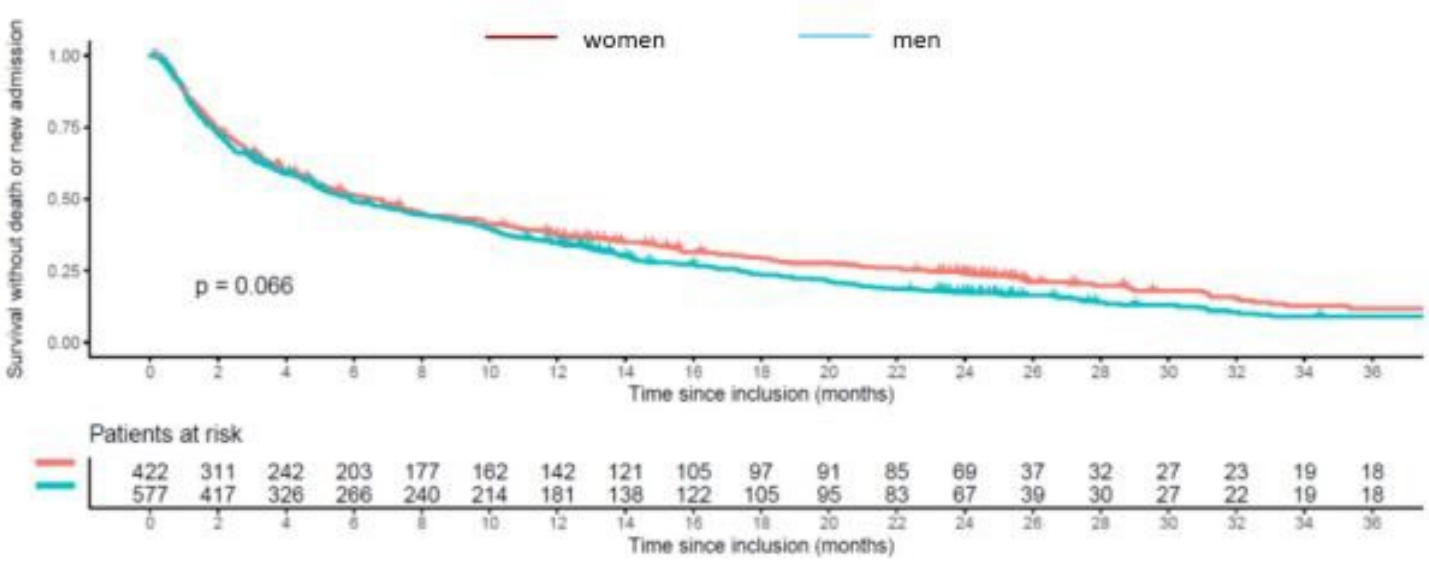
Introduction: The prevalence of heart failure is increasing in all demographic groups. The influence of sex on clinical outcomes of ischemic heart disease has been extensively described; however its impact on the diagnosis, management and clinical outcomes following acute decompensated heart failure (ADHF) has been poorly explored.

Methods: The impact of sex on baseline characteristics and clinical outcomes was explored in a prospective cohort of consecutive patients hospitalized for ADHF at the University Hospitals of Geneva. The primary outcome composed of all cause mortality and rehospitalization at follow up was measured in all patients.

Results: Of 999 patients included, 421 (42%) were women and the mean follow-up period was 28 months. Overall demographic characteristics, baseline treatment and survival without death or readmission were similar between men and women. Women were on average older (79 years vs 74), more likely to have heart failure with preserved ejection fraction (HFpEF), and significantly more likely to be hospitalized with de novo heart failure. Women presented less diabetes, clinical obesity, chronic obstructive lung disease and coronary heart disease. Women were more likely to have hypertensive heart failure (HF) and less likely to have ischemic HF. There was no sex-associated difference in all cause mortality and rehospitalization rates.

Conclusions: Women presenting with ADHF tend to be older and have a higher prevalence of HFpEF. They are also more likely to present with de novo heart failure. Fewer women had comorbidities associated with all-cause mortality and morbidity. Despite this, clinical prognosis is however poor and similar to that in men. In light of evolving management of HF, specificities in women warrant further exploration, in particular the higher prevalence of HFpEF, and the differences in aetiologies.



P43

In Hospital Detection of Elevated Blood Pressure (INDEBP) – Interim analysis of prospective cohort: Impact of Adaption of Antihypertensives during Hospitalization on Blood Pressure

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Introduction: Elevated blood pressure (BP) measurements (BPM) are common in hospitalized patients, but the need for treatment adjustments in the acute hospital setting is unclear. This study assesses the impact of in-hospital antihypertensive treatment changes on post-discharge ambulatory BPM (ABPM).

Methods: This prospective cohort study enrolled medical inpatients with ≥2 BPM ≥140/90 mmHg, averaged as hospital BP. Exclusion criteria included symptomatic hypertension, BP >180/110 mmHg, hospitalization for acute cardiovascular conditions, and lack of consent. Standardized BPM was the mean of the 2nd/3rd BPM after 5 minutes of seated rest. Antihypertensive treatment changes during hospitalization were at the physicians' discretion. All patients underwent 24-hour ABPM 4 weeks post-discharge. Hypertension on ABPM was defined as a 24-hour mean BP ≥130 or 80 mmHg, with awake/asleep cut-offs of ≥135/85 mmHg and ≥120/70 mmHg, respectively. Statistical analyses included Wilcoxon signed-rank, Kruskal-Wallis and chi-square tests.

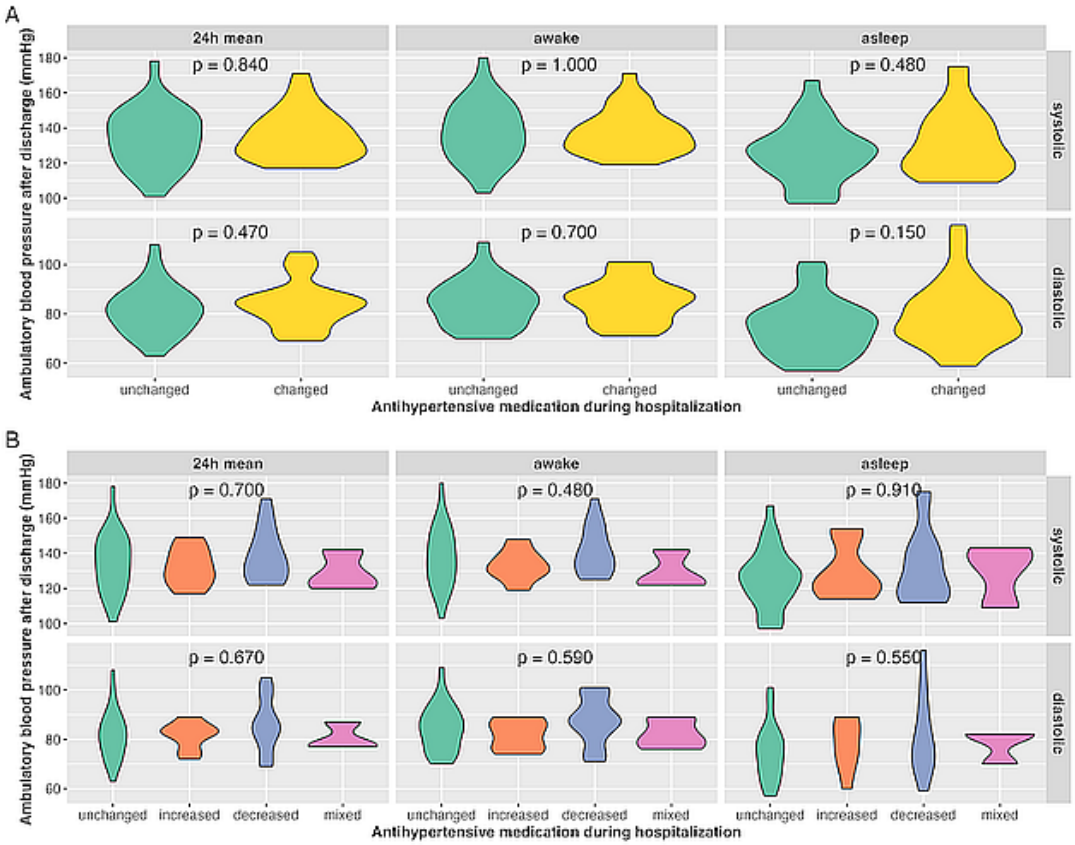
Results: Of 488 screened patients, 89 were included. 52 patients completed an ABPM. Median age was 71 years. Antihypertensives were altered in 25 patients (48%): 6/25 (24%) started a new antihypertensive drug class, 17/25 (68%) stopped a drug class, 4/25 (16%) had dose increases, and 3/25 (12%) had dose decreases (multiple answers possible). Overall, 7/25 (28%) patients had increased, 15/25 (60%) had decreased, and 3/25 (12%) had mixed medication changes. Baseline, hospitalization, and post-discharge data are shown in the table. ABPM results for patients with unchanged and changed antihypertensives are shown in Figure A, with subgroups for increased, decreased and mixed changes in Figure B.

Conclusion: Over 50% of patients with elevated in-hospital BP during hospitalization were hypertensive post-discharge, regardless of whether antihypertensive treatment was changed, increased or decreased. Therefore, the benefit of in-hospital antihypertensive treatment adjustments remains questionable. Findings emphasize the need for standardized strategies for identifying and managing hypertension during hospitalization, and for post-discharge evaluation.

Table: ABPM of patients with changed vs unchanged medication during hospitalization.

	Characteristic	Changed antihypertensive medication N = 25	Unchanged antihypertensive medication N = 27	p-value
Baseline	Age (years), median (IQR)	70 (65 - 76)	73 (62 - 78)	0.883
	Body mass index kg/m2, median (IQR)	28.4 (23.7 – 33.0)	26.0 (22.7 – 29.0)	0.184
	Female sex, n (%)	9 (36.0)	10 (37.0)	1.000
	Known hypertension, n (%)	20 (80.0)	10 (37.0)	0.004
Hospitalizati	Hospital BP systolic, median (IQR)	151 (148 – 157)	150 (147 – 160)	0.934
	Hospital BP diastolic, median (IQR)	85 (77 – 88)	83 (77 – 89)	0.934
	Standardized BP systolic, median (IQR)	147 (136 – 157)	141 (133 – 154)	0.365
	Standardized BP diastolic, median (IQR)	84 (72 – 89)	85 (78 – 88)	0.876
	Percent elevated BP values in hospital, median (IQR)	62.5 (36.8 – 88.5)	47.0 (25.0 – 74.3)	0.284
Post-discharge	Complication post-discharge, n (%)	4 (16.0)	4 (14.8)	1.000
	Hypertensive 24h mean systolic, n (%)	15 (60.0)	16 (59.3)	1.000
	Hypertensive 24h mean diastolic, n (%)	17 (68.0)	14 (51.9)	0.367
	Hypertensive awake systolic, n (%)	13 (52.0)	14 (51.9)	1.000
	Hypertensive awake diastolic, n (%)	14 (56.0)	14 (51.9)	0.983
	Hypertensive asleep systolic, n (%)	16 (64.0)	18 (66.7)	1.000
	Hypertensive asleep systolic, n (%)	21 (84.0)	17 (63.0)	0.163

Figure: ABPM 4 weeks after hospital discharge for changed/unchanged antihypertensives during hospitalization (panel A), and unchanged/increased/decreased/mixed adaption (panel B).



P44

INTEGR'ÂGE – The Integration of Complementary Medicine Therapies to Standard Care for Patients on Geriatric Hospital Units Presenting with Common Geriatric Syndromes – an Implementation Study

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Introduction: Age-related functional decline is linked to various geriatric syndromes and the multimorbidity which can negatively impact quality of life. Thus, there is a need for a more holistic, integrative approach to geriatric care. This study evaluates the feasibility of integration of complementary medicine (CM) therapies alongside conventional care for older patients with common syndromes—namely pain, anxiety, and sleep disorders—in two hospital settings in the French-speaking part of Switzerland.

Method: This is an intervention-observational implementation study in which eight complementary medicine (CM) therapies—hypnotherapy, herbal medicine, aromatherapy, heart coherence, massage, osteopathy, spiritual guidance, and a sensory cart—were integrated into standard care at the two hospitals in Switzerland. Participants, aged 65 and older, presented with pain, anxiety, and/or sleep disorders and were admitted to either an acute care geriatric unit (Morges) or a rehabilitation unit (Geneva). Exclusion criteria included patients with acute delirium or those lacking capacity. Participants actively selected therapies based on their symptoms. Outcomes assessed included acceptability, appropriateness, feasibility, reach, and maintenance, measured through questionnaires completed by both patients and healthcare professionals (HCPs). Recruitment is ongoing, with data collection scheduled from July 2024 to September 2025.

Preliminary results: By January 2025, 61 participants (70% women) had been included. Mean age was 81 (SD 8; Min-Max 67-93) years in the acute setting and 87 (SD 6; Min-Max 76-97) years in the rehabilitation setting. 87% of participants presented with pain, 34% with anxiety and 23% with sleep disorders. The most frequently chosen therapies were massage (34%), hypnotherapy (30%) and osteopathy (23%). 80% of HCPs perceived CM therapies as beneficial and reported that integrating them at the hospital was important to respect the patient's needs and beliefs, establish a relationship of trust, facilitate the treatment process and reduce medication. Some HCPs raised concerns about the feasibility of this implementation in an acute hospital unit, due the short length of stay.

Conclusion: The integration of complementary medicine to standard care in geriatric hospitals for the treatment of common geriatric syndromes appears to be feasible, particularly in rehabilitation setting.

P45

Intravenous iron for iron deficiency in heart failure with preserved left ventricular ejection fraction. A multivariate analysis

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Introduction: Heart failure (HF) with preserved left ventricular ejection fraction (HFpEF) is now the more prevalent phenotype of disease, and is associated with a large burden of death, hospitalizations and symptoms. Iron deficiency (ID), either absolute or functional is a frequent comorbidity of HF and is associated with a poor prognosis. Although intravenous (IV) iron substitution is beneficial in patients with HFrEF, this matter is less studied in HFpEF. We aimed to assess if IV iron substitution decreases the risk of death or rehospitalization for acute HF.

Methods: Patients with HFpEF according to European Society of Cardiology and either a ferritin <100 ng/ml or a ferritin between 100 and 300 ng/ml and transferrin saturation <20% recorded in the prospective Acute Heart Failure Registry of the University Hospitals of Geneva (ClinicalTrials.gov: NCT 02444416) were included. Patients who received IV iron during the hospital stay were compared with those that did not. Multivariate adjustment was done using a COX proportional hazard model. The primary endpoint was the risk of readmission for acute HF or death from any cause at 1 year.

Results: Four hundred sixty-seven patients (mean age:78 years, 49% women) with HFpEF were included in the registry. ID was present in 251 (54%). Fifty-seven patients (22.7%) received IV iron during their stay (median dose:1000 mg, minimum 100 mg, maximum 2000 mg). Anaemia was present in 69% of substituted versus 36% of non-substituted patients (p = <0.01). At one year, the risk of death or heart failure related rehospitalization was 46 % in substituted vs. 43 % in non-substituted patients (p = 0.71). The unadjusted hazard ratio (HR) of occurrence of the primary endpoint for IV iron administration was 1.05 (95% CI 0.68-1.63). After adjustment for age, sex, body mass index, diabetes, chronic renal failure, chronic anaemia, NYHA class, NT-proBNP, plasma sodium and estimated glomerular filtration rate (eGFR), the HR was 1.08 (95% CI 0.66-1.76).

Conclusion: ID is very prevalent in patients with acute HF and most patients are not substituted. However, IV iron administration during the acute stay did not modify one-year risk of death or readmission in patients with HFpEF and ID. Further studies should investigate the effect of repeated IV iron administration, and assess if background inflammation modifies the effects of iron administration in HFpEF.

P46

Management of Community-Acquired Pneumonia in Switzerland: A Clinical Practice Survey

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Introduction: As of today, the conditions for searching and empirically treating atypical bacteria in patients presenting with community-acquired pneumonia (CAP) remains debated, and international guidelines widely differ in the corresponding recommendations. Three initial antibiotic strategies are commonly proposed[3]: beta-lactam monotherapy, a beta-lactam combined with a macrolide, or a respiratory fluoroquinolone. Two randomized studies[1,2] conducted in hospitalized patients have compared these strategies, yet they reach differing conclusions. The aim of this research is to provide a contemporary snapshot of Swiss clinical practice regarding the empirical treatment of hospital-admitted community-acquired pneumonia and to explore the use of diagnostic tools that may influence the empirical coverage of atypical pathogens.

Methods: Electronic survey administered to physicians (all level of experience) caring for patients affected by CAP across Switzerland. The survey was distributed through the heads of departments of internal medicine, emergency medicine, and geriatrics facilities, the Swiss Society of Pneumology and Infectious Diseases' newsletters, as well as via the Delta network. Data were collected anonymously.

Results: There were 422 responses, the majority from hospital departments (60.9%). We observed regional differences in the use of procalcitonin, nasopharyngeal swabs for viruses and atypical pathogens, CT scans, and decisions regarding the duration of antibiotic treatment (fixed vs. case-by-case). There was no statistically significant difference in the use of empirical antibiotic therapy, the vast majority of treatments being beta-lactam monotherapy (89.3%). No significant differences were observed according to gender; however, differences were noted according to experience, with a decrease in the use of complementary tests as experience increased.

Conclusions: There are unresolved questions concerning the optimal strategy for the diagnosis and empiric treatment of CAP with respect to atypical bacterial pathogens, specifically for mild or moderate severity CAP. Our survey found that a large majority of physicians used beta-lactam monotherapy as first-line empirical treatment, aligning with Swiss and European guidelines (as opposed to combination therapy proposed in North American guidelines).

P47

Mycoplasma Pneumonia associated Encephalitis seen in an adult woman: a rare case

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Learning objectives: In patients presenting with community-acquired pneumonia (CAP) and acute neurological symptoms, Mycoplasma pneumoniae-associated encephalitis should be considered as a differential diagnosis, particularly when Mycoplasma pneumoniae is the only positive microbiological finding. Diagnosis requires cerebrospinal fluid (CSF) analysis, including the detection of specific antibodies against Mycoplasma pneumoniae.

Case: We report the case of a 28-year-old woman who presented to the emergency department with fever and a cough. She had been on Co-Amoxicillin for 1 day, without clinical improvement. Laboratory results showed elevated leukocytes, particularly neutrophils, and increased C-reactive protein. A chest X-ray revealed an infiltrate in the lower left lobe, leading to the initiation of ceftriaxone for suspected CAP. On the following day, the patient developed new neurological symptoms, including frontal headache with nausea, disorientation regarding time and place and a pathological test of skew. A cranial CT scan ruled out increased intracranial pressure or acute bleeding. A CSF tap was performed, and antibiotic therapy was escalated to high-dose ceftriaxone (2x2 g IV), acyclovir, and dexamethasone. The patient was transferred to the intensive care unit for further surveillance.Under the new therapy, her neurological symptoms improved rapidly. CSF and microbiological testing yielded negative results except for Mycoplasma pneumoniae in the sputum. The initial therapy was discontinued, and doxycycline was initiated due to concerns about clarithromycin resistance, given the patient's recent travel to Eastern Asia. CSF analysis confirmed Mycoplasma pneumoniae-associated encephalitis by detecting positive IgM antibodies. MRI of the brain was normal. Following targeted doxycycline therapy, the patient recovered quickly.

Discussion: Mycoplasma pneumonia induced CAP is common, whereas Mycoplasma pneumoniae-associated encephalitis is a rare but the most frequent extrapulmonary manifestation of the infection. It occurs more often in younger patients and children. Neurological symptoms can be observed in approximately 7% of hospitalized patients with Mycoplasma pneumoniae infection, although the underlying pathomechanism remains unclear. Timely and appropriate antibiotic therapy can lead to a rapid recovery, yet the exact pathomechanism of Mycoplasma pneumoniae-associated encephalitis is not fully understood.

P48

Patient perspective of ward rounds in Swiss internal medicine departments: A Mixed-Methods Study

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Introduction: Ward rounds carried out by interprofessional teams are an important element of patient-centered care in the field of internal medicine. This quantitative and qualitative study aimed to assess patient satisfaction with interprofessional ward rounds.

Methods: This mixed-method observational study evaluated patient satisfaction with ward rounds in a hospital setting. A total of 211 hospitalized patients from four different hospitals were assessed between August 25 and September 8, 2023. Quantitative data were collected using a visual analog scale (VAS) from 0 to 10 with satisfaction scores at or below the median VAS defined as the primary endpoint. A median split was applied to categorize patients into groups for comparison. We examined associations between ward round-related factors and satisfaction. Additionally, a qualitative assessment was conducted using open-ended interviews to explore patients'

perception of ward rounds. The study adhered to the SRQR checklist qualitative reporting.

Results: Of the 211 patients analyzed (participation rate 59.3%), median satisfaction score was 8 points. Lower satisfaction was significantly less frequent among patients who reported high comprehensibility (i.e. information was understandable) of their current medical situation (adjusted OR 0.55, 95%CI 0.45, 0.69; p <0.001). Similarly, being involved in medical discussions was associated with lower dissatisfaction (adjusted OR 0.39, 95%CI 0.3,0.52; p <0.001). Qualitative analysis revealed that patients wish to be accurately informed about the current medical situation (31.3%) and be actively involved in ward round discussions (31.3%). Overall, patients preferred interprofessional ward rounds, however one main concern was insufficient transfer of information between the professions.

Conclusion: This study provides important insights from the patient perspective regarding elements of patient-centered care during the medical ward round. Active involvement of patients and information transfer were key issues that may further improve patient experience and satisfaction with care.

P49

Peripheral physiologic responses to acute psychological stress in patients with Takotsubo syndrome: A systematic review and meta-analysis

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Introduction: Takotsubo syndrome (TTS) can be triggered by emotional stress, particularly in postmenopausal women, who constitute the majority of patients. The psychobiological mechanisms are elusive. This review synthesizes literature on peripheral physiological responses to acute psychological stress in TTS patients compared to controls.

Methods: The review followed PRISMA guidelines and was registered on PROSPERO (CRD42023393222). PubMed, Embase, APA PsycInfo, Cochrane CENTRAL, ClinicalTrials.gov, and WHO ICTRP were searched from inception to February 2023, with PubMed re-searched in May 2024. Eligible studies involved adult TTS patients, included a control group, used standardized acute psychological stress induction, and measured at least one peripheral physiological marker pre- and post-stress. Risk of bias was assessed with the BIOCROSS tool. Meta-analysis was conducted with the R package metafor.

Results: Of 5,752 records screened, 13 studies (k = 13) comprising 176 TTS patients and 197 controls were included. In the meta-analysis, TTS patients had higher post-stress plasma norepinephrine levels [Hedges' g = 0.50, 95% CI (0.17, 0.84), p = 0.003, k = 5] and a marginally significant increase in stress-induced norepinephrine [g = 0.28, 95% CI (-0.05, 0.61), p = 0.09, k = 5] compared to controls without established cardiovascular disease. They also showed a smaller change in left ventricular ejection fraction [g = -0.44, 95% CI (-0.87, -0.02), p = .043, k = 3]. The systematic review additionally supported endothelial/vasomotor dysfunction (k = 3), wall motion abnormalities (k = 2), and impaired myocardial perfusion (k = 2) in TTS patients.

Conclusion: TTS patients may exhibit distinct physiological responses to psychological stress, particularly in catecholamine levels and cardiac function. Evidence is limited by the few available studies and unclear risk of bias overall.

P50

Prevalence, contributing factors, and predictors of diagnostic errors in medical inpatients: a retrospective multicenter cohort study

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Introduction: Diagnostic errors are a major patient safety concern and can cause significant harm. Despite their impact, the prevalence and causes of diagnostic errors are understudied among medical inpatients, a multimorbid and complex population that may be particularly vulnerable to such errors. We aimed to determine the prevalence, contributing factors, resulting harm, and clinical predictors of diagnostic errors in medical inpatients.

Methods: This retrospective cohort study included adult patients admitted to internal medicine at one tertiary and four secondary care hospitals in Switzerland between 01/2022 and 12/2022. Two trained clinicians independently analyzed electronic medical records of eligible patients using standardized instruments to identify diagnostic errors, contributing factors, and resulting harm. Patients were included in random order until a pre-specified threshold of 50 errors was reached, enabling analysis of five pre-specified clinical predictors of diagnostic error using multivariable logistic regression. The primary outcome was the presence of a diagnostic error. The secondary outcome was the resulting level of harm.

Results: A total of 52 (15%; 95% CI 11.6-19.1%) of 347 patients (median age 73 [interquartile range, 61-81] years; 140 [40.3%] female) experienced at least one diagnostic error during hospitalization, resulting in harm in 43/52 patients (82.7%; 95% CI 70.3-90.6%). The most common contributing factors were failure to consider the correct diagnosis (n = 40, 76.9%), failure to order appropriate tests (n = 31, 59.6%), and failure to follow up on a critical physical exam finding (n = 30, 57.7%) (Figure 1). Neurocognitive/psychiatric disorders (odds ratio [OR], 2.20; 95% confidence interval [CI], 1.20-4.10) and active cancer (OR, 2.10; 95% CI, 1.01-4.20) were independent predictors of diagnostic error (Figure 2).

Conclusion: Diagnostic error is common among adult medical inpatients and results in substantial patient harm. Errors most commonly arose from failures to consider the correct diagnosis, order appropriate tests, or act based on physical exam findings. Neurocognitive/psychiatric disorders and active cancer were independent clinical predictors of diagnostic error. Whether targeted interventions for patients at-risk can reduce diagnostic errors warrants further research.

Figure 1. Factors contributing to diagnostic errors

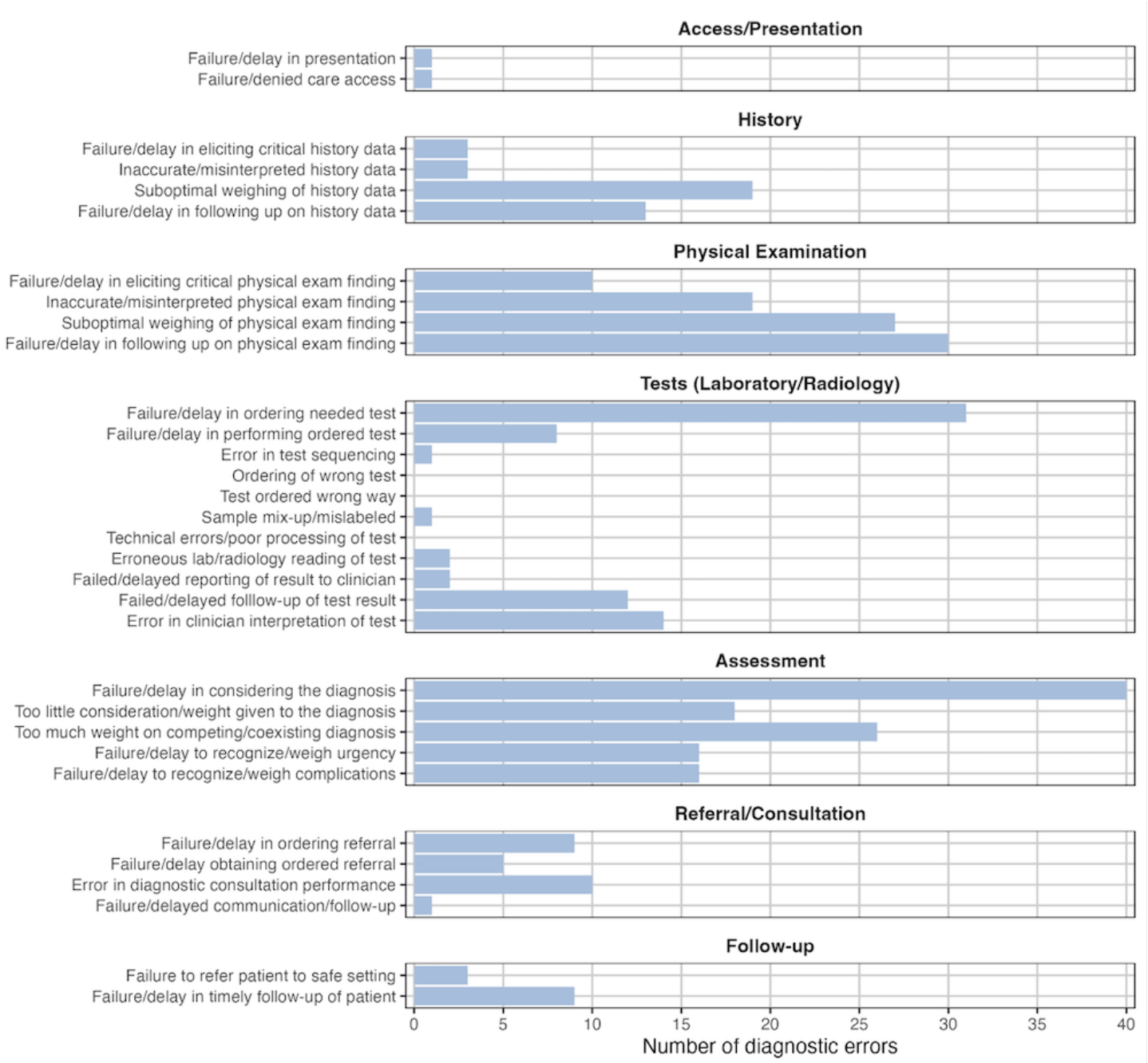
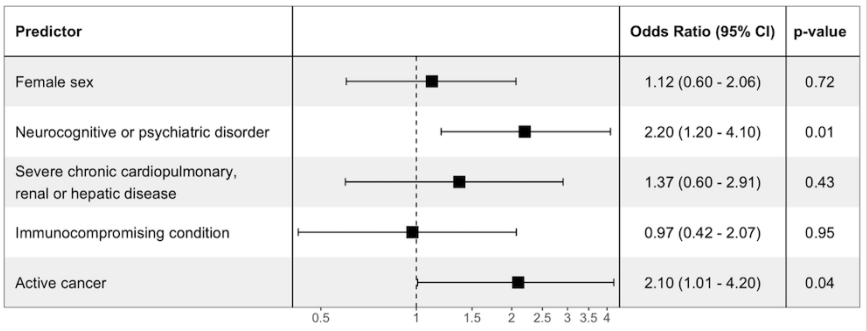


Figure 2. Association between pre-specified clinical predictors and diagnostic errors



P51

Prognostic Understanding among Patients with Advanced Cancer Referred to Enhanced Supportive Care

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Introduction: Prognostic understanding among patients with life-limiting diseases is crucial for helping them make informed decisions about their care. Previous studies have shown that a significant proportion of patients with metastatic cancer are unaware that their condition is incurable. However, much of this research has focused on patients nearing the end of life. There is a lack of research on prognostic understanding in patients with metastatic cancer who are still receiving active disease-directed treatment. The aim of our study was to assess the level of prognostic understanding among patients referred to an Enhanced Supportive Care (ESC) service, and to explore the factors influencing understanding as well as its association with patient-relevant outcomes.

Methods: Adult patients with metastatic cancer referred to the ESC service between November 13th, 2023, and August 31st, 2024, at the University College Hospital Macmillan Cancer Centre London were eligible and completed a structured online questionnaire. The primary endpoint was patients' prognostic understanding assessed with the Prognosis and Treatment Perception Questionnaire. Secondary endpoints included symptoms of anxiety and depression, measured with the General Anxiety Disorder 2-item (GAD-2) and Patient Health Questionnaire-2 (PHQ-2), respectively.

Results: Of 91 patients, 34 (37.4%) were unaware of their prognosis. In a regression model adjusted for age and gender, being in a relationship was significantly associated with good prognostic understanding (adjusted OR 2.75, 95% CI 1.11 to 6.8, p = 0.03). Patients who had a good prognostic understanding reported fewer symptoms of anxiety (16% vs. 36%; adjusted OR 0.32, 95% CI 0.12 to 0.88, p = 0.03) and depression (23% vs. 45%; adjusted OR 0.35, 95% CI 0.13 to 0.91, p = 0.03).

Conclusion: A significant proportion of patients with metastatic cancer referred to the ESC service remain unaware that their cancer is not curable. Improving prognostic understanding may help to reduce psychological distress and enhance emotional well-being, supporting better patient-centred ESC care.

P52

Recurrent Respiratory Infections and Septic Arthritis Unmasking Suspected Good Syndrome (hypogammaglobulinemia after thymoma resection)

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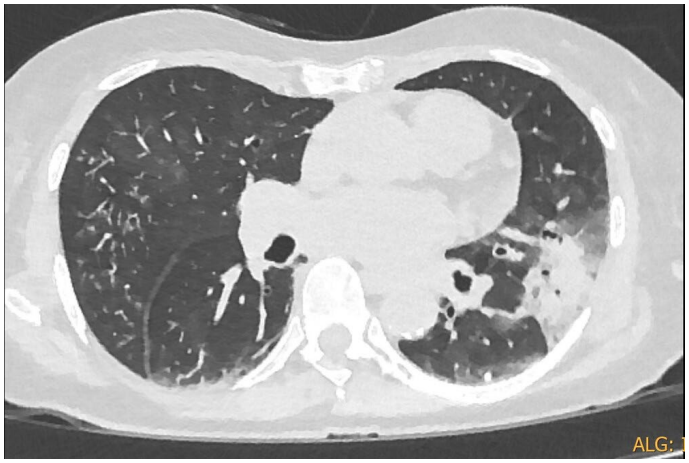
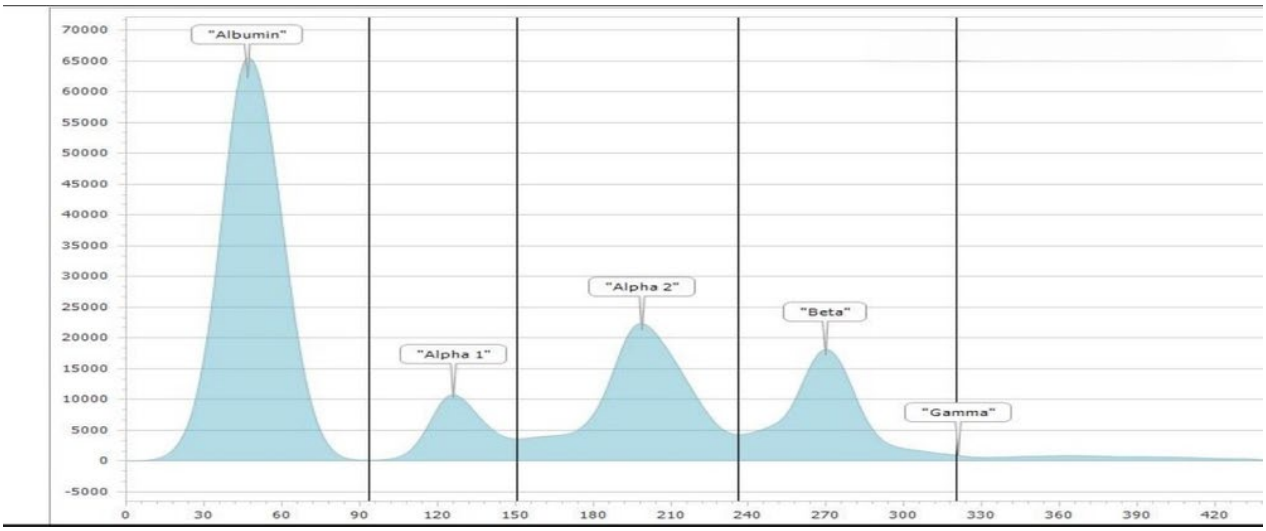
Learning objective: This case highlights the diagnostic complexity of recurrent respiratory infections including invasive pneumococcal infection (IPD) and underscores the importance of considering underlying immunodeficiencies, such as hypogammaglobulinemia and Good syndrome, particularly in patients with a history of thymoma.

Case: A 59-year-old female with a history of thymoma resection two years ago and recurrent bronchitis presented with acute dyspnea, productive cough with hemoptysis, and fever. A chest computed tomography revealed pre-existing bronchiectasis and consolidations, which had been treated multiple times with antibiotics in recent months. Empiric therapy with co-amoxicillin and azithromycin was initiated but switched to a targeted penicillin therapy once blood cultures identified Streptococcus pneumoniae. Concurrent atraumatic right shoulder pain revealed pneumococcal septic arthritis requiring two surgical interventions. Initial improvement was complicated by persistent fever, leading to a suspected drug fever and a temporary antibiotic switch before reverting to amoxicillin. Hospital-acquired Influenza A infection was identified 20 days later and treated with oseltamivir. Workup for recurrent bronchitis, bronchiectasis, pneumonia and IPD revealed profound hypogammaglobulinemia, raising suspicion for Good syndrome in the context of a prior thymectomy. Repeated immunoglobulin measurement, immunoglobulin replacement if indicated and pneumococcal vaccination was recommended. The patient was discharged after 24 days in improved condition.

Discussion: Recurrent respiratory infections with systemic symptoms such as fever and hemoptysis often raise concerns for structural lung abnormalities, chronic infections, or autoimmune conditions. Septic arthritis with S. pneumoniae, along with hypogammaglobulinemia, underscored the diagnostic complexity of this case. Influenza A infection added to the challenge, emphasizing the importance of vigilance in immunodeficient patients. A comprehensive workup identified profound hypogammaglobulinemia potentially associated with thymoma resection (i.e. Good syndrome), guiding tailored recommendations for follow-up care. This immunodeficiency stems from thymoma-associated T-cell dysregulation, which disrupts B-cell maturation and antibody production, predisposing patients to recurrent and severe bacterial infections.



Pneumonic infiltrate and subtle tree-in-bud pattern



Profound hypogammaglobulinemia

P53

Severe groin pain leading to the diagnosis of acquired Hemophilia A

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Learning objectives: To recognize the importance of an isolated, prolonged activated partial thromboplastin time (aPTT) in a patient with atraumatic retroperitoneal bleeding.

Case: A 60-year-old, healthy female presented with acute, worsening left groin pain over the last 12 hours. There was no trauma, surgery or medication use. Ten days before admission, the patient noticed a spontaneously developed hematoma on her left forearm. Physical examination revealed tenderness over the left inguinal ligament without hernia, vascular or abdominal abnormalities. Hip movement was painful. At admission, blood analysis including coagulation studies showed an isolated prolonged aPTT of 45 seconds (ref. 25-35 seconds). A CT scan revealed a large hematoma in the left iliopsoas muscle with active arterial bleeding (figure 1). No arterial embolization was advised due to the spontaneous origin and its retroperitoneal location. Due to the failure to correct the prolonged aPTT in a mixing study, acquired hemophilia was suspected. A reduced factor VIII activity (6 %) and a factor VIII inhibitor titer of 6.7 Bethesda units (BU) confirmed this. Treatment included recombinant activated factor VII (rFVIIa) for hemostasis control and high-dose corticosteroids. Emicizumab (a humanized bispecific, FVIII mimetic therapeutic antibody) was administered on day three with normalization of coagulation parameters and progressive anemia. After stopping Emicizumab and reducing corticosteroid dose, a relapse occurred. Emicizumab was re-initiated. A treatment with rituximab is planned.

Discussion: Acquired hemophilia A (AHA) is a rare autoimmune disorder caused by autoantibodies against coagulation factor VIII, leading to spontaneous bleeding. Unlike congenital hemophilia, AHA commonly presents with bleeding into soft tissues and muscles rather than joints. The diagnostic hallmark is an isolated prolonged aPTT not corrected by a mixing study, along with the presence of factor VIII inhibitors.

Management focuses on stopping bleeding and reducing inhibitor levels. Recombinant factor VIIa and Emicizumab are effective for bleeding control, immunosuppressants (e.g., corticosteroids) target the underlying autoimmune process. In 30-50 % of cases an underlying disease can be found (e.g. malignancy, connective tissue disorders, pregnancy, postpartum, medications). AHA is a rare autoimmune disease with high risk for morbidity and mortality. Prompt recognition and treatment prevents severe complications.

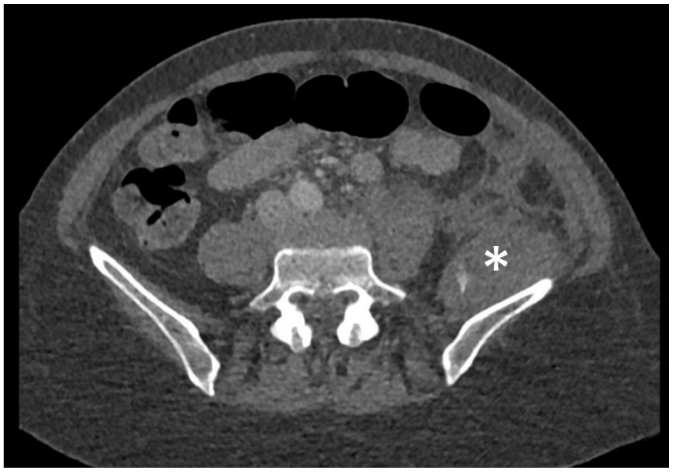

Figure 1: Active arterial bleeding (*) in the left iliopsoas muscle (CT angiography).

P54

Sex specific pain characteristics in urgent abdominal pain – a prospective, international cohort study from BASEL VII

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Introduction: Acute abdominal pain is a common symptom in the Emergency Department (ED). Due to the variety of potential organs involved it presents a challenge to accurately and promptly diagnose abdominal pain, especially urgent cases. Due to differences in anatomy, pain perception and disease prevalence, men and women can differ in the presentation of abdominal pain. Therefore, this study aimed to investigate sex-specific differences in the early presentation of urgent adominal pain (UAP).

Methods: This study used data from BASEL VII. We defined 47 Abdominal Pain Characteristics (= APCs) from seven categories: onset, quality, dynamics, radiation, location, symptoms, and palpation. Positive Likelihood Ratios in male and female participants for UAP in each APC and p-values for interaction were calculated. BASEL VII is an investigator-initiated, prospective, multicenter diagnostic study that enrolled patients presenting to the ED with non-traumatic acute abdominal pain. Participants received standard of care. Clinical judgment regarding UAP was quantified with the help of a visual analog scale by the treating physician after clinical assessment and laboratory findings, and again after imaging. UAP was defined as life-threatening, requiring urgent surgery, and/or hospitalization for acute medical reasons. Final diagnosis was adjudicated by two independent specialists using all available information, including histology and follow-up.

Results: In total, 1150 participants (588 male; 562 female) were included. Urgent abdominal pain was the adjudicated final diagnosis in 186 women and 235 men. The accuracy of most APCs in the diagnosis of UAP was low in women and men, with likelihood ratios close to 1. Notable exceptions mirrored clinical experience and were observed for defense (PLR for male 2.37; female 2.88) and rebound (PLR for male 2.37; female 2.08) in the category palpation. Out of 47 APCs, only 2 had a $p < .05$ and 1 had a $p = .05$ for interaction between sexes. These APCs were related to the accompanying symptoms vomiting ($p = 0.03$) and fever ($p = 0.05$) and to the quality pressing pain ($p = 0.03$).

Conclusion: Sex-specific diagnostic performance of APCs is minimal, indicating that they do not significantly aid in the early diagnosis for urgent abdominal pain.

P55

Sex-specific insights into iron deficiency in the presence of anemia and inflammation

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Introduction: Anemia of inflammation and iron deficiency anemia are the most common types of anemia, causing an immense burden of disease worldwide.[1] Despite frequent diagnosis of anemia of inflammation in hospitalized patients [2], little is known about these patients' sex-specific differences in iron deficiency. Therefore, we aimed to study sex differences in patients with anemia and inflammation and their influence on iron deficiency biomarkers.

Methods: This retrospective cross-sectional study included patients with anemia (Hb for women <120g/l, Hb for men <130g/l [3]) and inflammation (CRP >5mg/L) hospitalized at a Swiss tertiary referral center between 1.1.2020 and 31.12.2023. Iron deficiency was defined as sTfR/log(ferritin) (i.e. ferritin-index, a marker of iron stores in the presence of inflammation) ≥ 1.5. Patient characteristics were reported descriptively. Simple and multiple linear regression models assessed the effect of sex on the logarithm of ferritin-index (adjusted for age, renal disease, congestive heart failure, diabetes mellitus, peptic ulcer disease, SGLT2-inhibitors, proton pump inhibitors, and CRP). Distribution of age and presence of iron deficiency was visualized using a violin plot.

Results: Of 439 participants, 41.2% (n = 181) were female. 44.2% (n = 194) had concomitant iron deficiency (women: 49.7%, men: 40.3%, $p = 0.052$). Women were in median older than men when looking at the entire population (77 vs. 73 years, $p = 0.006$) and the group with iron deficiency (78.5 vs. 74 years, $p = 0.030$). The multiple linear regression model showed no association between log(ferritin-index) and sex (coefficient 0.02, 95% CI -0.13 to 0.18, $p = 0.76$). The model could explain only 9.5% of the variability of log(ferritin-index).

Conclusion: In the multiple linear regression model, sex was not associated with the ferritin-index in patients with inflammation. Factors not considered in our model may explain a larger part of the variability of the ferritin-index. This should be investigated in further prospective studies.

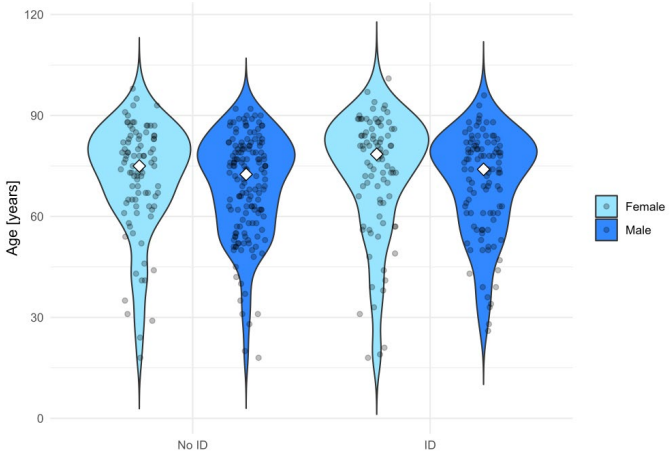

Figure 1: violin plot shows age distribution by sex and presence of ID (ferritin-index ≥ 1.5), white diamond = median

P56

Special Features in Patients with Tetraplegia: When Autonomic Dysregulation Disguises as an Infection

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Learning objectives: In patients with tetraplegia presenting with hypotension and sweating suggestive of infection but without a clear focus, autonomic dysregulation should be considered as a differential diagnosis. Educating healthcare providers about autonomic dysregulation can prevent unnecessary antibiotic use, reducing resistance risk and healthcare costs.

Case: A 48-year-old patient with tetraplegia was admitted with symptomatic hypotension, nausea, and sweating after a suprapubic catheter change for macrohematuria. Urosepsis was suspected based on clinical symptoms and urine findings (leukocytes 991/µl, squamous epithelial cells 9/µl, nitrite negative, bacteria detected) alongside slightly elevated inflammatory markers (leukocytes 12.6 G/l, C-reactive protein 33.7 mg/l). Empiric antibiotic therapy was initiated. Urine cultures revealed Enterococcus faecium (10E5/ml), previously found in earlier samples, which was interpreted as colonization rather than infection. Rapid symptom improvement, stable inflammatory markers, and a good clinical condition after stopping antibiotics suggested autonomic dysregulation instead of infection.

Discussion: Urinary tract infections (UTIs) are common in patients with tetraplegia due to chronic catheterization, increasing the risk of colonization and infection. Diagnosis is based on clinical symptoms and urine cultures, but patients with tetraplegia often lack typical UTI symptoms such as dysuria. Additionally, findings like leukocyturia or bacteriuria often indicate colonization rather than infection. In this case, Enterococcus faecium detection suggested colonization, often linked to previous antibiotic use, rather than a true uropathogen. Autonomic dysregulation results from spinal cord injuries above T6, leading to a loss of supraspinal control over autonomic functions. Key features include cardiovascular dysfunction, such as orthostatic hypotension and autonomic dysreflexia, as well as impaired thermoregulation, neurogenic bladder and bowel dysfunction, sexual dysfunction, and respiratory challenges. Management involves identifying triggers and applying pharmacological and non-pharmacological interventions to stabilize autonomic functions. This case highlights the importance of distinguishing autonomic dysregulation from infections in patients with tetraplegia. Recognizing these conditions allows healthcare providers to avoid unnecessary treatments, improve outcomes, and reduce costs

P57

Stroke in young patients - rare but often just the tip of the iceberg

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Learning objectives: Hereditary hemorrhagic telangiectasia (HHT), formerly known as Osler-Weber-Rendu syndrome, is an autosomal dominantly inherited vascular disorder affecting approximately 1 in 5,000 individuals (1, 2). Key clinical features include epistaxis, mucocutaneous telangiectases, and gastrointestinal bleeding. Additionally, arteriovenous malformations (AVMs) may occur in the lungs, liver, intestines, and brain. Diagnosis is based on clinical criteria and genetic testing. Pulmonary AVMs (pAVMs), present in over 50% of HHT patients, are capillary-free connections between pulmonary arteries and veins, increasing the risk of complications such as paradoxical embolism (3).

Case: A 16-year-old female presented with new-onset transient weakness and paresthesia of the right hand, along with persistent slurred speech and numbness of the mouth and tongue, beginning one hour before presentation. The remaining physical examination, including skin assessment, was unremarkable.

Neurological evaluation revealed dysarthria and isolated right-sided facial drooping, consistent with central facial nerve palsy (NIHSS 3). Brain MRI demonstrated acute cortical ischemia in the left middle cerebral artery. Electrocardiography showed normofrequent sinus rhythm. Upon reassessing the patient's medical history, she disclosed a known diagnosis of HHT with pAVMs. Given the significant bleeding risk associated with AVMs and the mild clinical deficit, thrombolysis was not performed. The patient was subsequently transferred to a tertiary center, where therapeutic anticoagulation was initiated. Further etiological workup, including transesophageal echocardiography, identified a patent foramen ovale (PFO), while thrombophilia screening was unremarkable. In summary, the findings suggested a paradoxical embolism as the cause of the stroke, either via the pAVM or the PFO. For secondary prevention, catheter-guided embolization of the pAVMs and PFO closure were performed.

Discussion: Strokes in young patients are rare in internal medicine emergency departments but require prompt evaluation due to their significant impact on daily life and increased mortality. The underlying causes often differ from those in older patients and are typically complex. Therefore, ischemic stroke in young individuals necessitates a thorough etiological assessment, including a detailed history and evaluation of cardiac, infectious, structural, and coagulation abnormalities (4,5), to prevent recurrent events.

P58

Symptomatic Hypomagnesaemia and Hypocalcaemia after Long-Term Use of Proton Pump Inhibitors

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Learning objectives: Magnesium levels are not routinely screened in hospitalised patients. However, proton pump inhibitors (PPIs) are prescribed regularly. Hypomagnesemia can occur after long-term use of PPIs as they disrupt the active Mg2+ transport through the transient receptor potential melastin-6/7 (TRPM6/7) channels in the apical membrane of enterocytes[(1)]. Furthermore, moderate to severe hypomagnesaemia, due to its role in the PTH pathway, is associated with hypocalcaemia [(2, 3)].

Case: A 70-year-old woman, suffering from a peritoneal metastatic ovarian carcinoma, presented with immobilising muscle cramps in the extremities lasting for about 2 hours. She also reported taking high doses of pantoprazole for months due to occasional vomiting. In the clinical examination no abnormalities could be found. The pronounced muscle cramps suggested an underlying electrolyte imbalance. Laboratory findings revealed hypokalaemia, severe hypomagnesaemia and hypocalcaemia. PTH was elevated and Vitamin D was low. Renal magnesium loss with a fractional magnesium excretion of 20% was higher than normal. eGFR was at 55.5ml/min/1.73m^2 (serum creatinine 92umol/l). After intravenous substitution of the electrolytes mentioned and stopping the PPI therapy, the electrolyte levels returned to within normal range and the symptoms regressed.

Discussion: In this case, several mechanisms come together. The PPI-induced reduction in acid synthesis and the recurrent vomiting with the consecutive acid loss led to an alkalization of the intestinal pH and thus to a reduced magnesium absorption. Since magnesium is required for the formation of PTH, PTH production and secretion decreases accordingly. By influencing the tight junction of the thick ascending loop (TAL), low PTH levels in turn lead to reduced magnesium and calcium reabsorption, resulting in hypocalcemia. Hypocalcemia could not be adequately corrected because of the PTH deficiency. The additional hypokalemia was probably multifactorial. On the one hand, the vomiting caused a metabolic alkalosis, leading to a compensatory intracellular potassium shift. On the other hand, the lack of activation of the calcium-sensing receptor in the TAL due to magnesium deficiency leads to stimulation of the RomK channels of the collecting pipes with increased tubular potassium efflux and therefore renal potassium loss. Finally, we attributed the clinic and the various electrolyte disturbances to a PPI-induced side effect.

P59

The Early Prediction of Patient Outcome in Acute Heart Failure: A retrospective study

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Introduction: Acute heart failure (AHF) is a major cause of hospitalizations, posing significant challenges to healthcare systems (1,2). Despite advancements in management, the rate of poor outcomes remains high, emphasizing the need for timely interventions (1, 3). This study aimed to identify early admission-based factors that are predictive of poor outcomes in hospitalized AHF patients, to contribute to early risk stratification and optimize patient care.

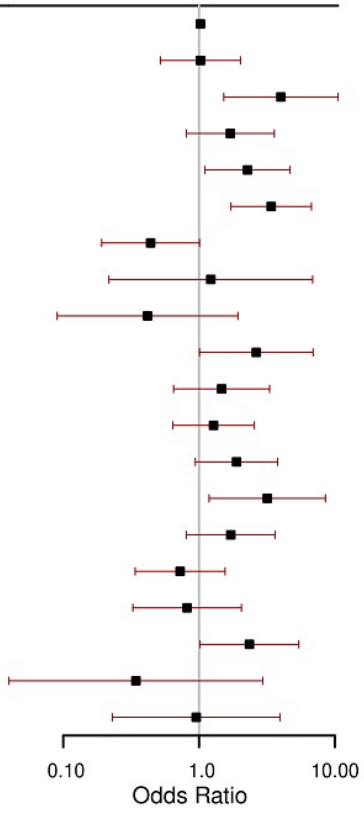
Methods: This retrospective single-center study analyzed routine data of adult patients hospitalized for AHF at a public general hospital in Switzerland. Outcomes included in-hospital death, intensive care (ICU) treatment, and length of stay. Potential predictors were limited to routine parameters, readily available at admission. Predictors were identified by means of multivariable regression analysis.

Results: Data of 638 patients (median age 84 years, 50% female) were included in the study. Systolic blood pressure ≤ 100mmHg (Odds ratio (OR) 4.0, p = 0.005), peripheral oxygen saturation ≤ 90% (OR 2.3, p = 0.026), oxygen supplementation (OR 3.4, p <0.001), and peripheral edema (OR 2.6, p = 0.048) at admission were identified as predictors of in-hospital death. Furthermore, a previous stroke or transient ischemic attack (OR 3.2, p = 0.021), and concomitant peripheral artery disease (PAD) (OR 2.4, p = 0.045) were predictive of in-hospital death. ICU admission was associated with oxygen supplementation (OR 33.0, p <0.001), male sex (OR 3.2, p = 0.032), and the presence of active cancer (OR 5.8, p = 0.036), while recent weight gain reduced ICU transfer odds (OR 0.18, p = 0.037). Factors linked to longer hospital stays included low oxygen saturation (IRR 1.2, p = 0.001), recent weight gain (IRR 1.1, p = 0.036), and concomitant chronic kidney disease (CKD) (IRR 1.2, p = 0.001).

Conclusion: This study validated established predictors of AHF outcomes in a Swiss cohort, highlighting the predictive value of poor perfusion status, fluid overload, and comorbidities such as PAD, CKD, and active cancer. The identified predictors imply potential for developing tools to improve rapid treatment decisions. Future research should focus on the design and validation of risk scores, incorporating these parameters to optimize early interventions and reduce adverse outcomes in AHF.

Figure 1: Multivariable logistic regression for in-hospital death. bpm: beats per minute.
ACS: Acute coronary syndrome. TIA: Transient ischemic attack.

Parameter	Odds Ratio (95%-CI)	p-value
Age (years)	1.02 (0.98 - 1.07)	0.295
Male sex	1.03 (0.52 - 2.03)	0.942
Systolic blood pressure ≤ 100mmHg	4.01 (1.52 - 10.56)	0.005**
Heart rate > 100 bpm	1.70 (0.81 - 3.58)	0.163
Peripheral oxygen saturation ≤ 90%	2.28 (1.11 - 4.68)	0.026*
Oxygen supplementation	3.40 (1.72 - 6.72)	<0.001***
Weight gain	0.44 (0.19 - 1.01)	0.052
Confusion	1.22 (0.22 - 6.87)	0.821
Chest pain	0.42 (0.09 - 1.93)	0.264
Peripheral edema	2.64 (1.01 - 6.91)	0.048*
Rales/attenuated breath sounds	1.47 (0.65 - 3.31)	0.356
Jugular vein distension	1.28 (0.64 - 2.55)	0.485
Previous ACS episode	1.89 (0.94 - 3.80)	0.074
Previous stroke / TIA	3.18 (1.19 - 8.52)	0.021*
Chronic kidney disease	1.71 (0.81 - 3.64)	0.161
Diabetes mellitus	0.73 (0.34 - 1.56)	0.41
Obstructive pulmonary disease	0.82 (0.33 - 2.05)	0.667
Peripheral artery diesease	2.35 (1.02 - 5.43)	0.045*
Depression	0.34 (0.04 - 2.95)	0.33
Active cancer	0.95 (0.23 - 3.95)	0.948



P60

Therapeutic-dose anticoagulation in noncritically ill patients hospitalized with COVID-19: an individual participant data meta-analysis

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Introduction: An individual participant data meta-analysis (IPDMA) could improve precision regarding the effects of therapeutic-dose anticoagulation in noncritically ill patients hospitalized with COVID-19. We aimed to compare the benefits and harms of therapeutic- versus non-therapeutic-dose anticoagulation in noncritically ill patients hospitalized with COVID-19.

Methods: For this systematic review and IPDMA, we searched Medline and Embase on August 1, 2024, for clinical trials that randomized noncritically ill adults hospitalized with COVID-19 to receive therapeutic- or non-therapeutic-dose anticoagulation. Trials including both critically and noncritically ill patients were eligible if randomization was stratified by disease severity. The primary outcome was organ support or death within 28 days. Using a one-stage IPDMA approach, we applied mixed-effects logistic regression models with random treatment effects and trial-specific intercepts, adjusted for age. We investigated eight pre-specified effect modifiers. We imputed missing baseline data using multilevel two-stage multiple imputation.

Table. Baseline characteristics of included patients.

	Therapeutic (N = 3784)	Non-Therapeutic (N = 2578)	Missing, %
Age (years) – mean (SD)	55.3 (15.7)	55.9 (15.7)	0.0
Male – n (%)	2245 (59.3)	1499 (58.1)	0.0
Body Mass Index – median [IQR]	27.5 [24.5, 32.0]	28.1 [24.9, 32.3]	7.7
Body Mass Index – n (%)			7.7
<30 kg/m2	2339 (66.1)	1464 (62.7)	
30-40 kg/m2	968 (27.4)	701 (30.0)	
≥40 kg/m2	230 (6.5)	170 (7.3)	
Creatinine (µmol/L) – median [IQR]	77.8 [63.6, 91.1]	76.1 [62.8, 92.9]	3.9
Estimated glomerular filtration rate – n (%)			12.0
<30 mL/min	78 (2.3)	60 (2.6)	
30-60 mL/min	410 (12.3)	292 (12.8)	
≥60 mL/min	2835 (85.3)	1926 (84.5)	
Hemoglobin (g/L) – median [IQR]	135 [123, 146]	134 [121, 146]	4.5
Platelet Count (10^9/L) – median [IQR]	211 [167, 272]	213 [169, 281]	4.3
D-Dimer – n (%)			14.6
<2 ULN	2318 (71.4)	1453 (66.5)	
2-4 ULN	592 (18.2)	439 (20.1)	
≥4 ULN	338 (10.4)	292 (13.4)	
Oxygen Saturation (%) – median [IQR]	94 [91, 96]	94 [92, 96]	3.8
Oxygen Therapy – n (%)	1957 (52.0)	1575 (61.3)	0.4
Corticosteroid – n (%)	1478 (40.3)	1144 (46.5)	3.7
Remdesivir – n (%)	672 (18.3)	527 (21.4)	3.6
IL-6 Inhibitor – n (%)	16 (1.1)	25 (1.9)	56.3
Antiplatelet – n (%)	613 (16.7)	443 (18.0)	3.6
Continent – n (%)			0.0
Asia	1044 (27.6)	610 (23.7)	
Australia & New Zealand	15 (0.4)	17 (0.7)	
Europe	238 (6.3)	228 (8.8)	
Latin America	1374 (36.3)	830 (32.2)	
North America	1113 (29.4)	893 (34.6)	
Study – n (%)			0.0
ASCOT	50 (1.3)	79 (3.1)	
ATTACC/ACTIV-4a	1032 (27.3)	900 (34.9)	
FREEDOM	2257 (59.6)	1141 (44.3)	
HEP-COVID	80 (2.1)	80 (3.1)	
PROTHROMCOVID	102 (2.7)	105 (4.1)	
RAPID	228 (6.0)	237 (9.2)	
Swiss COVID-HEP	35 (0.9)	36 (1.4)	

Abbreviations: IQR, interquartile range; SD, standard deviation.

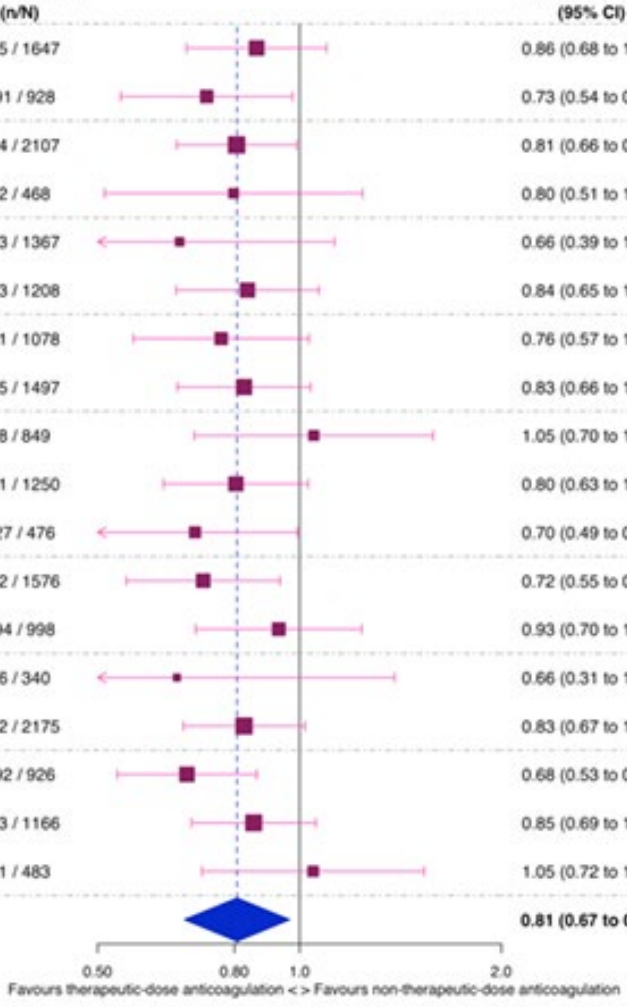
Figure. Therapeutic-dose versus non-therapeutic-dose anticoagulation in noncritically ill adults hospitalized with COVID-19.

A. Treatment effects on primary and secondary outcomes within 28 days.

Outcome	Studies (N)	Therapeutic (n/N)	Non-Therapeutic (n/N)	Adjusted odds ratio§ (95% CI)	(95% PI)
Organ support* or death	7	488 / 3784	416 / 2575	0.81 (0.67 to 0.97)	(0.67 to 0.97)
Major thrombotic complication† or death	6	236 / 3749	231 / 2538	0.63 (0.37 to 1.05)	(0.26 to 1.49)
Major bleeding	4	27 / 3597	12 / 2358	1.92 (0.63 to 5.89)	not estimated
Death	6	198 / 3749	183 / 2538	0.72 (0.54 to 0.95)	(0.54 to 0.95)
Major thrombotic complication†	6	51 / 3749	66 / 2542	0.54 (0.26 to 1.12)	(0.16 to 1.75)
Venous thromboembolism‡	6	41 / 3749	57 / 2542	0.53 (0.26 to 1.09)	(0.18 to 1.55)
Deep vein thrombosis	5	19 / 3647	31 / 2437	0.48 (0.21 to 1.11)	(0.21 to 1.11)
Pulmonary embolism	5	26 / 3699	28 / 2463	0.73 (0.34 to 1.57)	(0.34 to 1.57)

B. Treatment effects on the primary outcome across prespecified subgroups.

Subgroup	Therapeutic (n/N)	Non-Therapeutic (n/N)	Adjusted odds ratio§ (95% CI)	p for interaction
D-dimer <2 ULN	298 / 2599	225 / 1647	0.86 (0.68 to 1.10)	0.244
D-dimer ≥2 ULN	190 / 1185	191 / 928	0.73 (0.54 to 0.98)	
No antiplatelet	385 / 3145	324 / 2107	0.81 (0.66 to 0.99)	0.939
Antiplatelet	103 / 639	92 / 468	0.80 (0.51 to 1.24)	
No corticosteroid	202 / 2252	163 / 1367	0.66 (0.39 to 1.13)	0.551
Corticosteroid	286 / 1532	253 / 1208	0.84 (0.65 to 1.07)	
Female	165 / 1539	151 / 1078	0.76 (0.57 to 1.03)	0.591
Male	323 / 2245	265 / 1497	0.83 (0.66 to 1.04)	
Age <50 years	103 / 1362	68 / 849	1.05 (0.70 to 1.58)	0.053¶
Age 50-70 years	253 / 1763	221 / 1250	0.80 (0.63 to 1.03)	
Age >70 years	132 / 659	127 / 476	0.70 (0.49 to 0.99)	
No obesity	248 / 2467	222 / 1576	0.72 (0.55 to 0.94)	0.152
Obesity	240 / 1317	194 / 998	0.93 (0.70 to 1.24)	
eGFR ≥30 to <60 ml/min	87 / 477	86 / 340	0.66 (0.31 to 1.39)	0.303
eGFR ≥60 ml/min	373 / 3228	312 / 2175	0.83 (0.67 to 1.02)	
Randomization in 2020	151 / 1010	192 / 926	0.68 (0.53 to 0.86)	0.077**
Randomization in Q1-Q2 2021	252 / 1945	173 / 1166	0.85 (0.69 to 1.06)	
Randomization in Q3 2021 to Q3 2022	85 / 829	51 / 483	1.05 (0.72 to 1.53)	
Overall treatment effect			**0.81 (0.67 to 0.97)**	



Abbreviations: CI, confidence interval; eGFR, estimated glomerular filtration rate; PI, prediction interval; Q, quarter of the year; ULN, upper limit of normal.

* Organ support was defined as as high-flow (>15 L/min) nasal cannula oxygen, non-invasive or invasive mechanical ventilation, or vasopressor therapy.

† Major thrombotic complication was defined as deep vein thrombosis, pulmonary embolism, ischemic stroke, myocardial infarction, or systemic arterial thromboembolism.

‡ Venous thromboembolism was defined as objectively confirmed deep vein thrombosis or pulmonary embolism

§ Odds ratios were adjusted for age.

¶ p for interaction for age was derived using age as continuous variable.

** p for interaction for randomization date was derived using a continuous time variable, defined as days since the first patient was randomized.

Results: Of 1051 references screened, we identified 11 trials including 7655 concurrently randomized, potentially eligible patients. We obtained IPD from seven trials, comprising 6362 eligible patients randomized between 04/2020 and 09/2022 (Table). Overall, 488 (12.9%) of 3784 patients in the therapeutic-dose group required organ support or died within 28 days, compared to 416 (16.2%) of 2575 patients in the non-therapeutic-dose group (adjusted odds ratio [aOR], 0.81; 95% confidence interval [CI], 0.67-0.97; 31 fewer per 1000; 95% CI, 53 fewer to 5 fewer; 95% prediction interval, 0.67-0.98; Figure). Major bleeding was rare, with 27/3597 (0.8%) events among patients in the therapeutic-dose group and 12/2358 (0.5%) patients in the non-therapeutic-dose group (aOR, 1.92; 95% CI, 0.63-5.89; 5 more per 1000; 95% CI, 2 fewer to 25 more). No high-credibility effect modification was identified (Figure).

Conclusion: In noncritically ill patients hospitalized with COVID-19, therapeutic-dose anticoagulation reduced the odds of organ support or death within 28 days compared to non-therapeutic-dose anticoagulation.

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Thrombin generation and fibrin clot structure in nephrotic patients with primary glomerular disorders: a cohort study

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Introduction: Venous thromboembolic disease (VTE) is a well-known complication of the nephrotic syndrome (NS). The concept of selective or non-selective permeability of the glomerular barrier may explain the variable incidence of VTE in different types of glomerular disorders. There are currently no prospective data presenting in detail the hemostasis balance in different primary diseases of the nephrotic spectrum. The aim of the study is to assess the global hemostasis in patients with NS due to membranous nephropathy, primary focal segmental glomerulosclerosis (FSGS), IgA nephropathy (IgAN), or minimal change disease (MCD).

Methods: Patients with nephrotic range proteinuria and biopsy-proven primary glomerular disorders followed at McGill University Health Centre, Geneva University Hospitals and the University of North Carolina at Chapel Hill have been prospectively enrolled (n = 57). Informed consent was obtained and the study was approved by the local research ethics boards. Main exclusion criteria include partial or complete remission of proteinuria and active use of anticoagulants. Thrombin generation was performed with PPP reagent. The lag time, slope, maximal absorption and fibrinolysis were calculated from turbidity curves. Fibrin clot structure was evaluated by permeation technique and scanning electron microscopy (SEM). Patients with glomerular disorders and controls were compared using the t-test or the Mann Whitney test, as appropriate.

Results: Overall, thrombin generation and turbidity parameters were increased in patients with primary glomerulopathy, compared with controls (Figure 1a and 1b). Fibrin clot properties indicate a thrombotic phenotype with reduced permeability (Figure 2a), although patient fibrin fibers diameter were of similar thickness compared to controls. Representative SEM images are presented in Figure 2b.

Conclusion: Our results converge towards a pro-coagulant state at different levels of hemostasis in patients with primary NS. To our knowledge, such a detailed study of global hemostasis has not been performed before and will allow us to better understand hemostatic balance in nephrotic patients.

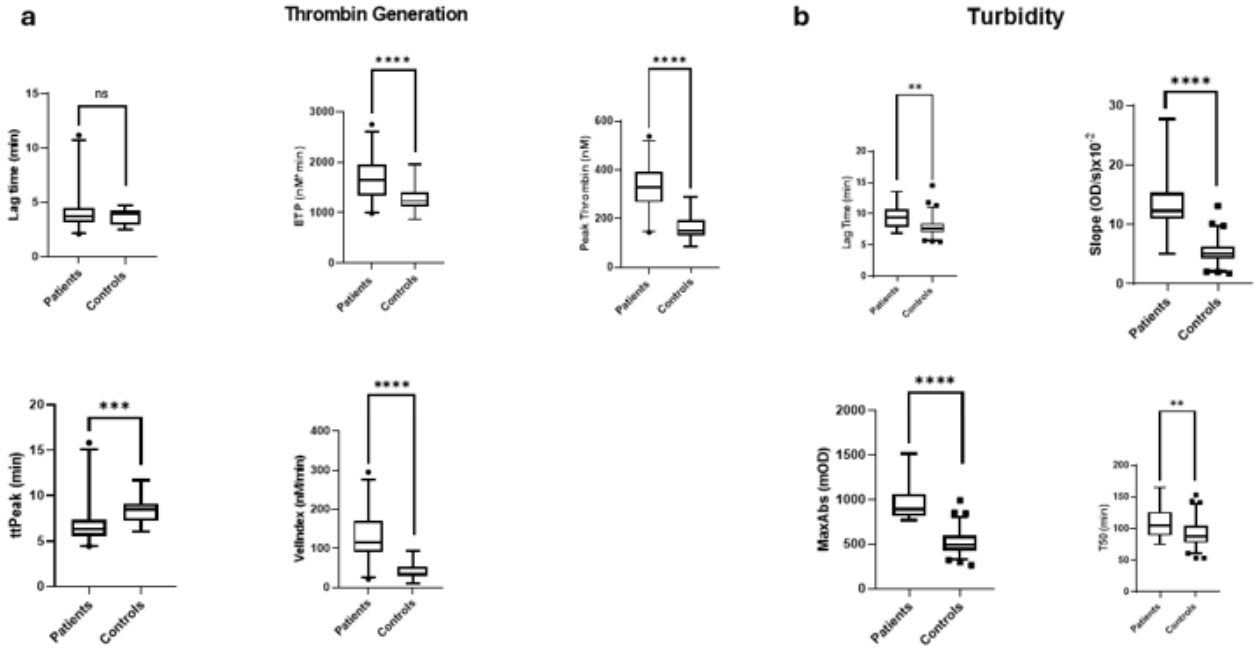

Figure 1. Thrombin generation (**1a**) (n=56) and turbidity (**1b**) (n=19) in patients with nephrotic syndrome due to primary glomerular disorders, presented as median and P2.5th-P97.5th range, compared with controls (n=20 and 146). ns: not significant.

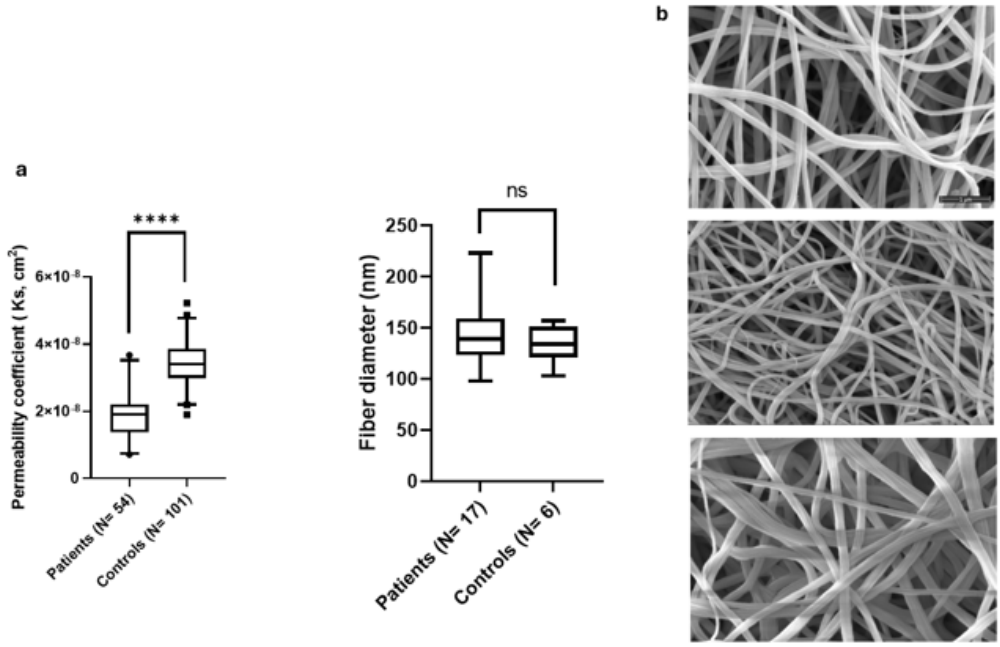

Figure 2a Permeation and fiber diameter in patients with nephrotic syndrome due to primary glomerular disorders (median and P2.5th-P97.5th range) vs controls. 2**b**. Representative scanning electron microscopy images from a representative control clot (mean fiber diameter: 138 nm) (top), from a patient with fibers thinner than control (98 nm, middle image), and from a patient with fibers thicker than control (166 nm) (bottom).

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Ultrasound of internal jugular vein for hydration status assessment – a methodological analysis in healthy volunteers

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Introduction: Many authors suggest ultrasound (US) of internal jugular vein (IJV) for hydration status assessment, using ultrasound jugular venous pressure (uJVP) as a surrogate for central venous pressure. However, no univocal method exists. The aim of this project was to compare 4 different IJV-US methods for hydration status assessment in 30 healthy euvolemic volunteers.

Methods: Each IJV-US assessment was performed by 2 independent investigators. Methods 1 and 2 used a transversal view, measuring IJV-height (in relation to sternal angle) at the point where IJV is smaller than common carotid artery (1) or completely collapsed (2) during the entire respiratory cycle. Method 3 used a longitudinal view of the IJV taper, measuring the tip (3a) or the beginning (3b) of the tapering portion (Figure 1). To calculate uJVP, 5cm were added. We evaluated feasibility and interrater agreement of each method, as well as percentage of participants differing >1 standard deviation (SD) from the expected value based on previous studies (6+/-2 cm).

Results: Mean (SD) age was 33 (+/-10) years, median (interquartile range, IQR) BMI 22.8 (21.5-25.6) kg/m^2, 50% of participants were female. Head of bed elevation during assessment was 20°, 15° and 10° in 33%, 30% and 20% of participants. Successful assessment was possible in 100% for methods 1 and 3b, 97% for method 3a and 47% for method 2. Median duration (IQR) for methods 1-3 was 29.5 (20.8-31.6) s, 32.5 (17.0-34.8) s and 38.5 (23.5-62) s. Mean (SD) tolerability (visual analogue scale; 10 = best) was 9.0-10. Interrater agreement for methods 1-3b was 60%, 36%, 69% and 83%. Median (IQR) uJVP was 3.7 (3-4) cm for method 1, 4.5 (3.7-5.2) cm for method 2, 3.9 (3.3-4.5) cm for method 3a and 3.2 (2.7-3.5) cm for method 3b. Percentage of participants differing >1 SD from expected value were 57%, 21%, 48% and 83% for methods 1-3b; they were all lower (Figure 2).

Conclusion: IJV-US for hydration status assessment showed very high feasibility for methods 1 and 3. All methods were well tolerated and quick. Longitudinal view showed better interrater agreement than transversal view; method 3b the best. uJVP measurements were lower than expected, possibly because (unlike previous studies) the head of bed was set at an individual height to reduce confounding factors (confluence with subclavian vein, presence of valves).

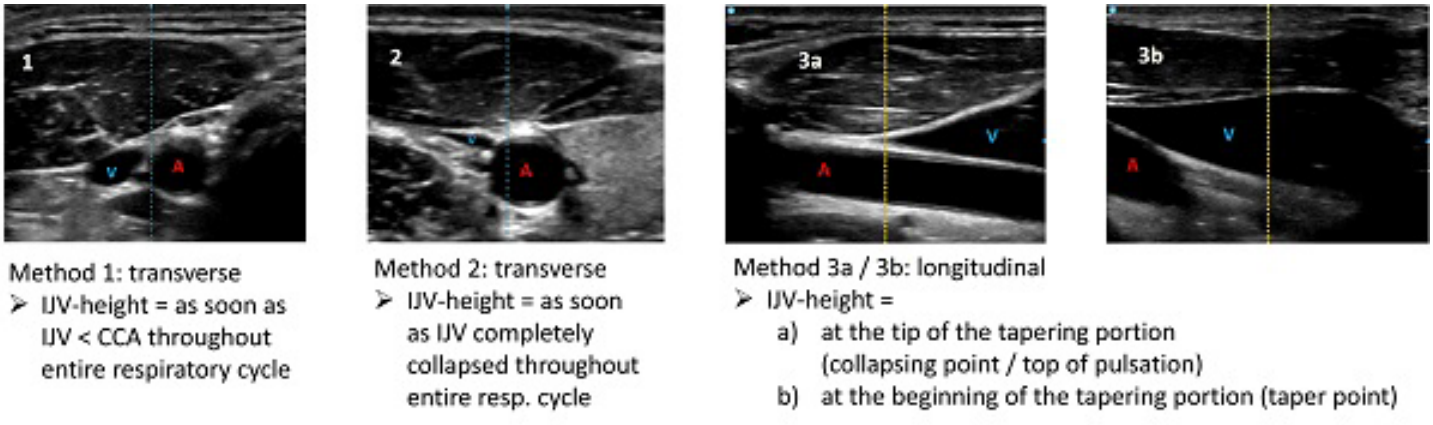

Figure 1: Ultrasound IJV assessment methods

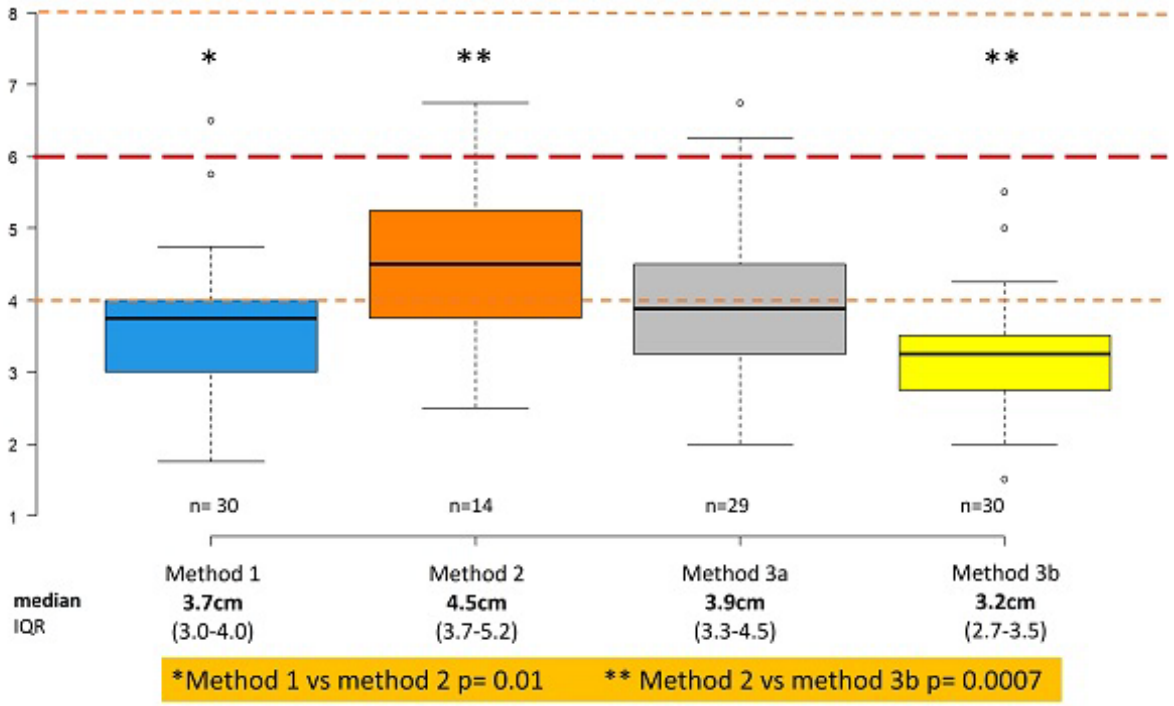

Figure 2: uJVP results (cm)

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Using Machine Learning to Differentiate Causes of Dyspnea in the Emergency Department

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Introduction: Dyspnea is a frequent symptom in emergency departments (ED) with multifactorial causes, including cardiac and pulmonary conditions. Accurate and timely diagnosis is crucial to guide appropriate management and improve patient outcomes. Artificial intelligence (AI) and machine learning (ML) are emerging as promising tools to support clinical decision-making.

Methods: This retrospective observational study analyzed data from 787 patients presenting with dyspnea at the Cantonal Hospital of Baselland, Switzerland, in 2022. Clinical parameters, vital signs, laboratory results, and final diagnoses were collected. ML models, including Decision Trees, Random Forest, and Decision Tree Boosting, were developed to differentiate between respiratory and cardiac causes and predict specific diagnoses. Model performance was assessed using accuracy, sensitivity, and specificity. The parameters entered into the models included comorbidities, symptoms, laboratory values, clinical signs, and vital signs available at the time of admission

Results: The most common diagnoses were decompensated heart failure (28.4%), pneumonia (26.4%), and COVID-19 (17%). Decision Tree Boosting achieved the highest accuracy across all categories (89% for binary classification, 69.2% for quadruple classification, and 49.1% for single diagnosis), followed by Random Forest (88%, 64%, and 50%, respectively), while Standard Decision Trees had the lowest performance (84.66%, 57.81%, and 36.82%). Key diagnostic parameters identified included C-reactive protein (CRP), B-type natriuretic peptide (BNP), and the symptom "cough." Comorbidities, while clinically relevant, showed limited predictive utility in ML models due to their non-specific nature.

Conclusions: AI-based models can assist in identifying the etiology of dyspnea, particularly by distinguishing between cardiac and respiratory causes. Although Decision Tree Boosting demonstrated the highest accuracy (89.6%) for binary classification, the low sensitivity for specific diagnoses underscores the need for larger datasets and more advanced algorithms to improve model robustness and generalizability. Integrating AI into clinical workflows could enhance efficiency and resource allocation but requires further validation across diverse settings to ensure reliability and safety.

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Vestibular neuronitis caused by capnocytophaga canimorsus after dog bite in an immunocompetent subject

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Capnocytophaga canimorsus is a and fastidious gram-negative, capnophilic bacterium, primarily transmitted through dog bites, as this bacteria is found in the saliva of 25% of dogs. Thus, the infection can occur without a bite, if transmistted through saliva or other contact with dogs and cat. This infection can lead to severe systemic manifestations, including sepsis (with a mortality rate of 26%), purpura, disseminated intravascular coagulation (DIC), thrombotic thrombocytopenic purpura (TTP), gangrene (sometimes requiring amputation), abdominal symptoms, myocardial infarctions, endocarditis, mycotic aneurysms, and ocular infections. In immunocompromised individuals, Capnocytophaga canimorsus can also cause meningitis. Capnocytophaga canimorsus infections are rare and difficult to document because this bacterium is challenging to culture. Moreover, to our knowledge, vestibular neuronitis has not yet been described in connection with a Capnocytophaga canimorsus infection. Notable risk factors include splenectomy and chronic alcohol use.

We present a case of a 66-year-old man without significant comorbidities, who presented to the emergency department with fever, dizziness, fatigue, and a distinctive cutaneous rash. On clinical examination, we find an horizontal rotatory nystagmus. No empiric antibiotics were administered initially. Five days later, blood cultures grew Capnocytophaga canimorsus, and targeted treatment with piperacillin/tazobactam was initiated, leading to a favorable clinical outcome. Notably, MRI of the posterior fossa revealed multifocal cranial nerve (oculomotor, trigeminal, facial, and right vestibular nerves), as well as bilateral labyrinths inflammation, suggestive of a cranial polyneuropathy.

Vestibular neuronitis, which has not been previously described in the literature as a complication of Capnocytophaga canimorsus infection.

This case underscores the potential for atypical presentations of Capnocytophaga canimorsus infections, highlighting the need for timely diagnosis and appropriate antimicrobial therapy. Further studies are needed to better understand the full spectrum of this rare infection, including its neurological manifestations. This case reports enlights the fact that capnocytophaga can occur in non immunocompromised patient, even without a dog bite. Further more, at our knowledge, this was the first case of vestibular neuronitis occuring with a capnocytophaga canimorsus infection.

P65

When Implants Turn Against the Body: A Case Study of Siliconosis

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Learning objective: To better understand the phenomenon of siliconosis, a systemic disease associated with silicone breast implants.

Case: A 40-year-old woman was referred to our tertiary hospital to investigate multiple cervical and retroauricular lymphadenopathy, associated with breast swelling, papulo-squamous skin rash and arthralgia. Her past medical history was unremarkable except for silicone breast implantation eight years earlier. On admission, she had no fever. Physical examination revealed multiple and bilateral painless cervical lymphadenopathy associated with breast tenderness and inflammation of the first left metatarso-phalangeal joint. Routine laboratory testing revealed mild elevation of C-reactive protein and abnormal liver tests. Infectious workup and autoantibody testing were negative. Abdominal ultrasonography was normal. A whole-body PET-CT scan confirmed the presence of multiple cervical hypermetabolic lymphadenopathy, a periprosthetic hypermetabolism and bilateral periarticular hypermetabolism in the first metatarsophalangeal joint. A skin biopsy revealedgranuloma annulare, whereas lymph node excision revealed non-necrotizing granulomatous lymphadenitis, strongly supporting the diagnosis of siliconosis. Non-steroidal anti-inflammatory drugs were introduced, and the patient was discharged home. Complete resolution of lymphadenopathy, breast swelling, and partial regression of skin rash was observed at 4-week clinical follow-up. After shared decision-making, breast implants were not removed.

Discussion: Siliconosis, also known as Breast Implant Illness (BII) or autoimmune/inflammatory syndrome induced by adjuvants (ASIA), is an increasingly recognized, though poorly understood, clinical phenomenon. This syndrome manifests with systemic symptoms such as chronic fatigue, arthralgia, myalgia, skin rash and lymphadenopathy. Although the exact mechanism remains unclear, it has been suggested that silicone breast implants, by acting as an immune trigger, induce a granulomatous systemic inflammatory response. Diagnosis relies primarily on the exclusion of other autoimmune diseases or lymphoma. Lymph node excision with silicone on histopathology is generally not necessary to confirm the diagnosis. Treatment relies on anti-inflammatory drugs. If ineffective, surgical removal of the implants is followed by resolution of symptoms in most women.

P66

Associations of different lipid species with the development of cardiometabolic diseases

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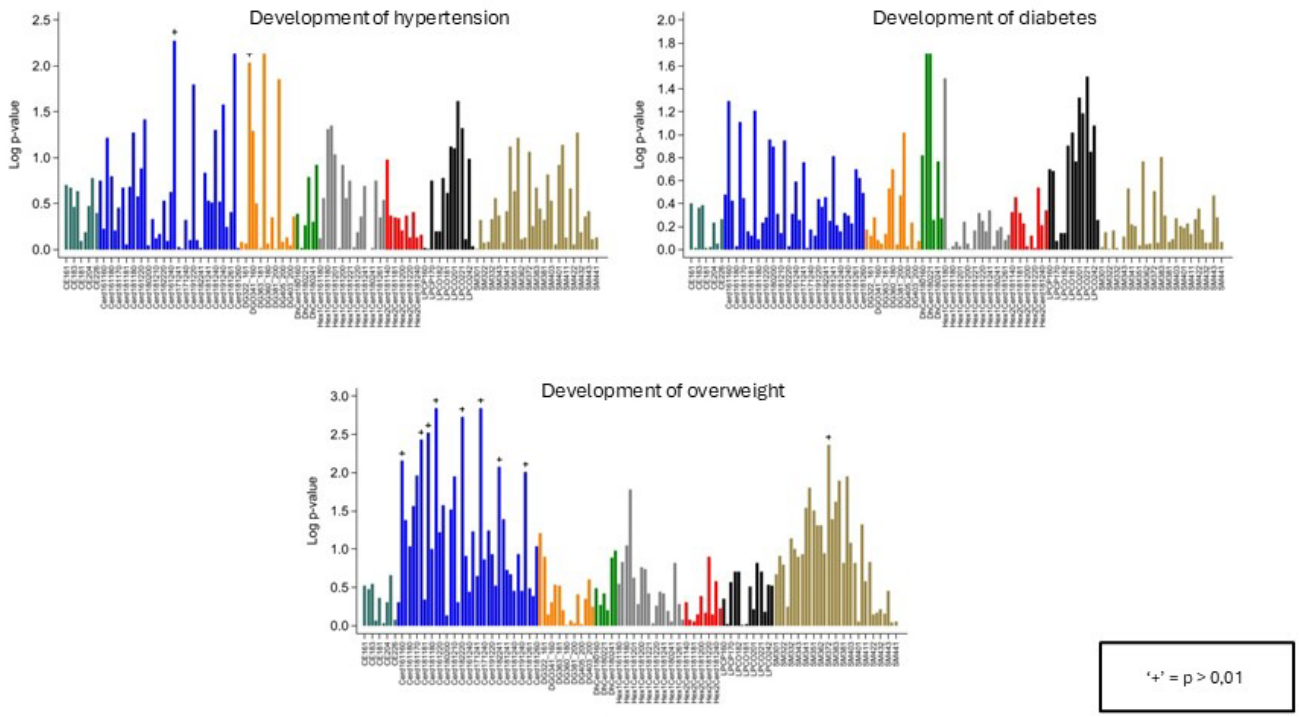
Background: Cardiovascular disease (CVD) is one of the major causes of disability and mortality worldwide with the major risk factors of CVD being hypertension, obesity, and type 2 diabetes (T2DM). Complex lipid species are associated with the risk of cardiometabolic disease and T2DM. Whereas lipidomics could also help in identifying people who will develop hypertension, obesity, or diabetes at early stage (or disease onset), has been less studied.

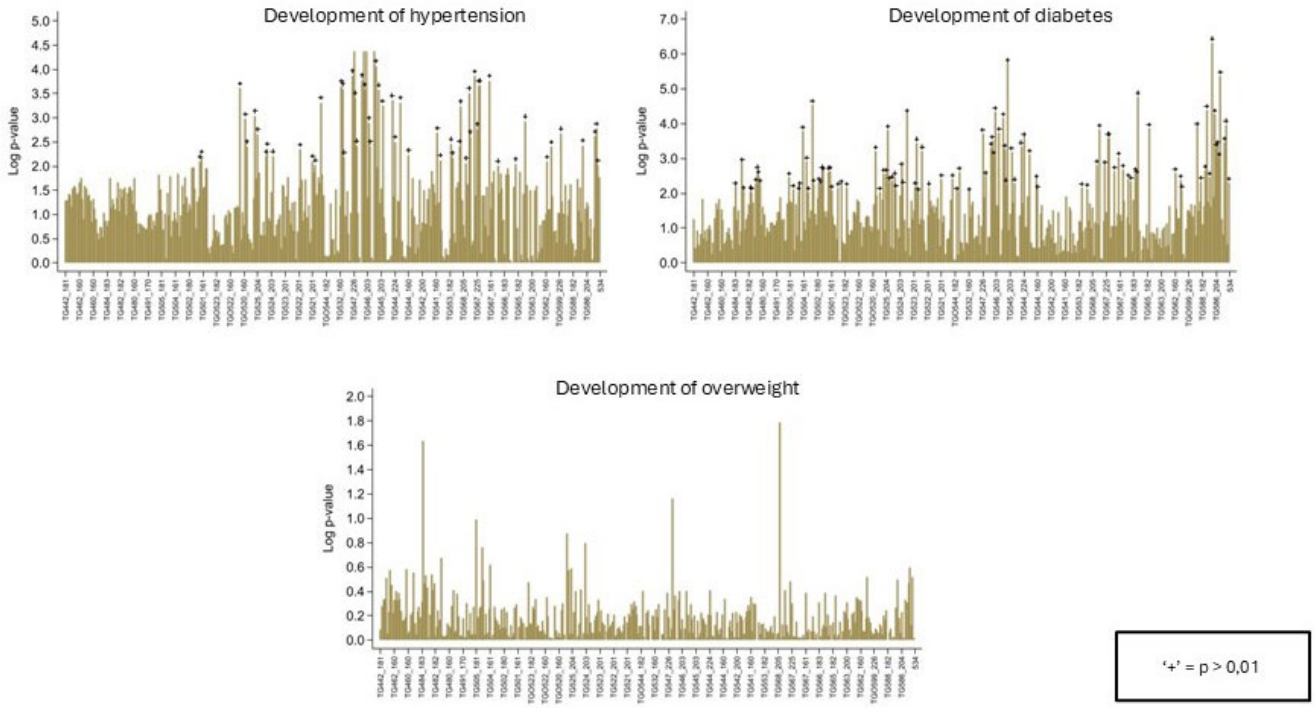
Aims: To access the associations of different complex lipid species with the development of cardiometabolic risk factors

Methods: Data from the CoLaus| PsyCoLaus study for the survey period 2014-2021 (N = 364, 52.9±5.2 years, 58% female) devoid of hypertension or T2DM. Lipids were extracted from EDTA plasma aliquots, and lipid quantification is performed by liquid chromatography-tandem mass spectrometry (LC-MS/MS) approach, using hydrophilic interaction approach on a TSQ Altis triple quadrupole mass spectrometer. Development of hypertension was considered if the participant presented with a systolic blood pressure ≥140 mm Hg or a diastolic blood pressure ≥90 mm Hg or received antihypertensive drug treatment. Development of T2DM was considered if the participant had fasting plasma glucose ≥7 mmol/L or received antidiabetic drug treatment.

Results: Development of hypertension was associated with many triglycerides and some other lipid moieties (ceramides 181220 & 201240). Development of T2DM was not associated with most non-triglyceride lipid moieties, but with many triglyceride moieties. Development of overweight was associated with ceramides (ceramide 161160, 182180, 161200, 182200, 182220, 182230, 182241 & 181250), but not with triglycerides. See Figure 1 for the association with several lipid moieties and Figure 2 for the association with triglyceride species.

Conclusion: Development of cardiometabolic diseases appears to be differently associated with lipid species. Further research is needed to sort out the different patterns of association of lipid species with the development of cardiometabolic diseases.





P67

Branched-chain amino acids and major depressive disorder in a sample of healthy, non-obese people

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Introduction: Major depressive disorder (MDD) is the most prevalent neurological condition and poses a significant challenge to global public health. While existing pharmacological treatments are widely used, their efficacy is often limited, and they are frequently accompanied by considerable side effects. Recently, branched-chain amino acids (BCAAs) have gained attention as a potential novel intervention for MDD. However, research investigating the relationship between plasma BCAA concentrations and MDD in population-based studies remains limited, with most studies constrained by small sample sizes.

Method: This cross-sectional study utilized data from the CoLaus|PsyCoLaus cohort in Lausanne, Switzerland. Plasma BCAA concentrations were measured using stable isotope dilution liquid chromatography–mass spectrometry. Major depressive disorder (MDD) status was assessed using the Diagnostic Interview for Genetic Studies and categorized as "Current," "Remitted," or "No." Bivariate and multivariable analyses were performed using ANOVA, with all analyses stratified by gender.

Result: Data from 2,182 participants (mean age: 53.25 ± 8.5 years, 58.07% female) were analyzed. Bivariate analysis showed that, among all participants, the "No" MDD group had higher BCAA levels compared to the "Remitted" group. However, after stratifying by gender, no significant results were observed. Furthermore, after multivariable analysis, the few significant results that were initially observed also disappeared (Table).

Conclusion: There is no significant association between BCAA levels and MDD in healthy, non-obese and old people.

Table: bivariate and multivariable associations between major depressive disorder and branched chain amino acids.

	Bivariate analysis			Multivariable analysis		
	Valine	**Leucine**	**Isoleucine**	**Valine**	**Leucine**	**Isoleucine**
MDD, (all)						
No	**228.5 ± 45.4***	**121.2 ± 25.4***	**55.77 ± 13.2***	225.4 ± 1.2	119.1 ± 0.6	54.6 ± 0.33
Remitted	**222.9 ± 44.0**	**116.2 ± 24.2**	**53.44 ± 13.1**	226.3 ± 1.4	118.6 ± 0.7	54.7 ± 0.4
Current	221.7 ± 47.0	116.8 ± 25.8	54.48 ± 13.5	227.4 ± 3.4	120.9 ± 1.8	56.6 ± 0.9
P-value	0.01	<0.001	<0.001	0.8	0.3	0.12
MDD, women						
No	207.6 ± 36.4	106.2 ± 17.0	48.1 ± 8.8	208.1 ± 1.6	106.6 ± 0.8	48.2 ± 0.4
Remitted	210.0 ± 36.0	107.1 ± 17.7	48.4 ± 9.3	209.2 ± 1.5	106.8 ± 0.7	48.2 ± 0.4
Current	206.2 ± 35.5	107.6 ± 18.6	49.6 ± 9.6	206.5 ± 3.6	107.6 ± 1.8	49.5 ± 0.9
P-value	0.16	0.20	0.15	0.30	0.32	0.28
MDD, men						
No	249.3 ± 43.9	136.1 ± 23.5	63.4 ± 12.3	249.0 ± 1.8	136.0 ± 1.0	63.3 ± 0.5
Remitted	249.1 ± 47.0	134.4 ± 25.3	63.7 ± 13.5	249.9 ± 2.7	134.9 ± 1.4	63.9 ± 0.8
Current	263.4 ± 49.1	141.5 ± 26.4	67.6 ± 14.0	261.5 ± 7.2	140.9 ± 3.9	67.2 ± 2.1
P-value	0.40	0.54	0.27	0.90	0.62	0.23

* "Remitted" vs "No": **P<0.05**

Bivariate and multivariable analyses were conducted by ANOVA analysis, adjusting for age (continuous), smoking status (never, former, current), marital status (living alone, living in couple), BMI (continuous) and sedentary status (yes, no). For the overall sample, a further adjustment on gender was conducted. Results were presented as mean ± standard error. Statistical significance was considered for a two-sided test with p<0.05.

P68

Diabetes treatment and control: are they related to access to health care and insurance status?

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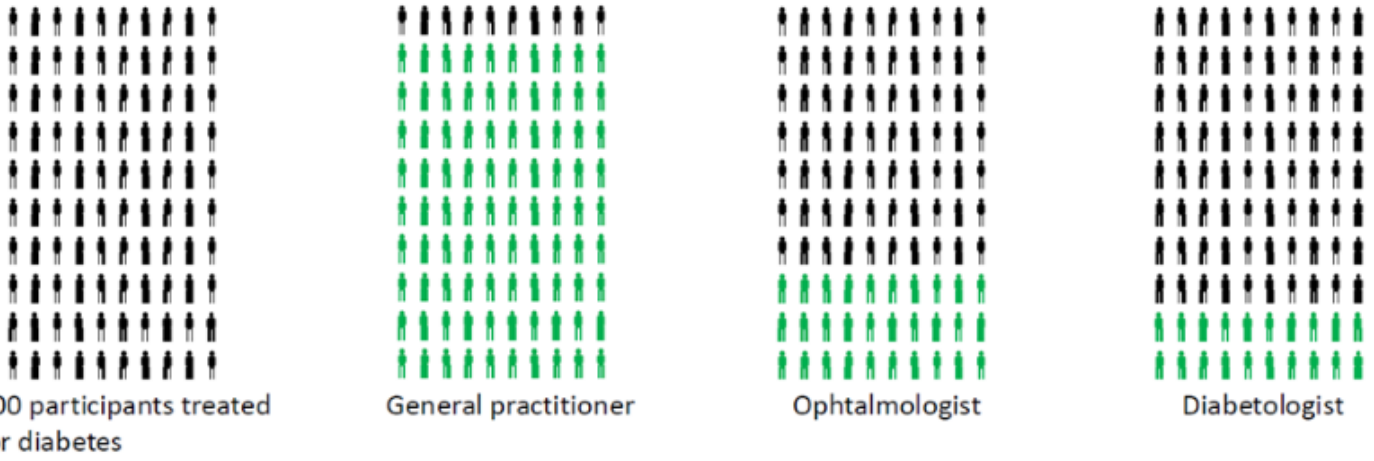
Introduction: We assessed whether diabetes treatment and control are associated with access to health care and with health insurance status.

Methods: Cross-sectional data (2018-2021) of an ongoing prospective study conducted in Lausanne, Switzerland. Participants with diabetes were queried regarding their access to health care and health insurance, which were related to diabetes treatment and control levels.

Results: We selected 306 (68.1±9.0 years, 39.5% women, 75.8% on antidiabetic drug treatment) participants. Among treated participants, 89.7% had consulted a doctor in the previous 12 months but only 20.7% consulted a diabetologist and 29.3% an ophthalmologist, see figure. Among treated participants, diabetic control remained suboptimal (40.5%). Controlled diabetes tended to be associated with a lower frequency of hospitalizations: odds ratio and (95% CI) 0.55 (0.25-1.19), p = 0.130, and this association became significant after inverse probability weighting (IPW), 0.21 (0.08-0.58). Similar findings were obtained for consulting a diabetologist: 0.20 (0.08-0.51) and 0.18 (0.05-0.67) after IPW, and for consulting a neurologist: 0.98 (0.27-3.54), and 0.17 (0.03-0.92) after IPW, see also table. Treated participants chose more frequently an ordinary insurance with a lower franchise but higher premiums than untreated (81.7% vs. 63.4%, p = 0.005), while no difference was found between controlled and uncontrolled participants (81.9% vs. 81.6%, p = 1.000).

Conclusions: Although treated diabetics consult a doctor, consultation of a diabetologist or an ophthalmologist is suboptimal. Less than half of treated participants had controlled diabetes. Controlled diabetes reduces hospitalizations and specialist consultations. Participants with diabetes prefer to pay higher health insurance premiums, thus avoiding possible sudden health expenditures due to a high franchise.



Multivariable analysis of the association between diabetes control and health use, third follow-up (2018-2021) of the CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	No inverse probability weighting			Inverse probability weighting		
	Uncontrolled	Controlled	P-value	Uncontrolled	Controlled	P-value
Renouncing to health care	1 (ref)	0.56 (0.20 - 1.61)	0.285	1 (ref)	1.15 (0.26 - 5.00)	0.853
Number of consultations, GP	5.3 ± 0.5	5.2 ± 0.7	0.867	NC	NC	
Health use last 12 months						
Consulted a doctor	1 (ref)	1.72 (0.52 - 5.72)	0.375	1 (ref)	3.01 (0.50 - 18.2)	0.229
Consulted a cardiologist	1 (ref)	0.93 (0.41 - 2.08)	0.853	1 (ref)	1.73 (0.58 - 5.11)	0.322
Consulted a diabetologist *	1 (ref)	0.20 (0.08 - 0.51)	0.001	1 (ref)	0.18 (0.05 - 0.67)	0.010
Consulted a dermatologist	1 (ref)	1.08 (0.37 - 3.10)	0.892	1 (ref)	0.91 (0.31 - 2.66)	0.867
Consulted a neurologist	1 (ref)	0.98 (0.27 - 3.54)	0.977	1 (ref)	0.17 (0.03 - 0.92)	0.039
Consulted an ophthalmologist	1 (ref)	0.56 (0.28 - 1.11)	0.099	1 (ref)	0.52 (0.19 - 1.41)	0.198
Number of drugs						
Polypharmacy	1 (ref)	0.49 (0.24 - 1.03)	0.060	1 (ref)	0.61 (0.22 - 1.68)	0.336

* or an endocrinologist. NC, not computable. Results are expressed as odds ratio (OR) and (95% confidence interval) for categorical variables and as adjusted average standard error for continuous variables. Statistical analysis of categorical outcomes conducted using logistic regression and for continuous outcomes using ANOVA adjusting on sex (male, female), age (per 5-year increase), marital status (living alone, living in couple), education (high, middle, low), born in Switzerland (yes, no), alcohol consumption (yes, no), smoking (never, former, current), BMI categories (normal, overweight, obese), currently employed (yes, no), presenting with hypertension (yes, no), and health insurance franchise (low, medium, high). Inverse probability weighting conducted to consider excluded participants.

P69

Dissecting the obesity paradox in heart failure with preserved or reduced ejection fraction

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Introduction: Obesity is a risk factor for incident heart failure, but excess weight is associated with lower mortality in patients with established heart failure. This "obesity paradox" could be explained by favourable counter regulations of the adipose tissue, or by confounding, obese patients being in general younger and having fewer co-morbidities.

We aimed to determine if body mass index (BMI) is associated with lower mortality after extensive adjustment for confounding factors in patients with acute heart failure, and to assess if this relation differs for patients with reduced (HFrEF) or preserved (HFpEF) ejection fraction.

Methods: Prospective, observational study with two years follow-up, including consecutive patients hospitalized for acute heart failure. Two years hazard of mortality associated with BMI was assessed in a multivariable COX proportional hazard model, in the whole population and separately for HFrEF and HFpEF.

Results: 957 patients (mean age 76 years, 41% women) were included. Five hundred (47%) had HFrEF and 443 (53 %) HFpEF. Four hundred (39%) were in the normoweight, 301 (30%) in the overweight, and 256 (25%) in the obese category. Corresponding mortality was 37 %, 26 % and 22%. Unadjusted HR for BMI was 0.96 (95% CI 0.94-0.98). After adjustment for age, sex,

atrial fibrillation, diabetes, chronic obstructive pulmonary disease, chronic anaemia, hypertension, glomerular filtration rate, and NT-proBNP, HR was 0.99 (95% CI 0.96-1.01) in the whole population, 1.01 (95% CI 0.96-1.06) in HFrEF, and 0.96 (95% CI 0.93-0.99) in HFpEF.

Conclusions: Excess weight is associated with a better survival in patients with acute heart failure, but this advantage disappears after adjustment for confounding factors in the whole population and in patients with HFrEF. Better survival persists for patients with HFpEF, implying that the relation between excess weight and survival differs according to the phenotype of heart failure. The interplay between adipose tissue and HFpEF should be further explored, considering the implications for overweight management in heart failure.

P70

Epidemiology of respiratory infections revealed by multiplex PCR in a rural Part of Switzerland, 2022-2024

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Introduction: Respiratory infections are very common and usually associated with non-specific symptoms. This study aimed to describe the microbial etiology of respiratory infections in adults admitted to the emergency department in a rural part of the canton of Bern.

Methods: Conducted from January 2022 to December 2024, this retrospective study enrolled all patients admitted to the emergency department with respiratory symptoms. We analyzed nasopharyngeal samples using the BIOFIRE® FILMARRAY® Respiratory Panel.

Results: Among the 5786 respiratory samples studied, 2206 (38%) test were positive and mixed detection rates was 9 %(n = 196). SARS-CoV-2 was the most incriminated virus (39.0%, n = 860), Rhinoviruses were detected second most common (22.0%, n = 486). Followed by Influenza-viruses (14.3%), RSV (5.3%), Parainfluenza-viruses (5.0%), Coronaviruses other than SARS-CoV-2 (4.7%), M. pneumoniae (4%) and hum. Metapneumovirus (MPV) (3.7%). During the study period the occurrence of SARS-CoV-2 decreased significantly (22.9%(2022) to 10.4% (2024), p <0.005). However, Detection of M. pneumoniae and Metapneumovirus increased significantly during the same period (0% to 4% (p <0.005), respectively 0.9% to 2.2%(p <0.005)). M. pneumoniae, Influenza A and B viruses and SARS-CoV-2 (2023&2024) could primarily detected during fall and winter. RSV could be isolated only during wintertime, MPV and Coronaviruses other than SARS-CoV-2 during winter and spring, Rhinoviruses during summer and fall. M. pneumoniae was detected significantly more often in younger male patients and Influenza-viruses were found more frequently in older patients (p <0.005).

Conclusion: Our results showed that the different pathogens appear at different times of the year and affect different patient groups. In this case, knowledge of the epidemiology of respiratory infection is important for the treatment of patient both in general practice and in hospital emergency departments.

P72

Iodine status in the population of Lausanne: prevalence and associated factors. A cross-sectional study

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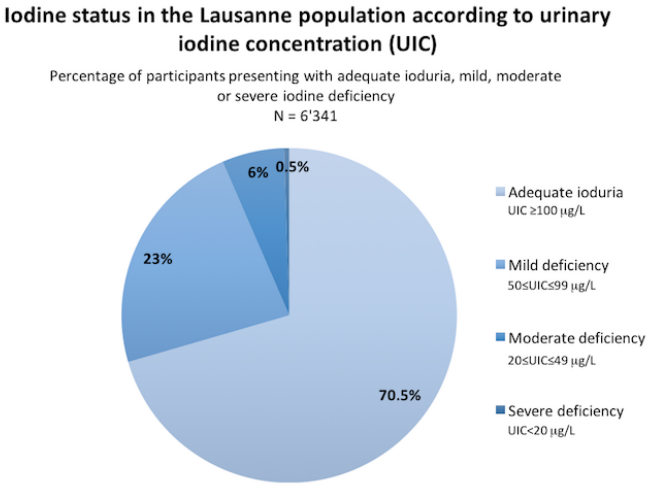
Purpose: to assess iodine status and factors associated with iodine deficiency using data from the baseline assessment of the CoLaus|PsyCoLaus study, a prospective, population-based study aimed at assessing the prevalence and determinants of cardiovascular disease in the city of Lausanne, Switzerland.

Methods: Cross-sectional study conducted between 2003 and 2006 including 6'341 community dwellers aged 35-75 years old. Iodine status was assessed using urinary iodine concentration (UIC) from spot urine samples after an overnight fast. Iodine status was considered as adequate for UIC ≥100 µg/L, mild deficiency if 50≤UIC≤99 µg/L, moderate deficiency if 20≤UIC≤49 µg/L, and severe deficiency if UIC<20 µg/L. A further categorization into adequate and deficient (UIC<100 µg/L) was performed. Other covariates included self-filled questionnaires, body weight and height measurement and blood pressure.

Results: Overall, 70.5% of the participants presented with adequate ioduria, 23.0% with mild, 6.0% with moderate and 0.5% with severe iodine deficiency. Participants with iodine deficiency were more frequently female, of older age, not working or presenting with hypertension. Conversely, adequate iodine status was associated with higher BMI, being a smoker and taking thyroid supplements. After multivariable analysis, being a woman, odds ratio (95% confidence interval): 1.64 (1.45; 1.85), hypertension 1.41 (1.24; 1.60), and increasing age (p for trend <0.001) were associated with iodine deficiency. Conversely, increasing body mass index (p for trend <0.001), current smoking 0.86 (0.75; 0.99) and thyroid hormone supplementation 0.48 (0.33; 0.70) were negatively associated with iodine deficiency. A positive correlation was found between UIC and urinary sodium concentration: 0.277, p <0.001.

Conclusion: Approximately one third of participants presented with iodine deficiency. Factors such as older age, being a woman or presenting with hypertension are associated with iodine deficiency, making those groups the main targets for further preventive interventions.



P73

Magnesium supplements do not improve sleep quality or quantity, restless leg syndrome and night cramps. A population-based observational analysis

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Introduction: Many individuals turn to supplements like magnesium, believing them to offer a natural way to improve sleep quality or alleviate night cramps. Yet, research on magnesium's effects has produced controversial and inconsistent results. We assessed the relationships between magnesium supplementation and both subjective and objective sleep parameters, including night cramps. Additionally, we conducted a Mendelian randomization study to assess the association between genetically determined magnesium levels and night cramps.

Methods: Data from three follow-ups of the population based CoLaus|PsyColaus cohort: 2009-12 (first), 2014-17 (second) and 2018-21 (third). Magnesium supplement use was self-reported, and participants were categorized as users and non-users. Subjective sleep parameters were measured through Epworth Sleepiness Scale, Pittsburgh sleep quality index, and Berlin questionnaire. Objective sleep parameters were measured with polysomnography in the 2009-2012 survey. A polygenic risk score (PRS) including five SNPs related to magnesium levels was computed.

Results: 3887 (52.6% women, 57.2±10.4 years, 4.5% magnesium users), 1916 (49.7% women, 60.8±9.4 years, 7.88% users) and 1561 (51.2% women, 63.1±8.9 years, 7.5% users) participants took part in the first, second, and third follow-ups, respectively. The multivariable-adjusted analyses indicated that magnesium users had a consistently higher likelihood of experiencing night cramps, with a trend towards poorer sleep quality and an increased likelihood of restless leg syndrome (table 1). However, both bivariate and multivariable-adjusted analyses of polysomnography results revealed no significant differences (table 2). The bivariate and multivariate analyses of the magnesium PRS between participants with and without cramps showed no significant differences during either the first or second follow-ups: multivariable-adjusted average standard error 3.99±0.03 and 3.97±0.14 for absence and presence of cramps, respectively, p = 0.848, for the first follow-up and 3.93 ± 0.05 and 3.86 ± 0.20. p = 0.709, for the second follow-up.

Conclusion: We found no consistent association between magnesium supplementation and both subjective and objective sleep parameters, restless leg syndrome, or night cramps. However, given the observational nature of this study, a randomized, double-blind, placebo-controlled trial would be valuable to validate our findings.

Table 1: multivariable-adjusted associations between magnesium supplement use and self-reported sleep quality, by study period, CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	First (2009-2012)			Second (2014-2017)			Third (2018-2021)		
	No	Yes	P-value	No	Yes	P-value	No	Yes	P-value
Pittsburgh global score	5.0 ± 0.1	5.4 ± 0.2	0.034	4.8 ± 0.1	5.2 ± 0.2	0.066	4.6 ± 0.1	5.1 ± 0.3	0.050
PSQI >5	1 (ref)	1.28 (0.92 - 1.79)	0.144	1 (ref)	1.25 (0.86 - 1.83)	0.241	1 (ref)	1.40 (0.91 - 2.14)	0.125
Epworth score	5.8 ± 0.1	5.8 ± 0.3	0.871	5.6 ± 0.1	5.8 ± 0.3	0.703	5.7 ± 0.1	5.4 ± 0.3	0.472
Positive Epworth	1 (ref)	0.98 (0.57 - 1.67)	0.938	1 (ref)	1.42 (0.83 - 2.43)	0.205	1 (ref)	0.90 (0.43 - 1.88)	0.783
High risk of sleep apnoea	1 (ref)	1.17 (0.78 - 1.77)	0.452	1 (ref)	1.85 (1.15 - 2.97)	0.011	1 (ref)	1.47 (0.81 - 2.66)	0.208
STOP score	2.1 ± 0.1	2.1 ± 0.1	0.444	2.1 ± 0.1	2.1 ± 0.1	0.785	2.0 ± 0.1	2.1 ± 0.1	0.404
Positive STOP category	1 (ref)	1.02 (0.68 - 1.53)	0.932	1 (ref)	1.19 (0.74 - 1.92)	0.464	1 (ref)	1.19 (0.72 - 1.98)	0.496
Restless leg syndrome	1 (ref)	2.06 (1.42 - 2.99)	<0.001	1 (ref)	1.23 (0.64 - 2.39)	0.532	1 (ref)	1.62 (0.98 - 2.66)	0.058
Night cramps	1 (ref)	4.32 (2.75 - 6.78)	<0.001	1 (ref)	2.50 (1.37 - 4.57)	0.003	-	-	-

PSQI, Pittsburgh Sleep Quality Index. Results are expressed as odds ratio and (95% confidence interval) for categorical variables and as multivariable-adjusted mean ±standard error. Statistical analysis using logistic regression for categorical variables and analysis of variance for continuous variables. Multivariable models adjusted for gender (man, woman), age (continuous), educational level (low, middle, high), smoking categories (never, former, current), born in Switzerland (yes, no), BMI categories (normal, overweight, obese), alcohol consumption (yes, no), hypertension (yes, no), diabetes (yes, no), other vitamin/mineral supplements (yes, no) and presence of sleep medication (yes, no).

Bivariate and multivariable analysis of the association between magnesium supplement use and objectively assessed sleep, HypnoLaus study, Lausanne, Switzerland

	Non-users	Users	P-value	Non-users	Users	P-value
Total sleep time (minutes)	401 ± 72	406 ± 71	0.482	401 ± 2	407 ± 7	0.326
Sleep onset (minutes)	11 [5 - 21]	10 [4 - 22]	§ 0.667	18.0 ± 0.5	14.2 ± 2.2	0.093
Sleep efficiency (%)	84.7 ± 10.8	83.4 ± 11.5	0.214	84.6 ± 0.2	84.5 ± 0.9	0.880
Number of awakenings	22 [16 - 31]	23 [17 - 34]	§ 0.162	24.9 ± 0.3	26.4 ± 1.2	0.231
% of sleep time spent in						
Stage 1 sleep	10.2 [7.2 - 14.7]	10.1 [7.4 - 16.0]	§ 0.519	11.9 ± 0.2	12.4 ± 0.6	0.453
Stage 2 sleep	45.6 [39.7 - 52.3]	46.2 [39.7 - 55.5]	§ 0.363	46.5 ± 0.2	46.7 ± 0.9	0.784
Slow wave sleep	19.3 [14.1 - 25.0]	19.2 [12.9 - 24.5]	§ 0.244	19.7 ± 0.2	19.3 ± 0.8	0.584
REM sleep	22.4 [18.2 - 26.0]	20.9 [16.2 - 25.7]	§ 0.096	21.9 ± 0.1	21.5 ± 0.6	0.525
Periodic limb movements						
Number	0 [0 - 19]	2 [0 - 20]	§ 0.743	17.5 ± 0.8	16.2 ± 3.3	0.692
Index	0 [0 - 2.9]	0.4 [0 - 2.9]	§ 0.819	2.6 ± 0.1	2.2 ± 0.5	0.377

For bivariate analysis, results are expressed as average ± standard deviation or as median [interquartile range] and between-group comparisons performed using student's t-test or Kruskal-Wallis test (§). For multivariable analysis, results are expressed as adjusted mean ±standard error, and comparisons were performed using analysis of variance adjusting for gender (man, woman), age (continuous), educational level (low, middle, high), smoking categories (never, former, current), born in Switzerland (yes, no), BMI categories (normal, overweight, obese), alcohol consumption (yes, no), hypertension (yes, no), diabetes (yes, no), other vitamin/mineral supplements (yes, no) and presence of sleep medication (yes, no).

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Patient-Physician Sex Interactions and Their Impact on Cardiovascular Outcomes

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Introduction: Emerging evidence suggests that patient-physician sex concordance may influence clinical outcomes. While such associations have been explored in other countries, data from Switzerland are currently lacking. In this study, we aimed to assess the effects of patient-physician sex combinations on total mortality, cardiovascular disease (CVD) mortality, and CVD events.

Methods: Data were collected from 2018-2021 in Lausanne, Switzerland (CoLaus|PsyCoLaus study), including 2824 patients and 496 physicians. Cox regression and Fine-Gray competing risk models were used as a first step. The second step used Mixed-effects Weibull proportional hazards regression to account for clustering by physician. All hazard ratios (HR) were calculated using the Male Physician-Male Patient group as the reference.

Results: The Cox regression and Fine-Gray competing risk models showed no significant differences across all physician-patient sex combinations for total mortality, CVD mortality, or any CVD events (p >0.05 for all comparisons, Table 1). In the Mixed-effects Weibull proportional hazards regression analysis clustering by physician, a significant reduction in total mortality was observed for female patients treated by male physicians (HR = 0.47, 95% CI: 0.25–0.88, p = 0.019), and a near-significant reduction in total mortality was also observed for female patients treated by female physicians (HR = 0.44, 95% CI: 0.19–1.02, p = 0.056). No significant associations were observed in any CVD event across all physician-patient sex combinations (p >0.05 for all comparisons, Table 2).

Conclusion: We found no association between patient-physician sex combinations and the incidence of total CVD events or total mortality. Notably, female patients showed a lower total mortality than male patients, and this association appears to be independent of physician sex.

Table 1. Cox regression and Fine-Gray model analysis of physician-patient sex interactions on mortality and cardiovascular events

Physician sex	Male			Female			
Patient sex	Male	Female		Male		Female	
	HR (95% CI)	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Total mortality	1 (Reference)	0.60 (0.33 - 1.08)	0.090	1.5 (0.71 - 3.19)	0.289	0.54 (0.24 - 1.24)	0.148
CVD mortality	1 (Reference)	0.75 (0.26 - 2.17)	0.596	0.36 (0.02 - 6.52)	0.491	0.83 (0.19 - 3.53)	0.800
Any CVD event	1 (Reference)	0.82 (0.51 - 1.32)	0.414	0.74 (0.33 - 1.68)	0.473	0.55 (0.26 - 1.20)	0.133

Table 2. Mixed-effects Weibull proportional hazards regression analysis of physician-patient sex interactions on mortality and cardiovascular events

Physician sex	Male			Female			
Patient sex	Male	Female		Male		Female	
	HR (95% CI)	HR (95% CI)	P-value	HR (95% CI)	P-value	HR (95% CI)	P-value
Total mortality	1 (Reference)	0.47 (0.25 - 0.88)	0.019	1.42 (0.65 - 3.07)	0.375	0.44 (0.19 - 1.02)	0.056
Any CVD event	1 (Reference)	0.80 (0.49 - 1.30)	0.371	0.73 (0.32 - 1.66)	0.451	0.53 (0.25 - 1.16)	0.111

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People with higher body mass index present with higher sleep variability. Results from the CoLaus|PsyCoLaus study

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Background: sleep variability has been suggested to be associated with diabetes, by increasing obesity levels. We aimed to assess the associations between sleep variability, and body mass index (BMI) in a Swiss population-based sample.

Methods: data from the CoLaus|PsyCoLaus study for survey periods 2014-2017 (first, N = 2571, 61.9±9.9 years, 53.4% female) and 2018-2021 (second, N = 1908, 65.1±9.5 years, 53.8% female). Sleep and time of going to bed were assessed using accelerometry or self-reported data by ecological momentary assessment for one week. Sleep duration variability was determined by its standard deviations (SD), coefficient of variation (CV), and range. Going to bed variability was assessed by range. BMI was categorized as normal, overweight, and obese.

Results: for the first period, no participants with obesity presented with higher variability in sleep duration for both accelerometry and EMA, while no difference was found regarding variation in time of going to bed (table 1). Conversely, for the second period, no difference was found regarding the variability of sleep duration between BMI categories, while the range of the time of going to bed increased with the BMI category (table 2).

Conclusion: Participants with obesity tend to present with a higher variability regarding sleep duration or onset, but results differ according to the study period.

Table 1: association between sleep variability and body mass index, first (2014-2017) survey of the CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	Bivariate				Multivariable			
	Normal	Overweight	Obese	P-value	Normal	Overweight	Obese	P-value
Sleep duration								
Accelerometry, N	865	815	362		865	815	362	
Average	409 ± 105	408 ± 100	402 ± 97	0.450	408 ± 3	409 ± 3	401 ± 5	0.352
Variability, SD	56.2 ± 32.7	57.5 ± 32.3	61.2 ± 35.4	0.024	55.8 ± 1	57.7 ± 1	61.4 ± 1.5	0.011
Variability, CV	0.18 ± 0.31	0.17 ± 0.26	0.18 ± 0.24	0.822	0.18 ± 0.01	0.17 ± 0.01	0.18 ± 0.01	0.843
Variability, range	156 ± 84	161 ± 86	170 ± 90	0.012	155 ± 3	162 ± 3	171 ± 4	0.004
EMA, N	287	265	140		287	265	140	
Average	412 ± 53	396 ± 67	376 ± 80	<0.001	411±4	397±4	377±6	<0.001
Variability, SD	53.2 ± 34.2	53 ± 38.1	63.8 ± 48	0.017	52.4±2.3	53.3±2.5	64.5±3.4	0.009
Variability, CV	0.11 ± 283	0.15 ± 0.15	0.18 ± 0.19	0.007	0.14±0.01	0.15±0.01	0.19±0.01	0.003
Variability, range	139 ± 93	132 ± 97	161 ± 124	0.024	137±6	133±6	161±9	0.025
Time going to bed (range)								
Accelerometry	100 ± 50	100 ± 51	105 ± 55	0.216	100 ± 2	100 ± 2	105 ± 2	0.146
EMA	107 ± 77	105 ± 73	116 ± 107	0.453	104 ± 5	108 ± 5	118 ± 7	0.277

CV, coefficient of variation; EMA, ecological momentary assessment; SD, standard deviation. Results are expressed as average ± standard deviation for bivariate analysis and as multivariable-adjusted average ± standard deviation for multivariable analysis. Analyses performed using ANOVA. Multivariable analysis adjusted on sex (male, female), age (continuous), education (low, medium, high) and smoking (never, former, current).

Table 2: association between sleep variability and body mass index, second (2018-2021) survey of the CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	Bivariate				Multivariable			
	Normal	Overweight	Obese	P-value	Normal	Overweight	Obese	P-value
Sleep duration (minutes)								
Accelerometry, N	826	741	341		826	741	341	
Average	403 ± 54	395 ± 60	392 ± 63	0.002	403 ± 2	395 ± 2	392 ± 3	0.007
Variability, SD	61 ± 33	61 ± 32	62 ± 33	0.735	60 ± 1	62 ± 1	62 ± 2	0.465
Variability, CV	0.16 ± 0.09	0.16 ± 0.1	0.17 ± 0.11	0.149	0.15 ± 0.01	0.16 ± 0.01	0.17 ± 0.01	0.072
Variability, range	172 ± 96	174 ± 95	176 ± 95	0.809	171 ± 3	175 ± 4	176 ± 5	0.549
EMA, N	327	313	158		327	313	158	
Average	401 ± 61	399 ± 62	396 ± 73	0.719	400 ± 4	399 ± 4	397 ± 5	0.890
Variability, SD	52 ± 35	51 ± 34	52 ± 37	0.873	51 ± 2	51 ± 2	52 ± 3	0.958
Variability, CV	0.14 ± 0.14	0.13 ± 0.11	0.14 ± 0.11	0.699	0.14 ± 0.01	0.14 ± 0.01	0.14 ± 0.01	0.856
Variability, range	131 ± 88	125 ± 87	136 ± 102	0.432	130 ± 5	127 ± 5	137 ± 7	0.504
Time going to bed (range)								
Accelerometry, minutes	96 ± 45	100 ± 47	101 ± 56	0.135	95 ± 2	101 ± 2	102 ± 3	0.022
EMA, minutes	100 ± 83	99 ± 86	120 ± 104	0.035	99 ± 5	101 ± 5	121 ± 7	0.026

CV, coefficient of variation; EMA, ecological momentary assessment; SD, standard deviation. Results are expressed as average ± standard deviation for bivariate analysis and as multivariable-adjusted average ± standard deviation for multivariable analysis. Analyses performed using ANOVA. Multivariable analysis adjusted on sex (male, female), age (continuous), education (low, medium, high) and smoking (never, former, current).

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Prevalence and effect of weight loss attempts: cross-sectional and prospective studies

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Introduction: According to the Swiss Federal Statistical Office, obesity rates in Switzerland have doubled over the past 30 years (1). Repeated weight loss attempts often result in weight fluctuations, known as weight cycling or yo-yo dieting, with possible deleterious effects such as weight gain (2). We evaluated the prevalence and characteristics of individuals attempting weight loss and examined the relationship between the number of weight loss attempts and weight status and weight change over a 10-year period.

Methods: Cross-sectional prospective studies were conducted using data from the CoLaus|PsyCoLaus study in Lausanne, Switzerland. Three surveys were included: 2009–2012 (first), 2014–2017 (second), and 2018–2021 (third). Participants were divided into three groups based on the number of weight loss attempts: 1–5, 6–10, and 11 or more. Prospective weight changes were assessed over follow-up periods of 5 years (first to second and second to third) and 10 years (first to third).

Results: Participant characteristics by weight loss attempt categories are shown in Table 1. Most had fewer than 6 attempts, while 25 (2.7%) reported 11 or more. Differences were observed in gender, living alone, alcohol use, and overweight history. Table 2 illustrates 5- and 10-year weight changes by number of weight loss attempts. Most participants had weight changes <5 kg. No significant differences in 5-year weight change were observed based on weight loss attempts. However, an inverse relationship was noted: participants with 11+ attempts had greater average weight loss than those with 1–5 attempts (Table 2).

Conclusion: While cross-sectional data suggests a positive association between the number of weight loss attempts and both weight and BMI, it does not seem to adversely affect subsequent weight loss.

Table 1. Characteristics of participants according to the number of weight loss attempts at first and second follow-ups, CoLaus|PsyCoLaus study, Lausanne, Switzerland

	First follow-up (2009-12)				Second follow-up (2014-17)		
	1-5	6-10	11+	P-value	1-5	6-10	11+
N	809	102	25		429	64	23
Age (years)	56.8 ± 10.3	55.4 ± 9.1	57.9 ± 10.6	0.335	60.4 ± 9.2	59.7 ± 9.0	57.0 ± 8.8
Female (%)	564 (69.7)	80 (78.4)	23 (92.0)	0.013	292 (68.1)	53 (82.8)	19 (82.6)
Born in Switzerland (%)	535 (66.1)	64 (62.8)	11 (44.0)	0.063	260 (60.6)	33 (51.6)	19 (82.6)
Educational level (%)				0.495			
High	192 (23.7)	17 (16.7)	5 (20.0)		99 (23.1)	12 (18.8)	6 (26.1)
Middle	240 (29.7)	32 (31.4)	6 (24.0)		130 (30.3)	17 (26.6)	6 (26.1)
Low	377 (46.6)	53 (52.0)	14 (56.0)		200 (46.6)	35 (54.7)	11 (47.8)
Living alone (%)	360 (44.5)	59 (57.8)	12 (48.0)	0.038	169 (39.4)	31 (48.4)	4 (17.4)
Alcohol drinker (%)	593 (73.3)	61 (59.8)	18 (72.0)	0.017	328 (76.5)	38 (59.4)	15 (65.2)
Smoking status (%)				0.453			
Never	303 (37.5)	38 (37.3)	7 (28.0)		165 (38.5)	20 (31.3)	11 (47.8)
Former	365 (45.1)	40 (39.2)	12 (48.0)		194 (45.2)	34 (53.1)	10 (43.5)
Current	141 (17.4)	24 (23.5)	6 (24.0)		70 (16.3)	10 (15.6)	2 (8.7)
Weight (kg)	80.9 ± 16.0	83.6 ± 18.6	88.2 ± 22.6	0.036	81.7 ± 15.2	83.1 ± 15.2	84.3 ± 17.7
Body mass index (kg/m^2)	29.0 ± 4.7	30.7 ± 5.8	32.9 ± 8.4	<0.001	29.3 ± 4.6	30.5 ± 5.0	31.5 ± 6.2
BMI categories (%)				0.003			
Normal	164 (20.3)	17 (16.7)	5 (20.0)		65 (15.2)	8 (12.5)	5 (21.7)
Overweight	368 (45.5)	35 (34.3)	5 (20.0)		208 (48.5)	26 (40.6)	5 (21.7)
Obese	277 (34.2)	50 (49.0)	15 (60.0)		156 (36.4)	30 (46.9)	13 (56.5)
History of overweight (%)	[a] 474 (59.9)	80 (78.4)	20 (80.0)	<0.001	253 (62.8)	48 (76.2)	17 (77.3)
Hypertension (%)	360 (44.6)	46 (45.1)	5 (21.7)	0.092	189 (44.1)	32 (50.0)	11 (47.8)
Diabetes (%)	112 (13.9)	16 (15.7)	3 (12.5)	0.865	43 (10.0)	11 (17.2)	1 (4.4)
Menopause (%)	389 (70.3)	53 (68.8)	16 (69.6)	0.962	246 (86.3)	43 (81.1)	12 (66.7)

Table 2. Weight changes at 5 and 10-years according to the number of weight loss attempts at first and second follow-ups, CoLaus|PsyCoLaus study, Lausanne, Switzerland.

	First follow-up (2009-12)			
	1-5	6-10	11+	P-value
N	668	90	20	
5-year weight change (%)				0.241
Lost 5+ kg	78 (11.7)	18 (20.0)	3 (15.0)	
Change <5 kg	463 (69.4)	54 (60.0)	13 (65.0)	
Gained 5+ kg	127 (19.0)	18 (20.0)	4 (20.0)	
5-year weight change (kg)				
Bivariate	0.8 ± 5.8	-0.2 ± 8.9	1.2 ± 5.2	0.331
Multivariable	0.7 ± 0.2	-0.4 ± 0.7	1.3 ± 1.4	0.241
N	553	65	17	
10-year weight change (%)				0.033
Lost 5+ kg	104 (18.8)	21 (32.3)	2 (11.8)	
Change <5 kg	299 (54.11)	28 (43.1)	13 (76.5)	
Gained 5+ kg	150 (27.1)	16 (24.6)	2 (11.8)	
10-year weight change (kg)				
Bivariate	0.8 ± 7.3	-1.3 ± 10.5	-2.1 ± 7.1	0.047
Multivariable	0.8 ± 0.3	-1.5 ± 1.0	-2.1 ± 1.9	0.035

P77

Sex differences in bacterial meningitis and human development - a systematic review and meta-analysis

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Introduction: Individual studies of bacterial meningitis have reported unequal proportions of male and female patients. However, sex-based differences in susceptibility or outcome have not been systematically investigated in bacterial meningitis. We aimed to describe global sex-specific proportions and case-fatality ratios of bacterial meningitis, and to explore their associations with socioeconomic factors.

Methods: Google Scholar and MEDLINE were searched in January 2022 using the terms "bacterial meningitis" and "mortality". Studies with their mean observation period after the year 1940 and reporting ≥10 community-acquired bacterial meningitis patients with their survival status were included, irrespective of the participants' age. Studies that selected participants by specific risk factors, reported specific pathogens only, or had >10% missing outcomes were disregarded. Data were extracted by one researcher and validated by a second researcher. The main outcomes sex-specific proportions and case-fatality ratios were analysed using random-effects models. Associations with Human Development Index and Gender Inequality Index were explored using meta-regression.

Results: In this meta-analysis with meta-regression, from 371 studies with 157,656 cases, 217 (58%) reported the patients' sex and 41 (11%) reported sex-specific outcomes. Proportion of males was 58% (95% confidence interval [CI] 57–59%, prediction interval [PI] 45–71%). Case-fatality ratios were slightly higher in females (male-to-female fatality ratio, 0.89, 95% CI 0.78–1.01, PI 0.53–1.49). The size of the male proportion was strongly associated with Human Development Index (per index point, -0.64, 95% CI -0.88 to -0.40; R^2 16%; P <0.001) and Human Development Index (per index point, 0.61, 95% CI 0.39 to 0.83; R^2 19%; P <0.001). Sex-specific case-fatality ratios were weakly associated with Human Development Index (per index point, 0.53, 95% CI -0.19 to 1.25; R^2 2%; P = 0.15) and Gender Inequality Index (per index point, -0.58, 95% CI -1.55 to 0.39; R^2 7%; P = 0.24).

Conclusion: The limited sex-specific reporting underscores the need for greater attention to sex/gender in clinical trials and observational studies. Based on worldwide reporting from the last 80 years, indicators of human development and gender inequality are associated with sex-based disparities and case-fatality ratios in bacterial meningitis.

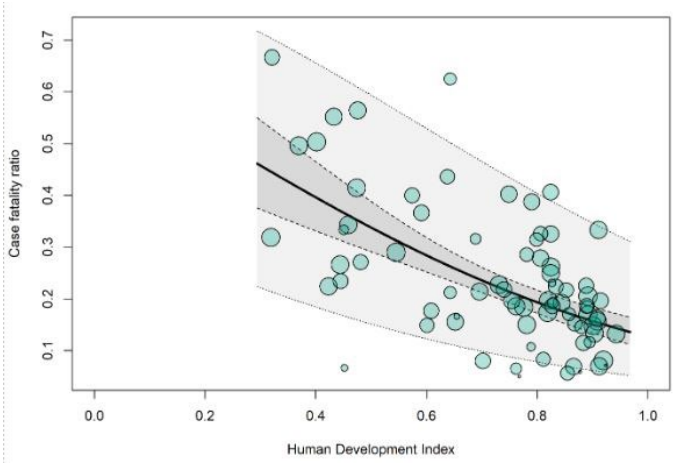

Figure. Association of case fatality ratio and Human Development Index in adults.

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Sleep variability is not associated with inflammatory levels. Results from the CoLaus|PsyCoLaus study

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Background: sleep variability has been suggested to be associated with diabetes, by increasing inflammatory levels. We aimed to assess the associations between sleep variability, and a panel of inflammatory markers in a Swiss population-based sample.

Methods: data from the CoLaus|PsyCoLaus study for the survey period 2014-2017 (N = 2571, 61.9±9.9 years, 53.4% female). Sleep and time of going to bed were assessed using accelerometry or self-reported data by ecological momentary assessment for one week. Sleep duration variability was determined by its standard deviations (SD), coefficient of variation (CV), and range. Going to bed variability was assessed by range. Inflammatory markers included

Results: Although increased sleep variability tended to increase CRP and TNF-β levels, bivariate Spearman analysis showed no statistically significant association between all metrics of sleep variability and inflammatory markers (table and figure)

Conclusion: we found no significant association between sleep variability and inflammatory markers. Our results do not provide evidence that the increase in diabetes due to sleep variability is mediated to changes in inflammatory markers.

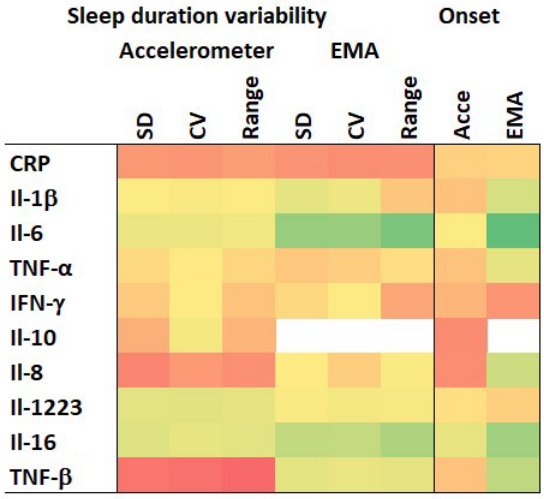

Figure: heatmap of the associations between sleep variability and inflammatory markers

	Sleep duration variability						Range of onset	
	Accelerometer			EMA				
	SD	CV	Range	SD	CV	Range	Acce	EMA
CRP	0.030	0.031	0.027	0.032	0.035	0.035	0.003	0.000
	0.135	0.129	0.185	0.421	0.380	0.381	0.900	0.993
Il-1β	-0.014	-0.016	-0.014	-0.038	-0.029	0.007	0.009	-0.057
	0.625	0.592	0.641	0.601	0.691	0.920	0.769	0.433
Il-6	-0.033	-0.032	-0.027	-0.126	-0.124	-0.158	-0.015	-0.186
	0.220	0.241	0.324	0.062	0.067	0.017	0.586	0.005
TNF-α	-0.002	-0.010	-0.001	0.007	0.004	-0.004	0.009	-0.039
	0.923	0.680	0.975	0.904	0.947	0.934	0.716	0.472
IFN-γ	0.005	-0.012	0.009	-0.002	-0.013	0.023	0.015	0.032
	0.827	0.623	0.716	0.978	0.813	0.677	0.536	0.567
Il-10	0.018	-0.022	0.015	.	.	.	0.036	.
	0.636	0.572	0.693	.	.	.	0.348	.
Il-8	0.039	0.029	0.034	-0.011	0.004	-0.016	0.036	-0.066
	0.100	0.229	0.152	0.845	0.949	0.771	0.139	0.222
Il-1223	-0.042	-0.043	-0.040	-0.016	-0.023	-0.021	-0.005	0.003
	0.081	0.081	0.098	0.775	0.679	0.700	0.831	0.958
Il-16	-0.046	-0.038	-0.042	-0.078	-0.077	-0.103	-0.036	-0.116
	0.054	0.117	0.082	0.151	0.159	0.055	0.136	0.031
TNF-β	0.048	0.050	0.053	-0.041	-0.035	-0.039	0.009	-0.082
	0.081	0.073	0.050	0.548	0.606	0.560	0.749	0.219

Table: Spearman correlation coefficients (upper row) and corresponding p-values (lower row)

P80

Trajectories of physical activity and cardiovascular risk factors: prospective study

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Introduction: Physical activity (PA) is a protective factor against cardiovascular disease (CVD). Whether changes in PA lead to different incidences of CVD risk factors has seldom been studied. We assessed the effect of self-reported and objectively assessed PA on CVD risk factors, including body weight and body mass index (BMI)

Methods: Data from the CoLaus|PsyCoLaus study, a prospective, population-based study in Lausanne, Switzerland, for periods 2009-2012 and 2014-2017 (self-reported PA) and 2014-2017 and 2018-2021 (objectively assessed PA). Objective PA trajectories were assessed by a wrist-worn triaxial accelerometer. Two different software (GENEActive and GGIR) assessed objective PA from raw accelerometry data. PA trajectories were further categorized as increasing, maintaining, or decreasing.

Results: self-reported PA was available for 1856 participants (53.2% women, 55.8±9.4 years). Participants who became sedentary lost more weight, while no association was found between PA trajectories and changes in blood pressure (BP) or markers of diabetes (table 1). Objectively assessed PA using GENEActive software was available for 1506 participants (52.3% women, 61.5±9.4 years). Participants who decreased their PA gained weight and increased their waist circumference, while those who increased their PA lost weight; no association was found between PA trajectories and changes in BP or diabetes markers. Objectively assessed PA using GGIR software was available for 1447 participants (51.5% women, 61.6±9.4 years), and no associations were found with changes in BP or markers of diabetes (table 2).

Conclusions: in this prospective, population-based study, participants who decreased their PA level had higher weight gain, but results differed according to the PA assessment method. No association was found between PA trajectories and changes in BP or fasting plasma glucose.

Table 1: multivariable analysis of the changes in cardiovascular risk factors according to changes in reported physical activity levels, CoLaus study, Lausanne, Switzerland.

	Always sedentary	Became sedentary	Became active	Always active	p-value *
Number	625	295	333	554	
Anthropometry change					
Weight (kg)	-0.5 ± 0.2	-0.9 ± 0.3	0 ± 0.3	0.1 ± 0.2	0.008
Increase in BMI category	1 (ref)	1.09 (0.67 - 1.76)	0.99 (0.61 - 1.59)	1.20 (0.80 - 1.80)	0.495
Increase in BMI category, wt	1 (ref)	1.02 (0.61 - 1.72)	1.03 (0.61 - 1.73)	1.31 (0.84 - 2.05)	0.263
Blood pressure change					
SBP (mm Hg)	3.2 ± 0.6	1.8 ± 0.8	2.9 ± 0.8	3.6 ± 0.6	0.320
DBP (mm Hg)	0.1 ± 0.4	-0.3 ± 0.5	0.9 ± 0.5	0.8 ± 0.4	0.191
Incidence of hypertension §	1 (ref)	0.88 (0.55 - 1.41)	1.11 (0.71 - 1.74)	0.98 (0.66 - 1.45)	0.796
Incidence of hypertension, wt §	1 (ref)	0.98 (0.60 - 1.61)	1.07 (0.66 - 1.73)	0.97 (0.64 - 1.46)	0.985
Glucose parameters					
FPG (mmol/L)	0.13 ± 0.03	0.09 ± 0.04	0.18 ± 0.04	0.12 ± 0.03	0.383
HbA1c (mmol/mol)	-0.53 ± 0.14	-0.67 ± 0.2	-0.32 ± 0.18	-0.68 ± 0.14	0.437
Incidence of diabetes †	1 (ref)	1.21 (0.48 - 3.01)	0.69 (0.22 - 2.19)	0.91 (0.37 - 2.24)	0.585
Incidence of diabetes, wt †	1 (ref)	1.43 (0.56 - 3.65)	0.72 (0.20 - 2.60)	0.96 (0.37 - 2.50)	0.619

§ among participants without hypertension (N=1137); †, among participants without diabetes (N=1737); *, p-value for trend in the logistic regression models. BMI, body mass index; DBP, diastolic blood pressure; FPG, fasting plasma glucose; ref, reference; SBP, systolic blood pressure; wt, weighted. Results are expressed as odds ratio and (95% confidence intervals) using maintenance as reference group for categorical variables, and as average ± standard error for continuous variables. Between group comparisons performed using logistic regression for categorical variables and ANOVA for continuous variables. All models adjusted on gender, age, smoking categories, and educational level. Further adjustments on BMI categories and antihypertensive drug treatment for blood pressure parameters, and BMI categories and antidiabetic drug treatment for glucose parameters. For continuous variables, post-hoc analyses were performed by Dunnett's method using the "always sedentary" group as reference; a superscript indicates statistical significance: [a], $p<0.05$; [b], $p<0.01$; [c], $p<0.001$.

Table 2: multivariable analysis of the changes in cardiovascular risk factors according to changes in accelerometry-assessed physical activity, GGIR software analysis, CoLaus study, Lausanne, Switzerland.

	Decreased	No change	Improved	p-value *
Number	271	978	198	
Anthropometry change				
Weight (kg)	0.3 ± 0.3	-0.3 ± 0.2	-0.3 ± 0.4	0.270
Increase in BMI category	1.07 (0.67 - 1.71)	1 (ref)	0.72 (0.40 - 1.28)	0.243
Increase in BMI category, weighted	1.06 (0.66 - 1.71)	1 (ref)	0.75 (0.42 - 1.34)	0.314
Blood pressure change				
SBP (mm Hg)	3.1 ± 0.9	3.0 ± 0.5	3.2 ± 1.1	0.980
DBP (mm Hg)	1.1 ± 0.6	0.1 ± 0.3	0.5 ± 0.7	0.335
Incidence of hypertension §	1.00 (0.61 - 1.61)	1 (ref)	0.78 (0.46 - 1.34)	0.467
Incidence of hypertension, weighted §	1.02 (0.62 - 1.68)	1 (ref)	0.83 (0.50 - 1.39)	0.517
Glucose parameters				
FPG (mmol/L)	0.09 ± 0.05	0.09 ± 0.05	0.24 ± 0.06	0.069
HbA1c (mmol/mol)	-0.16 ± 0.22	-0.16 ± 0.22	-0.37 ± 0.25	0.525
Incidence of diabetes †	1.00 (0.38 - 2.59)	1 (ref)	1.07 (0.34 - 3.32)	0.916
Incidence of diabetes, weighted †	0.98 (0.38 - 2.48)	1 (ref)	0.90 (0.29 - 2.79)	0.904

§, among participants without hypertension (N=844); †, among participants without diabetes (N=1327); *, p-value for trend in the logistic regression models. BMI, body mass index; DBP, diastolic blood pressure; FPG, fasting plasma glucose; ref, reference; SBP, systolic blood pressure. Results are expressed as odds ratio and (95% confidence intervals) using maintenance as reference group for categorical variables, and as average ± standard error for continuous variables. Between group comparisons performed using logistic regression for categorical variables and ANOVA for continuous variables. All models adjusted on gender, age, smoking categories, and educational level. Further adjustments on BMI categories and antihypertensive drug treatment for blood pressure parameters, and BMI categories and antidiabetic drug treatment for glucose parameters. For continuous variables, post-hoc analyses were performed by Dunnett's method using the "no change" group as reference; a superscript indicates statistical significance: [a], $p<0.05$; [b], $p<0.01$; [c], $p<0.001$.

P81

Trends and outcomes of hospitalised children, adolescents and adults with cystic fibrosis: a Swiss nationwide cohort study

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Introduction: Advances in cystic fibrosis (CF) therapy over the past decade have improved survival, which is expected to influence comorbidity patterns and healthcare utilization. Given the paucity of recent data on hospitalisations with CF, we aimed to assess hospitalisation rates, characteristics and clinical outcomes of individuals with CF in Switzerland.

Methods: We conducted a nationwide cohort study using administrative Swiss hospital discharge data from 2012 to 2022. Hospitalisation incidence rates per 100,000 inhabitants were calculated. Hospital-associated outcomes and causes of hospitalisation were compared between patients with CF and a propensity score-matched non-CF inpatient population. All analyses were stratified by age groups.

Results: Among 9,428 hospitalisations with CF, highest hospitalisation rates were observed in infants (<1 year), followed by individuals aged 10 to 39 years. The leading cause of hospitalisation were infectious diseases. Compared to matched non-CF inpatients, individuals with CF had lower odds of in-hospital mortality (OR 0.64 [95% CI, 0.50 to 0.82]), intensive care unit (ICU) admission (OR 0.54 [95% CI, 0.47 to 0.61]), and intubation (OR 0.59 [95% CI, 0.52 to 0.69]). However, the 30-day readmission rate was higher (OR 1.67 [95% CI, 1.37 to 2.05]), and the ICU stays were prolonged by nearly 2 days (coefficient 1.81 [95% CI, 0.98 to 2.64]). There was no difference in total hospital length of stay (coefficient 0.17 [95% CI, -0.43 to 0.77]).

Conclusion: This nationwide cohort study found the highest hospitalisation rates in infants, followed by adolescents and young adults. Despite lower in-hospital mortality and ICU use compared to non-CF inpatients, the increased readmission rate highlights a substantial healthcare burden and underscores the need for ongoing improvements in CF care.

P82

Vitamin D supplements do not improve sleep quality or quantity. A population-based observational analysis

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Introduction: As sleep disorders and poor sleep quality become more prevalent in modern societies, their impact on both physical and mental health is increasingly evident. In response, many individuals have turned to vitamin supplements, believing them to be a natural method of enhancing sleep quality and achieving more restorative rest. However, current research remains inconclusive on whether vitamin D supplementation improves sleep parameters. We aimed to evaluate the associations between vitamin D supplementation and subjective/objective sleep parameters.

Methods: Data from three follow-ups of the population based CoLaus|PsyColaus cohort: 2009-12 (first), 2014-17 (second) and 2018-21 (third). Within each follow-up, vitamin D supplement use was reported by the participants, who were categorized as users and non-users. Subjective sleep parameters were measured through Epworth Sleepiness Scale, Pittsburgh sleep quality index, and Berlin questionnaire. Objective sleep parameters were measured with polysomnography in the 2009-2012 survey.

Results: 3887 (52.6% women, 57.2±10.4 years, 8.9% vitamin D users), 1916 (49.7% women, 60.8±9.4 years, 15% users) and 1561 (51.2% women, 63.1±8.9 years, 20% users) participants took part in the first, second, and third follow-ups, respectively. For subjective sleep, the bivariate analyses revealed no significant effect that persisted consistently across all three follow-ups. Similar results were obtained after multivariable-adjusted analyses, or after excluding participants taking sleep medicines. Regarding objective sleep parameters, the bivariate analyses showed that non-users had a better sleep efficiency, a lower number of awakenings and longer periods of REM sleep than users (Table). The multivariable-adjusted analyses showed no significant differences between the supplement user group and the non-user group, except for a quicker sleep onset and a higher number of awakenings among users.

Conclusion: Our analyses revealed no consistent association between vitamin D supplement use and both subjective and objective sleep parameters. Nevertheless, this study being observational research, it would be interesting to conduct a randomized, double-blind, placebo-controlled trial to confirm our findings.

	Non-users	Users	P-value	Non-users	Users	P-value
Total sleep time (minutes)	400 ± 71	409 ± 77	0.134	404 ± 2	404 ± 5	0.600
Sleep onset (minutes)	11 [5 - 21]	11 [6 - 21]	§ 0.970	18.3 ± 0.5	13.1 ± 1.8	0.006
Sleep efficiency (%)	84.9 ± 10.7	82.3 ± 12.1	0.002	84.7 ± 0.2	83.9 ± 0.7	0.295
Number of awakenings	22 [16 - 31]	25 [19 - 32]	§ <0.001	24.8 ± 0.3	27 ± 1.0	0.042
% of sleep time spent in						
Stage 1 sleep	10.2 [7.3 - 14.9]	9.9 [6.9 - 14.1]	§ 0.253	11.9 ± 0.2	12.0 ± 0.5	0.867
Stage 2 sleep	45.5 [39.7 - 52.2]	46.4 [39.9 - 55.5]	§ 0.142	46.6 ± 0.2	45.9 ± 0.8	0.402
Slow wave sleep	19.2 [14 - 24.9]	19.6 [14.4 - 26.1]	§ 0.417	19.6 ± 0.2	20.7 ± 0.6	0.106
REM sleep	22.4 [18.4 - 26]	20.9 [15.9 - 26]	§ 0.013	21.9 ± 0.1	21.4 ± 0.5	0.328
Periodic limb movements						
Number	0 [0 - 18]	2 [0 - 28]	§ 0.212	17.8 ± 0.8	14 ± 2.7	0.182
Index	0 [0 - 2.7]	0.3 [0 - 4.2]	§ 0.234	2.7 ± 0.1	2.1 ± 0.4	0.141

For bivariate analysis, results are expressed as average ± standard deviation or as median [interquartile range]; between-group comparisons were performed using student's t-test or Kruskal-Wallis test (§). For multivariable analysis, results are expressed as adjusted mean ±standard error, and comparisons were performed using analysis of variance adjusting for gender (man, woman), age (continuous), educational level (low, middle, high), born in Switzerland (yes, no), smoking categories (never, former, current), BMI categories (normal, overweight, obese), alcohol consumption (yes, no), hypertension (yes, no), diabetes (yes, no), other vitamin/mineral supplements (yes, no) and presence of sleep medication (yes, no).

P83

Vitamin supplements do not improve subjective and objective sleep parameters. A population-based observational analysis

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Introduction: A substantial proportion of the Swiss population regularly consumes vitamin supplements, driven by the widespread belief in their potential health benefits. Among these presumed advantages is the improvement of overall well-being, including sleep quality. However, existing research on the relationship between vitamin supplementation and sleep parameters presented controversial results. To address this uncertainty, we aimed to investigate the associations between vitamin supplementation and both subjective and objective sleep parameters.

Methods: Data from three follow-ups of the population based CoLaus|PsyColaus cohort: 2009-12 (first), 2014-17 (second) and 2018-21 (third). Within each follow-up, vitamin supplement use was reported by the participants, who were categorized as users and non-users. Objective sleep parameters were measured with polysomnography in the 2009-2012 survey. Subjective sleep parameters were measured through Epworth Sleepiness Scale, Pittsburgh sleep quality index, and Berlin questionnaire.

Results: 3887 (52.% women, 57.2±10.4 years, 19.1% vitamin users), 1916 (49.7% women, 60.8±9.4 years, 28.5% users) and 1561 (51.2% women, 63.1±8.9 years, 28.5% users) participants took part in the first, second, and third follow-ups, respectively. In the bivariate analyses, vitamin supplement users reported poorer sleep quality, reflected in higher PSQI scores compared to non-users across all surveys. However, multivariable-adjusted analyses revealed no consistent association between vitamin supplement use and self-reported sleep parameters. In terms of objective sleep parameters, bivariate analyses revealed that non-vitamin users exhibited better sleep efficiency (84.9% for non-users vs. 83.7% for users, p = 0.036) and experienced fewer awakenings during sleep (22 vs. 24, respectively). Vitamin supplementation appeared to be associated with reduced REM sleep duration in users (see Table). Nevertheless, multivariate analyses found no significant differences in objective sleep parameters between vitamin users and non-users, except for periodic limb movements, which were notably reduced among vitamin users.

Conclusion: Our analyses found no consistent association between multivitamin supplementation and either subjective or objective sleep parameters. Still, given the observational nature of this study, a randomized, double-blind, placebo-controlled trial would be valuable to validate these findings and provide more robust evidence.

	Non-users	Users	P-value	Non-users	Users	P-value
Total sleep time (minutes)	400 ± 72	407 ± 72	0.076	400 ± 2	404 ± 4	0.332
Sleep onset (minutes)	11 [5 - 21]	11 [5 - 21]	§ 0.821	18.3 ± 0.6	15.9 ± 1.2	0.073
Sleep efficiency (%)	84.9 ± 10.8	83.7 ± 11.3	0.036	84.7 ± 0.2	84.4 ± 0.5	0.629
Number of awakenings	22 [16 - 31]	24 [18 - 31]	§ 0.014	24.8 ± 0.3	25.8 ± 0.6	0.176
% of sleep time spent in						
Stage 1 sleep	10.2 [7.3 - 14.9]	10.2 [7.2 - 14.5]	§ 0.595	11.9 ± 0.2	12.1 ± 0.3	0.506
Stage 2 sleep	45.5 [39.7 - 52.2]	46.2 [39.6 - 53.8]	§ 0.289	46.6 ± 0.2	46.1 ± 0.5	0.432
Slow wave sleep	19.2 [14 - 24.9]	19.5 [14.3 - 25.1]	§ 0.569	19.6 ± 0.2	20.0 ± 0.4	0.410
REM sleep	22.4 [18.5 - 26]	21.5 [16.9 - 26]	§ 0.045	21.9 ± 0.1	21.7 ± 0.3	0.563
Periodic limb movements						
Number	1 [0 - 19]	0 [0 - 21]	§ 0.871	18.1 ± 0.9	15.0 ± 1.8	0.115
Index	0.1 [0 - 2.8]	0 [0 - 3]	§ 0.784	2.7 ± 0.1	2.2 ± 0.3	0.047

For bivariate analysis, results are expressed as average ± standard deviation or as median [interquartile range] and between-group comparisons performed using student's t-test or Kruskal-Wallis test (§). For multivariable analysis, results are expressed as adjusted mean ±standard error, and comparisons were performed using analysis of variance adjusting for gender (man, woman), age (continuous), educational level (low, middle, high), smoking categories (never, former, current), born in Switzerland (yes, no), BMI categories (normal, overweight, obese), alcohol consumption (yes, no), hypertension (yes, no), diabetes (yes, no), and presence of sleep medication (yes, no).

P84

What was the impact of the COVID-19 pandemic on smoking behavior in the Swiss population?

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Introduction: The control measures against the COVID-19 pandemic have largely influenced health behaviors, including smoking. Studies on the impact of the COVID-19 pandemic on smoking behaviors have shown divergent results, with the majority focusing on changes in tobacco consumption during the first COVID-19 lockdown in 2020. This study aims to examine changes in smoking behavior following the first and second waves of the COVID-19 pandemic in Switzerland and their association with experiences of SARS-CoV-2 infection.

Methods: This study is a secondary analysis of SérocoViD' data, a cross-sectional observational study, including 5 surveys conducted in the canton of Vaud during the COVID-19 pandemic (May 2020 – July 2022). Participants from the first survey between May 3 and July 7, 2020 (S1) and the third survey between February 1 and February 6, 2021 (S2), aged 15 years old and older, were included. Participants with missing or inconsistent data on sociodemographic characteristics, tobacco use, or SARS-CoV-2 infection were excluded. Logistic regression models were used to assess the association between SARS-CoV-2 infection (independent variables) and cigarette smoking cessation (dependent variable). Analyses were first performed bivariately and then adjusted for age and gender.

Results: A total of 2,454 participants were included in the analysis (1,476 in S1 and 978 in S2) with 52% women. The average age was 48 years (SD 19). The proportion of ex-smokers was 21.2%, while 62.8% had never smoke, 11.7% were daily smokers and 4.3% were occasional smokers. Few participants quit smoking during the COVID-19 pandemic: 7 participants (0.5%) in S1 and 15 participants (1.5%) in S2. Participants who had previously undergone a SARS-CoV-2 diagnostic test were more likely to quit smoking during the COVID-19 pandemic (non-adjusted OR = 2.67, 95% CI = 1.01-7.08; adjusted OR = 2.55, 95% CI = 0.96-6.77). However, no association was observed between either prior positive result or a positive serology during the survey, nor was there any association with symptoms compatible with SARS-CoV-2 infection. Similarly, there was no association between gender and smoking cessation.

Conclusions: Although limited by the small number of participants who quit smoking during the COVID-19 pandemic, the findings suggest a potential association between a prior SARS-CoV-2 diagnostic test and smoking cessation during the pandemic.

P85

Acceptability of Components for a Mandatory Quality Improvement Framework: A Survey Among Swiss General Practitioners

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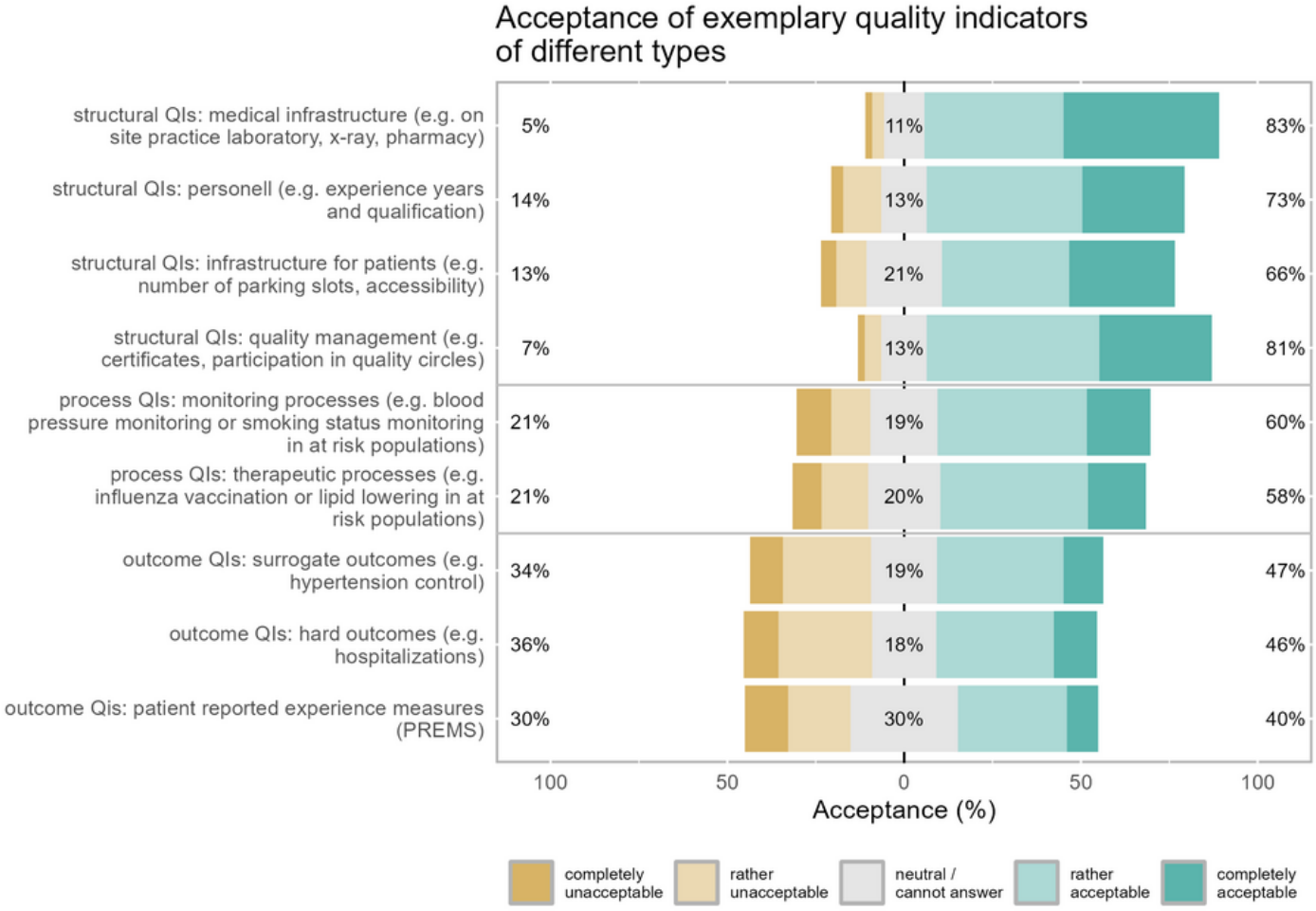
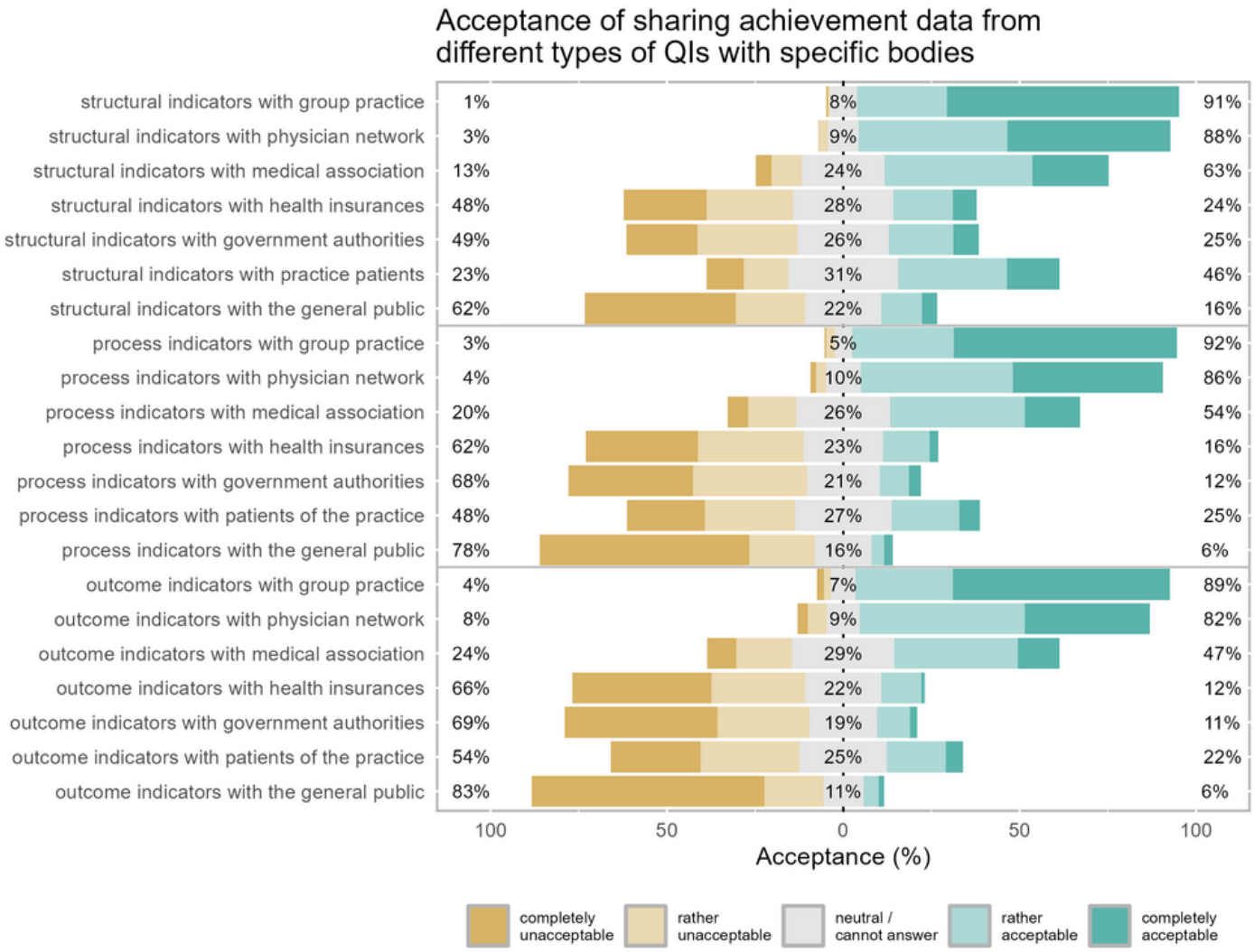
Introduction: In Switzerland, recently introduced legislation requires the implementation of a framework for mandatory quality improvement at the level of individual general practitioners (GPs) and includes the introduction of quality indicators (QIs) amongst other components[1]. The GP-sided acceptance of potential components of such a framework is important to its success[2]. The aim of this study was to identify components of a potential framework for mandatory quality improvement that are most likely to be accepted by Swiss GPs.

Methods: Cross-sectional web-based survey conducted among employed and self-employed Swiss GPs in 2024. The survey was distributed to 1103 Swiss GPs via their phyisician networks. The survey inquired the acceptability of 62 possible components of a mandatory framework for quality improvement. Components were categorized as 'acceptable' if they were rated as 'acceptable' or 'very acceptable' by more than 50% of participants, in contrast to those rated as 'neutral' or 'not acceptable'.

Results: A total of 244 GPs participated (participation rate 22.1%, 53.0% male, 51.2% <50 years old, 50.8% employed). The majority of participants rated 31 of the proposed 62 components as acceptable. Among these were QIs pertaining to structures and processes of care (rated as acceptable by 58.3% to 83.4%, Figure 1) and sharing QI achievement data with peers from different group practices and physician networks (53.9% to 92.2%, Figure 2). A majority of participants accepted physician networks, medical associations, and academic institutions as entities that could establish QIs and manage QI data (acceptance 62.1% to 88.8%).

Conclusions: Swiss GPs appear to accept QIs that reflect structures and processes of care established by physician networks, medical associations or academic institutions, exclusively shared among their peers. The present results, reflecting the interests of GPs, deserve attention and discussion in the context of still ongoing negotiations between medical associations and health insurers regarding mandatory quality improvement.





P86

Acceptability, Appropriateness and Feasibility of Patient-reported Outcome Measures (PROMs) and Patient-reported Experience Measures (PREMs) in Patients Hospitalized in General Internal Medicine

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Introduction: PROMs & PREMs are increasingly utilized to integrate patient perspectives on care delivery. Despite their widespread adoption in many specialties, routine use in general internal medicine (GIM) remains limited. This study aimed to assess the acceptability, appropriateness, and feasibility of collecting PROMs & PREMs in GIM patients across five Swiss university hospitals from the perspective of research collaborators.

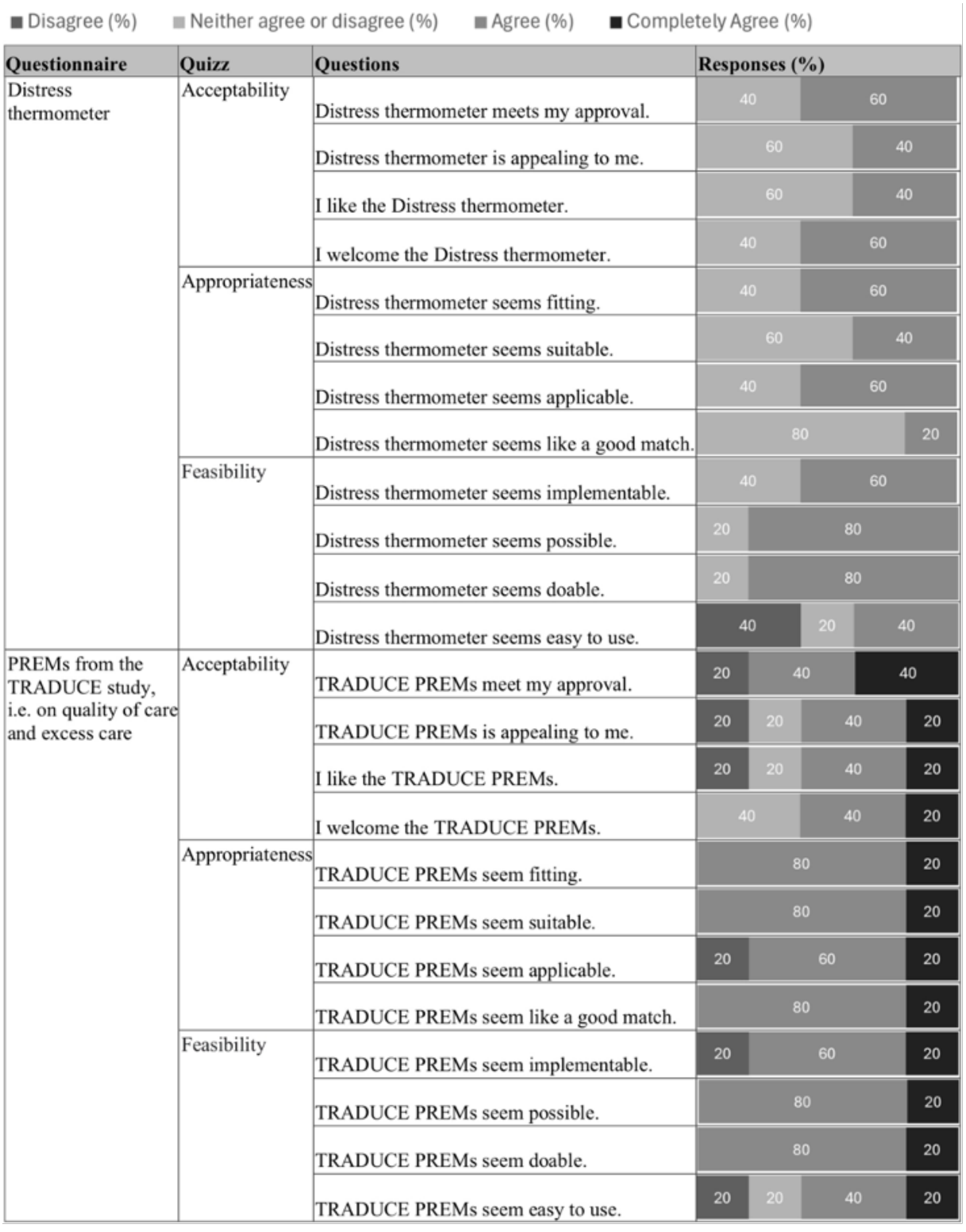
Methods: We conducted a qualitative study with research collaborators who collected PROMs and a PREM within a study, entitled "Trends of PROMs in multimorbid medical patients hospitalized for an acute illness" (TRADUCE). Inpatients completed three generic PROMs - ESAS-r (symptom scale), EQ-5D-5L (health-related quality of life), and Distress Thermometer (DT; psychological distress) – and a customized PREM questionnaire designed to evaluate patient-perceived quality of care. PROMs were completed at admission, day 4, at discharge, at 10 and 30 days post discharge; PREM at discharge only. Their acceptability, appropriateness, and feasibility were evaluated using the validated MEOSM_ESM questionnaire. Subsequently, a semi-structured focus group was conducted to explore their suggestions for implementation in clinical practice. Data were analyzed using deductive thematic analysis.

Results: Most research collaborators reported ESAS-r and EQ-5D-5L as acceptable, appropriate, and feasible across all items of the questionnaire. The DT yielded variable responses and was considered challenging to use. The PREM questionnaire was less frequently deemed acceptable or easy to use (Table 1). The focus group identified staff training, digitisation and hierarchical support to integrate PROMs & PREMs into GIM practice. Key suggestions included embedding questionnaires in electronic records, reducing patient burden, and improving communication about their benefits.

Conclusions: In Swiss GIM departments, PROMs & PREMs seem to be acceptable, appropriate, and feasible from the perspective of research collaborators. The key challenge will be digitalizing, automating, and effectively utilizing PROMs. However, having trained staff and a supportive hierarchy could facilitate progress in patient partnerships. Gathering patients' perspectives will be essential before integrating PROMs & PREMs into clinical practice.

Table 1. Responses of research collaborators regarding PROMs & PREM acceptability, appropriateness, and feasibility of the TRADUCE study.

Questionnaire	Quizz	Questions	Responses (%)
ESAS-r	Acceptability	ESAS-r meets my approval.	80 / 20
		ESAS-r is appealing to me.	20 / 60 / 20
		I like the ESAS-r.	20 / 60 / 20
		I welcome the ESAS-r.	80 / 20
	Appropriateness	ESAS-r seems fitting.	40 / 60
		ESAS-r seems suitable.	40 / 60
		ESAS-r seems applicable.	60 / 40
		ESAS-r seems like a good match.	80 / 20
	Feasibility	ESAS-r seems implementable.	60 / 40
		ESAS-r seems possible.	40 / 60
		ESAS-r seems doable.	40 / 60
		ESAS-r seems easy to use.	20 / 60 / 20
EQ-5D-5L index	Acceptability	EQ-5D-5L index meets my approval.	60 / 40
		EQ-5D-5L index is appealing to me.	60 / 40
		I like the EQ-5D-5L index.	60 / 40
		I welcome the EQ-5D-5L index.	60 / 40
	Appropriateness	EQ-5D-5L index seems fitting.	40 / 60
		EQ-5D-5L index seems suitable.	40 / 60
		EQ-5D-5L index seems applicable.	40 / 60
		EQ-5D-5L index seems like a good match.	60 / 40
	Feasibility	EQ-5D-5L index seems implementable.	60 / 40
		EQ-5D-5L index seems possible.	40 / 60
		EQ-5D-5L index seems doable.	40 / 60
		EQ-5D-5L index seems easy to use.	60 / 40



Questionnaire	Quizz	Questions	Responses (%)
Distress thermometer	Acceptability	Distress thermometer meets my approval.	40 60
		Distress thermometer is appealing to me.	60 40
		I like the Distress thermometer.	60 40
		I welcome the Distress thermometer.	40 60
	Appropriateness	Distress thermometer seems fitting.	40 60
		Distress thermometer seems suitable.	60 40
		Distress thermometer seems applicable.	40 60
		Distress thermometer seems like a good match.	80 20
	Feasibility	Distress thermometer seems implementable.	40 60
		Distress thermometer seems possible.	20 80
		Distress thermometer seems doable.	20 80
		Distress thermometer seems easy to use.	40 20 40
PREMs from the TRADUCE study, i.e. on quality of care and excess care	Acceptability	TRADUCE PREMs meet my approval.	20 40 40
		TRADUCE PREMs is appealing to me.	20 20 40 20
		I like the TRADUCE PREMs.	20 20 40 20
		I welcome the TRADUCE PREMs.	40 40 20
	Appropriateness	TRADUCE PREMs seem fitting.	80 20
		TRADUCE PREMs seem suitable.	80 20
		TRADUCE PREMs seem applicable.	20 60 20
		TRADUCE PREMs seem like a good match.	80 20
	Feasibility	TRADUCE PREMs seem implementable.	20 60 20
		TRADUCE PREMs seem possible.	80 20
		TRADUCE PREMs seem doable.	80 20
		TRADUCE PREMs seem easy to use.	20 20 40 20

P87

Advance care planning using a conversation game: feasibility, acceptability, and outcomes of a novel intervention in dialysis patients

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Introduction: Although dialysis patients suffer high morbidity and mortality rates and guidelines recommend timely advance care planning (ACP), goals of care discussions rarely take place. Barriers include patients' and healthcare providers' difficulty to broach sensitive subjects. We developed a 3-step ACP intervention integrating a card game (Anticip'action) to help patients and nephrology healthcare providers engage in ACP. The aims of this study were to assess the feasibility and acceptability of

the intervention, and to determine its impact on patients' engagement in ACP and ACP documentation.

Methods: Trained nurses of the dialysis unit of the Geneva University Hospitals conducted two discussion sessions based on the card game with dialysis patients, followed by a round-up discussion involving the patient, the nurse and the nephrologist. Data were collected by means of questionnaires that patients completed pre- and post-intervention, and nurses post-intervention. ACP documentation was retrieved from patient medical records.

Results: 33 patients were included from January 2022 to July 2023, 23 (70%) completed the intervention, and 18 (54%) completed the survey at 2 months. Mean age was 67 (±13) years, 23 (70%) patients were male. Two patients died during the study. Among 13 nurses included, 11 conducted the intervention, and completed the survey. Participants found the intervention useful (3.89 and 4.1 on a 5-point Likert scale, for patients [P] and nurses [N], respectively) and feasible. The usefulness and relevance of the card game was rated highly (3.92 [P] and 3.95 [N]). The main organisational difficulty mentioned by nurses was the scheduling of sessions. Patients' reported engagement in ACP significantly increased (+1.04 on the 9-item ACP Engagement Survey, p <0.001). After the intervention more patients had written advance directives (10 [40%] vs 2 [8%]) and/or designated a healthcare surrogate (23 [92%] vs 2 [8%]). Patients' values and preferences for end-of-life care and life-sustaining treatments were more clearly documented in the medical record.

Conclusions: An intervention using a card game to facilitate advance care planning is feasible and acceptable in dialysis patients. It has relevant clinical outcomes such as the designation of a healthcare surrogate and the documentation of care preferences.

P88

Antibiotic prescribing in Swiss outpatient care: baseline data for an interventional study of shared decision-making tools

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Introduction: Antimicrobial resistance threatens the effectiveness of future therapies, with unnecessary antibiotic prescriptions being a major contributor. Reducing antibiotic prescriptions is essential, with healthcare professionals representing the primary target for intervention strategies.In Switzerland, available data suggest that primary care physicians (PCPs) are the main prescribers of antibiotics in the outpatient setting, with estimates ranging up to 80% . A large proportion of these prescriptions are for potentially self-limiting diseases, where antibiotic therapy is not always necessary. To test an intervention to reduce PCPs antibiotic prescription rates by training them in shared decision making (SDM), we first wanted to learn who prescribes antibiotics in ambulatory care and examine trends in antibiotic prescription rates over the past five years.

Methods: We performed a retrospective repeated cross-sectional study from 2019-2023 to establish a reference standard for a prospective case-control study, which will examine differences in antibiotic prescription rate changes between patients in the intervention group and a matched control group. We analyzed claims for outpatient antibiotic prescription fills from the Swiss health insurance company SWICA for the period 2019-2023 to assess the distribution of antibiotic prescription fills between different outpatient healthcare providers before the intervention.

Results: We included data from 106'307 patients in 2019 and 113'343 in 2023. Most patients (70%) were aged between 19 and 65 years. The primary registered PCP accounted for 40% of antibiotic prescriptions in 2019, which reduced to 36% of antibiotic prescriptions in 2023. In 2023 other group practices, other PCPs and hospital outpatient departments contributed 40%. Registered PCPs showed a higher use of 'watch' antibiotics compared with other prescriber groups.

Conclusion: The findings indicate a shift in antibiotic prescribing patterns, with a growing proportion attributable to outpatient providers beyond registered general practitioner. This emphasizes the need to extend antimicrobial stewardship efforts to encompass all prescriber groups in outpatient settings.

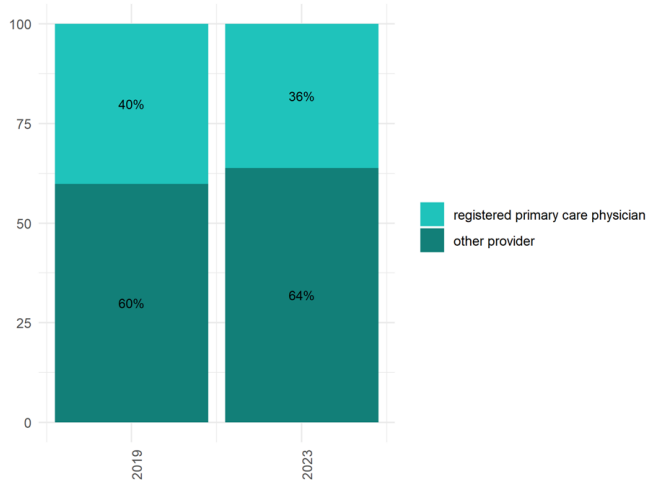

Figure 1: Rate of antibiotic prescription fills by prescriber in 2019 and 2023

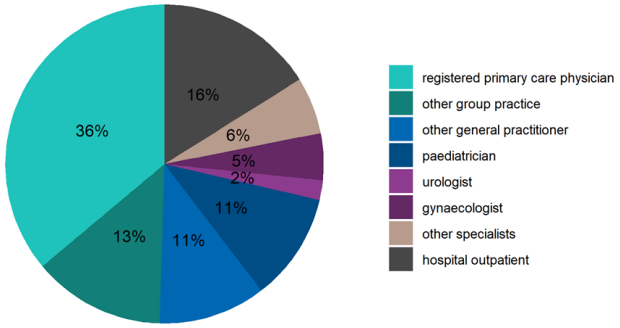

Figure 2: antibiotic prescription fills by prescriber group in 2023

P89

Balancing connection and professionalism: Physician Self-Disclosure in Communication About Advanced Life-Limiting Illness

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Introduction: Conversations about advanced illnesses require a delicate balance of communication strategies to foster meaningful clinician-patient relationships. Physician self-disclosure, whether personal or emotional, has been proposed as a way to strengthen these interactions, yet its effects remain underexplored. We examined how different forms of physician self-disclosure influence perceptions of compassion, trust, professionalism, and comfort during discussions about illness progression.

Methods: A factorial vignette study was conducted with 1,572 Swiss adults (51.4% women), who assessed scenarios in which a physician communicated about serious illness. Eleven attributes were systematically manipulated, including personal self-disclosure (e.g., reference to a family member's illness), emotional self-disclosure (e.g., verbal expression of sadness or sadness accompanied by tears), physician experience level, recommendation style, and clarity of communication. Participants rated key outcomes: compassion, trust, professionalism, and comfort, on an 11-point Likert scale. Multi-level regression models with random intercepts were used for analysis.

Results: Self-disclosure, whether personal or emotional, significantly enhanced patient perceptions of compassion, trust, and comfort ($p < 0.01$). However, emotional expressions of sadness, especially when accompanied by visible tears, produced mixed outcomes. While these expressions increased perceptions of compassion ($\beta = 1.96$, $p < 0.01$), they did not significantly affect professionalism ratings ($p = 0.33$). Additionally, participant demographics influenced the impact of self-disclosure. Other factors, such as continuity of care and tailored communication, consistently contributed to improved perceptions across all measured outcomes ($p < 0.01$).

Conclusion: Physician self-disclosure, both personal and emotional, can foster greater compassion, trust, and comfort in discussions about advanced life-limiting illnesses, though its effects depend on how it is used. Differences in participant demographics suggest that some groups may be more receptive to self-disclosure than others. These findings highlight the need for adaptable communication strategies and suggest avenues for clinician training. While self-disclosure has the potential to strengthen connections, its impact seems to be shaped by the broader dynamics of the clinician-patient relationship and the communication context.

P90

Barriers and enablers to deprescribe benzodiazepines and other sedative hypnotic medications in older adults: perspectives of general practitioners

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Introduction: Despite guidelines advising against the use of benzodiazepines and other sedative-hypnotic medications (BSHs) to treat chronic sleep problems, BSHs remain frequently prescribed. This is especially concerning in older adults, who are more susceptible to adverse effects. Once BSHs therapy is established, deprescribing is challenging. Various barriers and enablers to deprescribing have been identified, but may be influenced by local contexts. In Switzerland, general practitioners (GPs) are key stakeholders in the deprescribing process. Therefore, we explored factors associated with GPs' intention to deprescribe BSHs and their self-reported routine BSHs deprescribing.

This work was done in preparation for the Horizon Europe-supported BE-SAFE trial that aims to reduce BSHs use in older adults in Europe.

Methods: We conducted a survey study which included 35 questions based on the Theoretical Domains Framework (TDF) measured on a 5-point Likert scale. We used descriptive statistics to calculate the mean and applied reverse scoring to negative items, independently of the item wording. A mean score <3 was classified as a major barrier, 3-4 as a moderate barrier, and ≥4 as an enabler. We used multivariable logistic regression to assess the association between TDF domains and 1) intention to deprescribe, and 2) self-reported routine deprescribing practice.

Results: Among 126 GPs, we identified 10/35 items as major barriers in 5 domains: Skills, Goals, Emotions, Environmental context and resources, and Social influence. We found 10/35 items as enablers in 4 domains: Knowledge, Social and professional role and identity, Beliefs about consequences, and Intentions. Three domains were significantly associated with intention to deprescribe BSHs: Knowledge (odds ratio [OR] 2.63, 95% confidence interval [CI] 1.15-6.03); Beliefs about consequences (OR 2.34, 95% CI 1.08-5.10); Goals (OR 3.31, 95% CI 1.66-6.62). One domain was significantly associated with self-reported routine BSH deprescribing: Goals (OR 7.56, 95% CI 2.73-20.39).

Conclusions: We identified multiple barriers and enablers associated with BSH deprescribing and drivers associated with deprescribing behavior among Swiss GPs. These insights can help better implement BSH deprescribing in Switzerland.

P91

Can a coordinated collaboration between physicians and pharmacists improve patient care and self-management in Switzerland? First steps in implementing the myCare Start service

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Introduction: Patients beginning a new medication for a long-term condition often face challenges with adherence, partly due to inadequate information or personal beliefs. The UK's interprofessional New Medicine Service (NMS) consists of two 10-minute patient-centred consultations between a pharmacist and patient following a physician's initiation of a new long-term treatment. This service has been shown to effectively improve patient adherence to newly prescribed medications. The myCare Start Implementation Project (myCare Start-I) is applying implementation science methodologies to adapt the service for the Swiss healthcare setting.

Methods: Following a contextual analysis of the Swiss primary care ecosystem a list of 63 factors was identified as influencing implementation of myCare Start in the Swiss setting. Focus group discussions were conducted with stakeholders to co-develop intervention adaptations and implementation strategies based on these factors. Focus group data were deductively analysed in accordance with the Context and Implementation of Complex Interventions (CICI) framework.

Results: A total of 8 focus groups were conducted (n = 7 pharmacists, 22 physicians, 5 patient stakeholders) in the French-speaking part of Switzerland from June to November 2024. Stakeholders were motivated to participate in a service like myCare Start to improve the quality of care afforded to patients, however intervention adaptations were suggested to improve its fit. Further, the need for a simple and flexible referral process from physicians to pharmacists to foster patient engagement and avoid increasing workload, increased networking between physicians and pharmacists to improve familiarity of roles and competencies, and the use of common digital communication tools to encourage interprofessional collaboration, were mentioned to facilitate the implementation of myCare Start in practice. Furthermore, all stakeholders underscored the importance of a service that is remunerated and reimbursed by insurance companies.

Conclusion: In the French part of Switzerland, participating physicians, pharmacists, and patients were convinced of the added value of myCare Start. The use of a structured and stakeholder-driven implementation process will facilitate the successful implementation of a contextually relevant interprofessional service. This service is expected to answer a real need of the Swiss primary care system and improve patient adherence at medication initiation.

P93

Enhancing Patient-Dedicated Time in Clinical Encounters: A Systematic Review and Meta-Analysis of Intervention Strategies

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Introduction: Hospitals' institutional program designed to protect or increase the time dedicated to interactions between patients and healthcare professionals, while growing in popularity, often lack formal evaluation. This study aims to quantify the effectiveness of programs designed to protect or enhance the quality or quantity of clinical encounter time between hospitalized patients and healthcare professionals.

Methods: A systematic literature review and random-effects meta-analysis was performed on Cochrane Library, Embase, and Web of Science databases queried on the 21st June 2022. Studies had to include at least 80% adult inpatients hospitalised in an acute care setting. They had to report a group comparison and assess at least one of the following outcomes: patient satisfaction, length of stay, home discharge, and 30-days readmission rates. Screening, data extraction, coding, and risk of bias assessment were performed independently and in duplicate. The risk of bias was assessed using the ROBINS-I tool for non-randomised trials, and the Cochrane Risk of Bias 2.0 instrument for randomised trials.

Results: A total of 117 unique studies comprising 298,517 patients were included. Compared with the period prior to the intervention or to the group that did not receive interventions in parallel studies, interventions increased the proportion of satisfied patients (+8% [95% CI: +4.7% to +11.4%]; 26 studies, 20,456 patients), the proportion of patients discharged home (+2.6% [95% CI: +0.3% to +5.0%]; 21 studies, 61,539 patients), and reduced length of stay (-1.07 days [95% CI: -1.62 to -0.52]; 58 studies, 160,080 patients) without significant difference in readmission rates (-0.8% [95% CI: -1.8% to +0.2%]; 49 studies, 177,677 patients). Most studies were at high risk of bias, even among randomised trials. Programs varied greatly in their interventions and implementation contexts, with an important heterogeneity in findings. The effects on patient satisfaction were consistent across designs and types of comparison.

Conclusions: Programs designed to enhance or protect clinical encounter time in acute care setting may improve patient experience, quality of care and discharge processes. Higher quality randomised controlled trials evaluating such interventions are warranted. Future programs may benefit from studies that draw on multi-disciplinary knowledge and implementation sciences to identify contextual factors enabling or hindering their success.

P94

Gaps in chronic and acute gout care: real-world data from an electronic health record-based register

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Introduction: The management of chronic and acute gout remains suboptimal in clinical practice. Current recommendations strongly advocate for urate-lowering therapy (ULT) in all patients with tophaceous gout and treating acute flares with anti-inflammatory drugs. Yet, the implementation of these recommendations is not well-known. This study aims to evaluate the current use of ULT in patients with tophaceous gout and the use of anti-inflammatory drugs during acute flares. This analysis is based on real-world data from an electronic health record-based gout register at the Geneva University Hospital[1].

Methods: Patient records were screened for documentation of tophi. Use of any ULT was evaluated during the in- or outpatient encounter where tophi were documented, as well as at previous and subsequent visits. Acute flares were identified using 3 criteria: (1) joint aspiration showing uric acid crystals, (2) hospitalization with a primary ICD-10 diagnosis of gout, or (3) acute flare noted in the problem list. Use of anti-inflammatory drugs (NSAID, colchicine, IL-1 inhibitor, or glucocorticoids) was assessed during hospitalization or within ±2 weeks of a joint aspiration or flare documentation.

Results: Among the 5,743 patients of the register, 725 had tophaceous gout based on clinical documentation, with a mean age of 73 years and 75% male. At the time of documentation, 257 (35.4% [32.1 -39.0]) were on ULT (Figure 1). 78 of them (30.3% [25.0 – 36.2]) with follow-up visits did not receive any additional prescription during the following year, while 109 of the 468 patients (23.3% [19.7 – 27.3]) who did not receive ULT at the time of documentation received one during the year following it. For acute flares, we identified 3,185 events for 2,267 patients. Use of anti-inflammatory treatment occurred in 71.2% of the cases [69.4 – 72.8]. The most frequent used drug was colchicine (77.1%), followed by NSAIDs (28.2%), glucocorticoids (21.4%) and IL-1 inhibitors (1.6%).

Conclusion: The prescription of ULT in patients with tophus is suboptimal. A significant proportion of previously treated patients did not receive ongoing therapy. Many patients with acute flares do not receive anti-inflammatory treatment, potentially resulting in prolonged pain, extended hospital stays, and the risk of major adverse cardiac event.

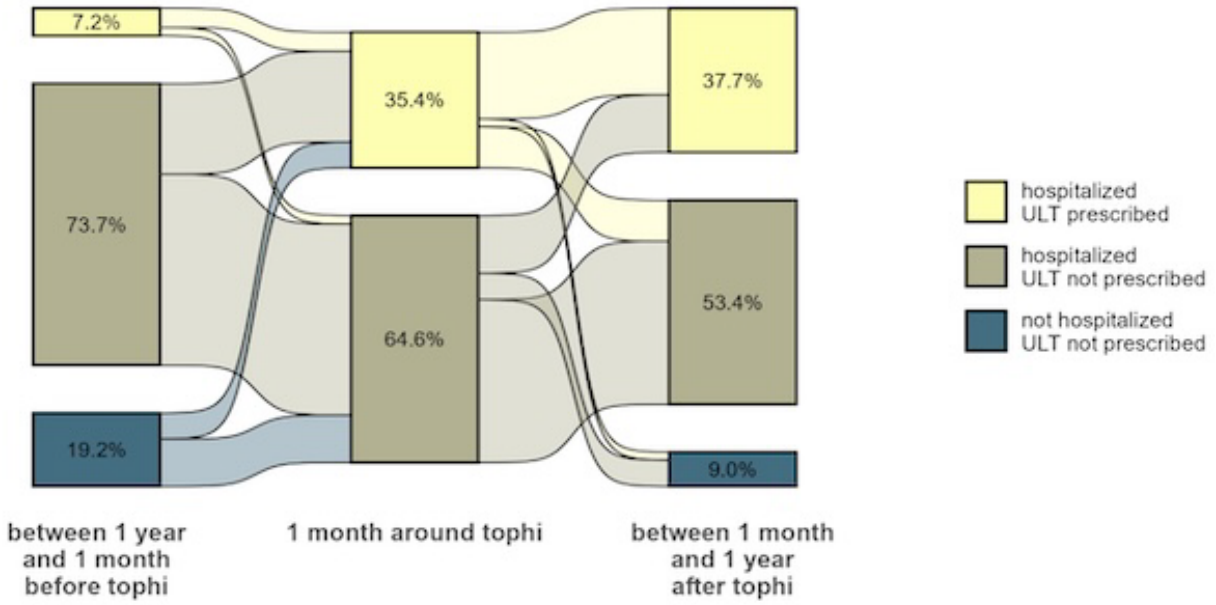

Figure 1: Prescription of urate-lowering therapy (ULT) in patients with tophi at time of tophi documentation, or the year preceding or following documentation.

P95

Hospital@Home - Improving Discharge Management of Complex and Multimorbid Patients: First Findings of an Ongoing Randomized-Controlled Trial

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Introduction: The transition phase from hospital discharge to home is particularly critical, over 20% of complex/multimorbid patients are rehospitalized within 30 days after discharge, leading to higher morbidity and cost. In a randomized clinical trial we assess the efficacy of a complex multicomponent interprofessional intervention to usual care. In this analysis, we report first findings of the ongoing trial.

Methods: Randomized controlled trial including patients at increased risk for readmission (>20%) hospitalized on acute internal medicine wards. We compare an APN-led complex multicomponent intervention before, during and 5 days after discharge to usual care. The primary outcome is the rehospitalization rate after 30 days. In this analysis, we assessed the satisfaction with the intervention and the baseline characteristics including length of hospital stay (LOS).

Results: In total, 300 patients were analyzed (mean age 81.89 years (SD±7.87), 49.3% women). The mean BARRS score (Baden rehospitalization risk score) was 6.83 points (SD±1.82) (>5

points is considered high risk), the mean length of stay in hospital was 8.99 days (SD ±5.32 days). The overall readmission rate was 57 (19.6%). Patient satisfaction in the intervention group was very high: 97.6 % were satisfied to very satisfied and would choose to participate in the intervention program again (figure). The Hospital@Home team coordinated unavoidable readmissions with the goal to improve the process (shorter waiting times, optimized information flow). In total, 14 home visits (21%) were conducted and the hotline was used 36 times by patients, relatives, pharmacies or Spitex organizations.

Conclusion: First findings from this ongoing study are a very high level of patient satisfaction with the intervention and a need for ongoing support after discharge from patients, relatives and home care organizations. The analysis of the first 300 patients shows a representative sample of the target patient population.

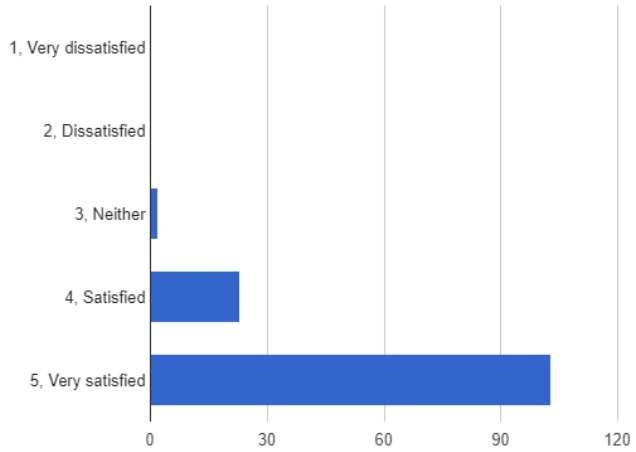
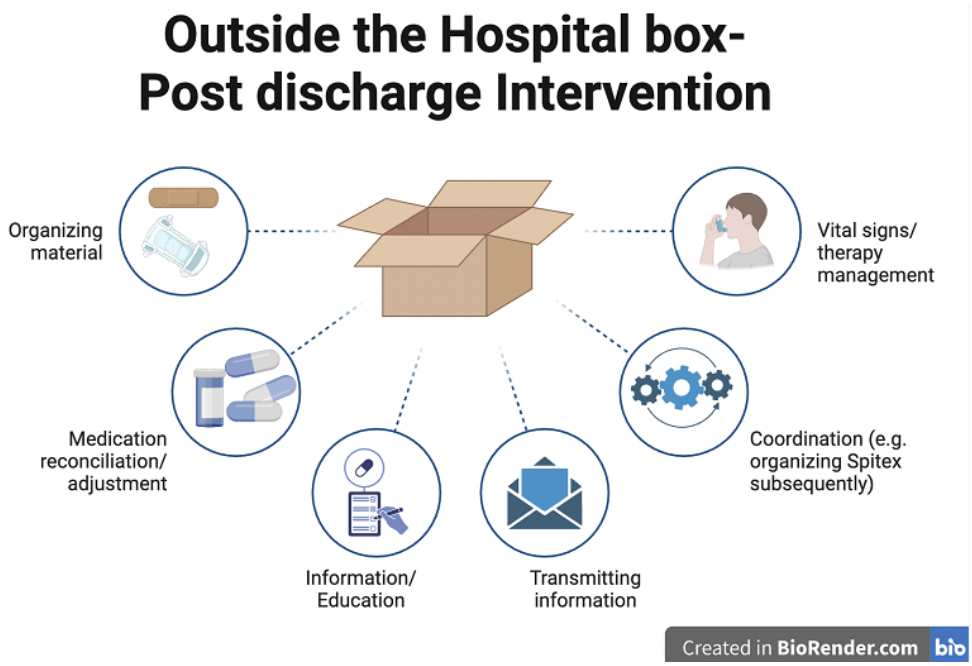


Figure: Were you satisfied with the organization and support of the Hospital@Home team? (N = 130)



P96

How Many Routine Blood Tests Are Normal? Insights from the LUCID National Data Stream in Swiss University Hospitals

J. Regina[1], M. Altarelli[2], M. Débieux[3], F. Amato[4], J. Stirnemann[5], F. Vallelian[6], S. Bassetti[7], C.E. Aubert[8], A. Leichtle[9], C. Lovis[10], A. Chiolero[11], G. Obozinski[4], M. Méan[1], LUCID Consortium

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Introduction: Overuse of laboratory tests is a common issue and can result in adverse outcomes, such as anemia, unnecessary discomfort for patients and pathological values without significance leading to additional unnecessary examinations. The smarter medicine Switzerland recommendations published in 2016 advise against routine daily blood draws or performing them without a specific clinical question. This study aimed to assess the proportion of blood draws that yield normal test results in patients hospitalized in general internal medicine across four Swiss university hospitals.

Methods: Using data from LUCID National Data Stream which aims to study low-value care in medical hospitalized patients, we studied the stays of consenting adult patients hospitalized >48 hours in Lausanne, Geneva, Bern, and Zurich University hospital between 2018 and 2024.

We focused our analysis on common routine laboratory data, including simple blood count, creatinine, sodium, potassium,

corrected calcium, and C-reactive protein (CRP). For stays longer than 10 days—exceeding the expected length of stay in general internal medicine divisions—laboratory tests were censored after the 10th day. We defined normal results based on established laboratory reference ranges and clinical expertise (refer to Table 1 for normal reference ranges).

Results: A total of 78'426 stays were analyzed, comprising 1'690'045 laboratory tests. Mean patient age was 70 (SD 21.0) years old, 41.9% were female and mean Charlson Comorbidity Index was 4.2 (SD 2.7). The majority of tests yielded normal results (58.7% overall; blood count: 52.6%; potassium: 74.4%; sodium: 78.1%; calcium: 57.9%; creatinine: 39.9%; CRP: 67.5%) (Figure 1). When a first test was normal, the likelihood of a subsequent normal test within the next five days was 80.0%. Median time between the first two blood tests was 22.4 hours (IQR 41.2). For potassium and sodium, such time was of 24.7 hours (IQR 28.3) if the first value was normal and 23.2 hours (IQR 25.3) when the first value was abnormal. The median total number of tests per stay was 16 (IQR 21).

Conclusions: In our study, more than half of routine laboratory tests yield normal results, especially in patients with normal initial values. These findings suggest an opportunity to optimize testing practices by reducing the frequency of tests in stable patients with normal initial results, improving efficiency while maintaining high-quality care.

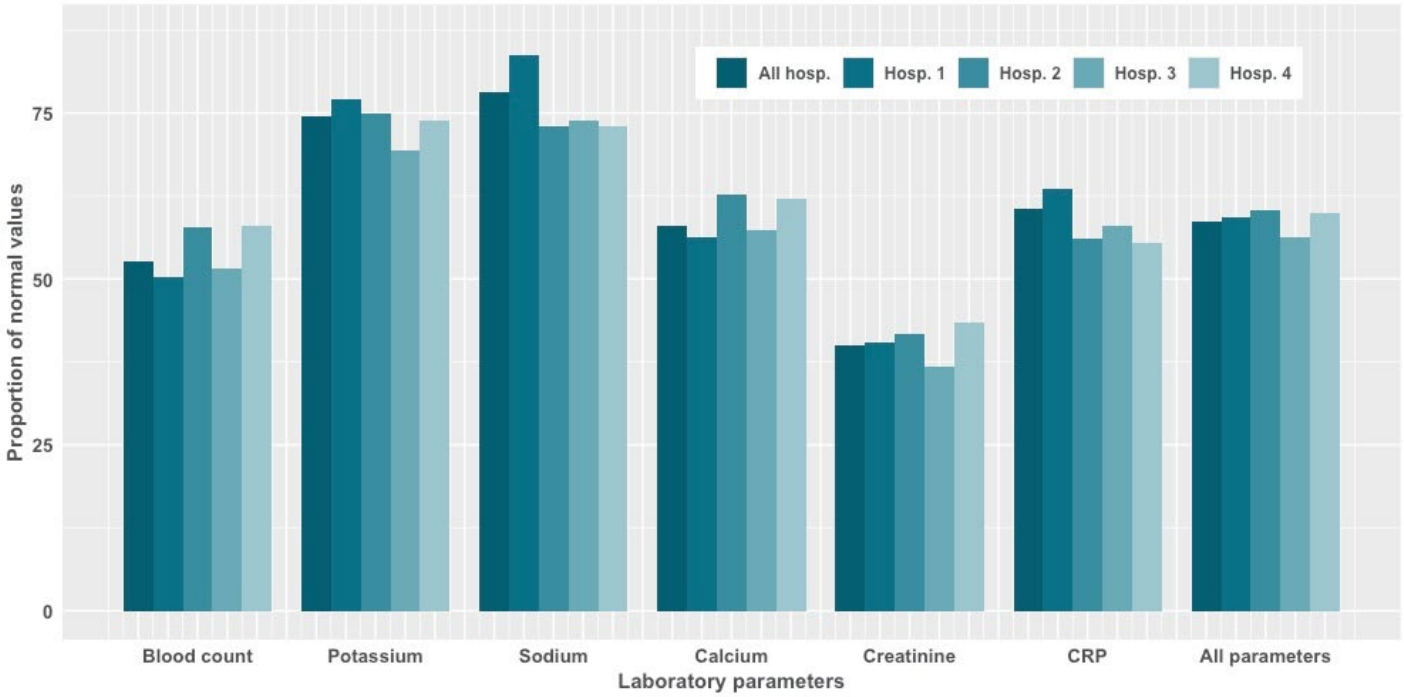

Figure 1. Proportion of normal laboratory values by parameter and hospital.

Proportion (%) of normal laboratory values by parameter and university hospital (hosp.).
Normal reference ranges considered: blood count: normal if leucocytes (4-10 G/L), platelets (150-350 G/L) and hemoglobin (117-157 g/L); potassium (3.5-4.6 mmol/L); sodium (135-145 mmol/L); corrected calcium (2.15-2.55 mmol/L); creatinine (44-80 umol/L); CRP (0-50 mg/L).

P97

Impact of a Booster Intervention of the "More time at Patients' side" Program on Patients and Healthcare Professionals: Protocol for a Cluster Randomized Controlled Trial

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Introduction: Healthcare professionals face increasing clerical burdens, leading to reduced job satisfaction, burnout, and potential patient safety risks. Despite efforts to promote patient-centered care, direct interaction time remains limited, affecting both professional fulfillment and patient experience. To address this, hospitals are implementing structured programs to enhance protected patient time, yet their effectiveness remains uncertain. The Geneva University Hospitals (HUG) developed the "More Time at Patients' Side" (MTP) program, integrating Lean management and Design Thinking to optimize patient interactions. This study evaluates an MTP booster intervention using a cluster-randomized controlled trial to assess its impact on pain management and job satisfaction.

Methods: The MTP Booster will be tested in internal medicine, surgery, rehabilitation, palliative care, and pediatrics units at HUG. The MTP program, launched in 2017, includes structured medical rounds, delegation of clerical tasks, and patient whiteboards to enhance communication. The booster intervention will follow a stepped-wedge design, with immediate reactivation in intervention units and delayed implementation in controls. The intervention consists of (A) selecting MTP standards for reinforcement based on feasibility and usefulness and (B) integrating audit and feedback into daily practice through structured observations and training.

Results: The primary outcome is the quality of pain management, assessed by timely analgesia administration. Secondary

outcomes include pain documentation, patient satisfaction, work satisfaction, burnout, turnover risk, and absenteeism. Audit and feedback involve on-site support and training of senior staff as "change champions" to sustain implementation. Other MTP audits were suspended to maintain study integrity, and external institutional projects were documented as potential confounders.

Conclusions: This study employs a rigorous randomized controlled design to evaluate the impact of targeted MTP reactivation on patient care and healthcare professional well-being. By generating robust evidence, it will guide future decisions on optimizing hospital workflows and resource allocation for improved clinical encounters.

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Impact of a Clinical Encounter Time Protection Program on Pain Management: a Retrospective Difference-in-Difference Study

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Introduction: Patient-centered care is a cornerstone for healthcare quality, leading many hospitals to implement programs that prioritize patient, even within time-constrained clinical environments. Effects of these programs are poorly evaluated. This retrospective observational cohort study aims to evaluate the impact of a patient-centered initiative aimed at protecting clinical encounter time by enhancing communication, fostering shared decision-making, and minimizing care interruptions on the quality of pain management in hospitalized patients.

Methods: Electronic health record data and a difference-in-differences estimator were used to examine changes in quality of pain management outcomes in over 15,000 patients across 80,000 hospital stays ranging from 2018 to 2022 in the University Hospitals of Geneva, Switzerland. Effects of the gradual implementation of a patient-centered clinical encounter time protection in hospital units from 2018-2022 on quality of timeliness of pain relief delivery, adequacy of pain documentation, and patient satisfaction with pain management. Data were analyzed to evaluate both the immediate and sustained effects of the program, accounting for potential selection and contamination biases.

Results: The results demonstrated significant and sustained improvements in pain management quality in intervention units. Rates of timely painkiller administration increased significantly more in intervention units compared to control units (OR 1.46, 95% CI [1.37, 1.56]), with effects persisting over time. Pain documentation also showed significant improvement in intervention units (OR 1.47, 95% CI [1.15, 1.88]), although a minor initial decline was observed, likely due to temporary staffing disruptions during implementation. However, there was no significant improvement in patient-reported satisfaction with pain management, which may reflect limitations in survey sensitivity and response biases.

Conclusions: This patient-centered program effectively improved objective measures of pain management quality in a tertiary hospital setting. However, further research is needed to assess its impact on patient experience, as well as healthcare professional engagement and satisfaction. Insights from future studies could guide the development of similar patient-centered initiatives that aim to balance efficiency with high-quality patient care.

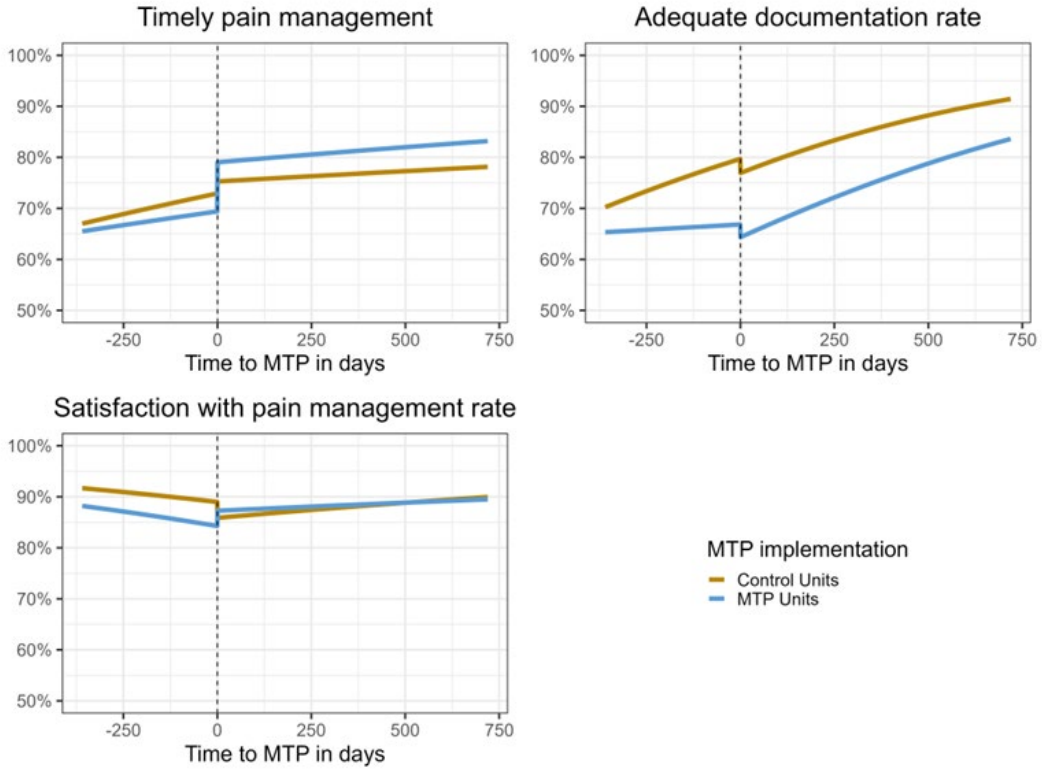

Figure 1: Predicted percentage change by the multivariable regression for each outcome

P99

Impact of Emergency Physicians' Ultrasound Certification on Length of Stay for Patients with Acute Non-Traumatic Abdominal Pain: A Retrospective Cohort Study

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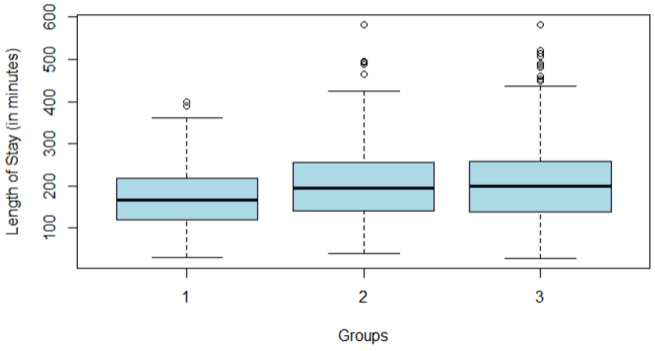
Introduction: Non-traumatic abdominal pain is a leading cause of emergency department (ED) visits.[1] Point-of-care ultrasound (POCUS) is a non-invasive, cost-effective diagnostic tool for diagnosing patients with abdominal pain.[2] However, its diagnostic accuracy depends heavily on the physician's expertise. This study evaluates the impact of ultrasound certification among emergency physicians on length-of-stay (LOS), readmission rates, and the need for additional imaging in patients presenting with non-traumatic abdominal pain to the ED.

Methods: We conducted a non-randomized, observational trial at a tertiary hospital ED in Switzerland between January 2023 and June 2024. Patients aged ≥ 18 years with acute non-traumatic abdominal pain were included. Exclusion criteria were pre-diagnosed conditions, oncological diseases, traumatic abdominal pain, missing time stamps, or lack of consent. Physicians were categorized based on their ultrasound qualification: proficient (Group 1): i.e., with Certificate of Competence in Abdominal Sonography by the Swiss Society for Ultrasound in Medicine (SGUM),[3] qualified (Group 2): i.e., with Certificate of Competence in Basic Sonography (SGUM),[3] and non-qualified (Group 3). Outcomes included LOS, readmission rates, and use of imaging. ANOVA tested LOS differences. The results were adjusted for age, gender and triage category.

Results: Of 1'824 screened patients, 967 were included. Baseline characteristics of the patients were similar across the three groups. Mean LOS was 137.1 minutes (SD ± 78.1) in Group 1, 205.5 minutes (SD ± 89.9) in Group 2, and 207.3 minutes (SD ± 90.1) in Group 3. LOS differences were significant between Group 1 and Group 2 (-68.4 minutes, $p < 0.05$) as well as between Group 1 and Group 3 (-70.2 minutes, $p < 0.05$). However, there was no significant difference between Group 2 and Group 3 (-1.8 minutes, $p = 0.78$). Readmission rates were similar across groups (Group 1: 6.9%, Group 2: 7.5%, Group 3: 4.7%). CT usage was significantly lower in Group 1 (18.5%) compared to Group 2 (53.4%) and Group 3 (55%).

Conclusion: Ultrasound proficiency significantly reduces LOS and CT utilization in patients with acute non-traumatic abdominal pain in the ED without increasing readmission rates. These findings support the implementation of comprehensive ultrasound certification programs for ED physicians to enhance clinical efficiency and optimise resource utilisation, which is crucial in mitigating ED overcrowding.



P100

Implementation of Telemedicine in the Basel Postpartum Hypertension Cohort (Basel- PPHT): A Comparison of Telemonitoring Approaches Using Patient Reported Outcome Measures (PROMs)

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Introduction: Digital technologies can support management, especially in those with postpartum hypertension. One catalyst was the SARS-COVID-19-Pandemic, which steered alternative ways to manage patients. This analysis compares two telemonitoring strategies within the Basel Postpartum Hypertension Cohort – a smartphone App for structured home BP measurement and a programmed Excel spreadsheet.

Methods: At baseline, EQ5D was assessed in all participants. Two telemonitoring strategies—a connected smartphone home BP measurement (HBPM) application (App group) and a programmed Excel spreadsheet (Excel group) —were compared using Patient-Reported Outcome Measures (PROMs) to assess, satisfaction, attrition, and BP control in women with PPHT. PROMs were evaluated, focusing on patient satisfaction, sense of safety, technical issues, and effectiveness of the tools. Satisfaction was based on a scale of 1-5, 5 = maximal satisfaction. 24hour ambulatory BP measurements were performed (V3) 3 months after delivery. BP control was mean awake <135/85mmHg.

Results:356 participants were enrolled until August 2023. The majority of participants chose HBPM 96.3%(n = 343): 65.6%(n = 225) (used the connected smartphone HBPM App, and 116 (33.8%) used the Excel tool. Mean age was 33.9 ± 5.4 years, median BMI of 24.4 kg/m² (IQR: 16.9–66.7). Etiology of PPHT was preexisting hypertension 10.1%, 31.2% gestational hypertension and 53.1% preeclampsia (overlaps were seen). Antihypertensive medication at baseline was prescribed in 87%. Mean systolic/diastolic BP of 136.4 ± 13.5 mmHg and 85.3 ± 8.6 mmHg respectively. App users had higher satisfaction levels (Table 1), with 94% reporting scores of 4–5/5 compared to 72.2% in the Excel group. Safety was reported in 98.2% of App users and 96.3% of Excel users. The App was associated with fewer technical issues (20.48% vs. 25.93%) and higher perceived utility (89.76% vs. 79.63%). BPcontrol was achieved in most patients by the first follow-up (App:29.33%, Excel: 20.7%), and more so in the App-guided group.

Conclusions: Both telemonitoring strategies were highly accepted and the patients reported a feeling of safety by patients. The App showing greater patient satisfaction, better-perceived utility, and fewer technical difficulties. These findings demonstrate the feasibility and acceptance of telemonitoring in postpartum hypertension care, offering insights into optimizing remote management strategies for this high-risk population.

	Heka	Heka N (%)	Excel	Excel N (%)
Baseline Management Plan		167/225 (74.2%)		71/116 (61.2%)
V3 AOBP systolic	116 ±10.8 115 (108,123)	99/225 (44%)	119.3 ± 13.5 117 (108, 129)	35/116 (30.2%)
V3 AOBP Diastolic	77.1 ± 7. 176 (72,83)	99/225 (44%)	78.9 ± 8.8 79 (73,84)	35/116 (30.2%)
V3 24h BP mean systolic	120.9 ± 10 121 (112,128)	147/225 (65.3%)	123.7 ± 12.9 124)113.3,132)	64/116 (55.2%)
V3 24h BP mean diastolic	76.8 ± 8 77 (72,82)	147/225 (65.3%)	78.8 ± 9.7 79 (72,84)	64/116 (55.2%)
V3 24h BP awake systolic	123.9 ±10.8 124 (115,130)	148/225 (65.8%)	123 ± 24.8 125.5 (115,134)	66/116 (56.9%)
V3 24h BP awake diastolic	80 ±8.5 79 (75,85)	148/225 (65.8%)	81.8 ± 10.1 82 (76,87.8)	64/116 (55.2%)
V3 24h BP asleep systolic	114 ± 10.1 115 (107,120)	141/225 (62.7%)	115.9 ± 13.6 115.5 (104,123)	62/116 (53.4%)
V3 24h BP asleep diastolic	69.4 ±8 69 (64,75)	141/225 (62.7%)	70.4 ± 9.7 70.5 (61.8, 78)	62/116 (53.4%)
V3 AOBP and 24h BP mean, awake and asleep controlled		29/161 (18%)		11/67 (16.4%)
additional Visits until V3		147/162 (90.7%)		59/70 (84.3%)
number of additional visits	2.4 ± 1.7 2 (1,3)		2.4 ± 1.7 2 (1,4)	

P101

Improved registration of overweight and obesity in discharge letters of hospitalised patients after educational intervention

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Introduction:Obesity is a multifactorial chronic disease causing increased mortality and risk of type 2 diabetes mellitus (T2DM), dyslipidemia, hypertension, steatohepatitis and various cancers (1, 2). Therapeutically, GLP-1 receptor agonists and dual GIP and GLP-1 receptor agonists are available for weight management. The most effective treatment remains bariatric surgery (3). As we have shown in a previous study in hospitalized patients, there seems to be an under registration of overweight and obesity (paper in submission). This study addresses the question of whether there is an improved registration of overweight or obesity in discharge letters after an educational intervention.

Methods: We conducted an intervention in September 2024 consisting of three 45 minutes lectures (evolutionary basis for obesity, 5A's approach for the management of obese patients, EOSS classification) and weekly MKSAP questions as well as journal club focused on obesity. Additionally the default admission prescriptions included the documentation of the patient BMI in the charts, and we created text modules for the obesity diagnosis. We compared the registration of overweight or obesity in form of a diagnosis, a description in nutritional status, the use of weight-reducing medication and a follow-up procedure, reviewing the discharge letter of all hospitalized patients in October 2023 and October 2024 (excluding patients who died) at the Department of Internal Medicine in Bülach Hospital.

Results: In October 2024 316 patients were included, of whom 9 BMI could not be evaluated. Of the 307 patients 41.0% were overweight or obese, 16.5% were obese. BMI was documented in the charts in 74.7%, (compared to 42.2% in 2023). There was no diagnosis of overweight in 59.5% of the 126 overweight patients (vs. 75.0% in 2023) which was a significant improvement ($p = 0.012$). We found no significant improvement in documentation of overweight nutritional status (49.2% vs. 40.7%, p-value = .195) or follow-up procedures (3 in 2024 vs. 4 in 2023).

Conclusion: An educational intervention may significantly improve registration of overweight or obesity diagnoses in discharge letters in admitted patients. Further research is needed to optimize interventions for improving the documentation of overweight and obesity diagnosis in hospitals.

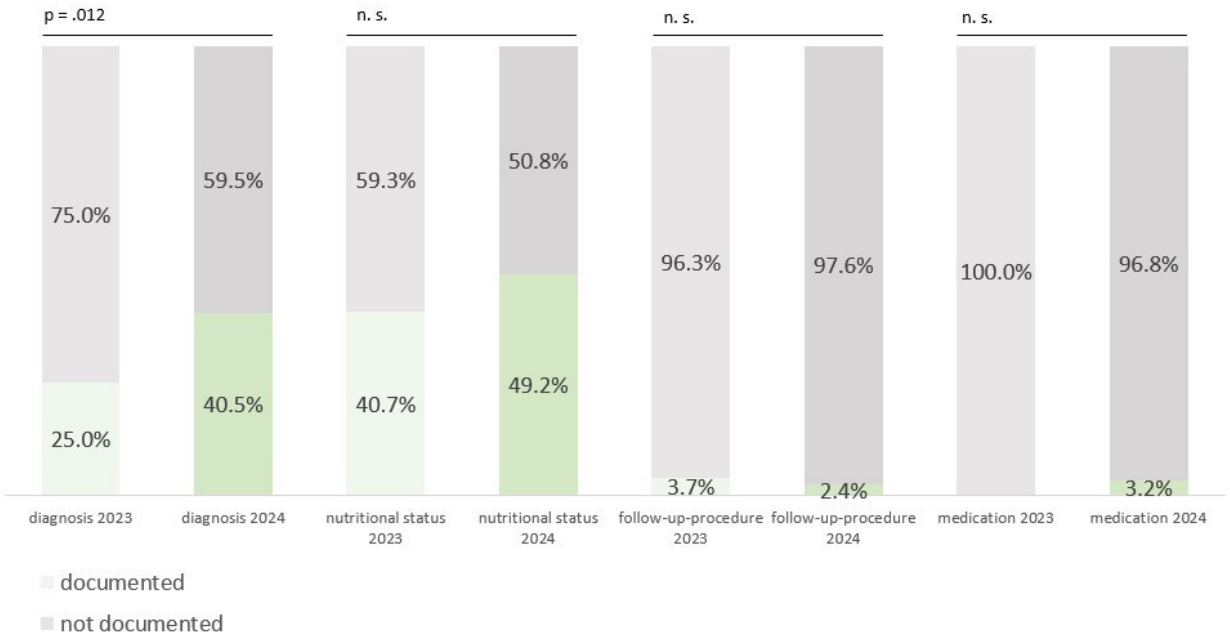

Figure 1. Percentage of patientst with or without recognition of overweight/obesity in diagnosis, nutritional status, discharge procedure and use of weight-reducing medication in October 2023 and October 2024.
n. s. = not significant

P102

Influence of the 2016 smarter medicine campaign on red blood cell transfusions in Swiss university hospitals: a LUCID NDS study

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Introduction: In 2016, Smarter Medicine published its first list of recommendations for medical inpatients. It classified red blood cell (RBC) transfusions in non-bleeding patients without an adequate haemoglobin threshold as "low-value care" (LVC) due to their association with various complications, including increased morbidity and mortality. This study aimed to determine whether the publication of these recommendations was followed by a reduction in LVC transfusions in Swiss university hospitals.

Methods: We conducted an observational, multicentric, before-and-after study using data from the LUCID NDS on general internal medicine (GIM) stays. The study included consenting adult patients hospitalized for at least 24 hours in Lausanne, Geneva, Bern, and Zurich university hospitals between 01.01.2014 and 05.02.2024 who received an RBC transfusion. Basel was excluded due to insufficient data before 2018. The publication period, from 01.05.2016 to 30.11.2016, was used to separate the before- and after-publication periods. Additionally, the three COVID-19 waves were excluded. RBC transfusions administered to non-bleeding patients (identified using ICD-10 codes) with a haemoglobin level above 80 g/L in the preceding 24 hours were classified as LVC. We assessed the proportion of LVC before and after the publication.

Results: Among 7,467 total stays, 11% (N = 823) occurred before 01.05.2016. Patient characteristics are shown in the Table. Overall, the mean haemoglobin level 24 hours before an RBC transfusion was 76.9 g/L, and LVC transfusions occurred in 29.2% (N = 2,175) of stays. The proportion of LVC decreased from 39.4% in the before-publication period to 27.9% in the after-publication period across all participating hospitals (Figure). A decreasing trend was also observed before the publication period.

Conclusion: Over the past decade, approximately one-third of RBC transfusions may be considered LVC. Following the publication of smarter medicine's recommendations in 2016, LVC transfusions decreased by 11.5%. Further analyses are needed to determine whether the publication played a significant role, as a declining trend was already apparent before the recommendations were released.

Table: Comparison of characteristics of patients within included stays.

	Overall (N = 7'467)	Pre-publication period (01/2014 – 04/2016) (N = 823)	Post-publication period (12/2016 – 02/2024) (N = 6'644)
Age at admission in years, median (IQR)	68.0 (20.0)	67.0 (21.0)	68.0 (19.0)
Female sex, n (%)	2'869 (38.9)	305 (38.9)	2'564 (38.9)
Length of stay in days, median (IQR)	17.0 (19.7)	21.1 (24.2)	16.5 (19.4)
Setting prior to admission, n (%)			
Long-term care facility	142 (1.9)	22 (2.8)	120 (1.8)
Hospital or rehabilitation	2'316 (31.4)	218 (27.8)	2'098 (31.8)
Home	4'495 (60.9)	521 (66.4)	3'974 (60.2)
Setting at discharge, n (%)			
Long-term care facility	290 (3.9)	19 (2.4)	271 (4.1)
Hospital or rehabilitation	3'171 (42.9)	359 (45.7)	2'812 (42.6)
Home	3'445 (46.7)	394 (50.2)	3'051 (46.2)
BMI, median (IQR)	24.3 (6.5)	24.0 (6.2)	24.4 (6.5)
Comorbidities, n (%)*			
Ischemic cardiopathy[a]	1'989 (26.9)	144 (18.3)	1'845 (28.0)
Heart failure[b]	1'966 (26.6)	154 (19.6)	1'812 (27.5)
History of stroke or TIA[c]	431 (5.8)	41 (5.2)	390 (5.9)
Chronic pulmonary disease[d]	853 (11.6)	63 (8.0)	790 (12.0)
Liver disease[e]	1'117 (15.1)	112 (14.3)	1'005 (15.2)
Diabetes[f]	1'878 (25.4)	133 (16.9)	1'745 (26.4)
Chronic kidney disease[g]	2'298 (31.1)	149 (19.0)	2'149 (32.6)
Cancer[h]	3'391 (45.9)	321 (40.9)	3'070 (46.5)
Dementia[i]	172 (2.3)	6 (0.8)	166 (2.5)
Polymedication (>=5)†, n (%)	5'691 (77.1)	445 (56.7)	5'246 (79.5)
Charlson Comorbidity Index‡, mean (SD)	5.0 (2.9)	4.4 (2.7)	5.1 (2.9)

Abbreviations: BMI: Body Mass Index, TIA: Transient Ischemic Attack.

*: All diagnoses coded during the same stay were considered.

a: includes any diagnoses under the ICD-10 codes I20-I25 (ischemic heart diseases).

b: includes any diagnoses under the ICD-10 codes I50 (heart failure) or I11.0 (hypertensive heart disease with (congestive) heart failure).

c: Includes any diagnosis under the ICD-10 codes I60 (subarachnoid haemorrhage), I61 (intracerebral haemorrhage), I62 (other nontraumatic intracranial haemorrhage), I63 (cerebral infarction), I64 (stroke, not specified as haemorrhage or infarction) or G45 (transient cerebral ischaemic attacks and related syndromes).

d: includes any diagnoses under the ICD-10 codes J40-J47 (chronic lower respiratory diseases).

e: includes any diagnoses under the ICD-10 codes K70-K77 (diseases of liver).

f: includes any diagnoses under the ICD-10 codes E10-E14 (diabetes mellitus).

g: includes any diagnoses under the ICD-10 codes N18 (chronic kidney disease).

h: includes any diagnoses under the ICD-10 codes C00-C97 (malignant neoplasms).

i: includes any diagnoses under the ICD-10 codes F00* (dementia in Alzheimer disease), F01 (vascular dementia), F02* (dementia in other diseases classified elsewhere), F03 (unspecified dementia) or R54 (senility).

†: as commonly defined in the literature. Considers the number of prescriptions on the last day of hospitalisation.

‡: as calculated with the formula available at https://www.mdcalc.com/calc/3917/charlson-comorbidity-index-cci#evidence.

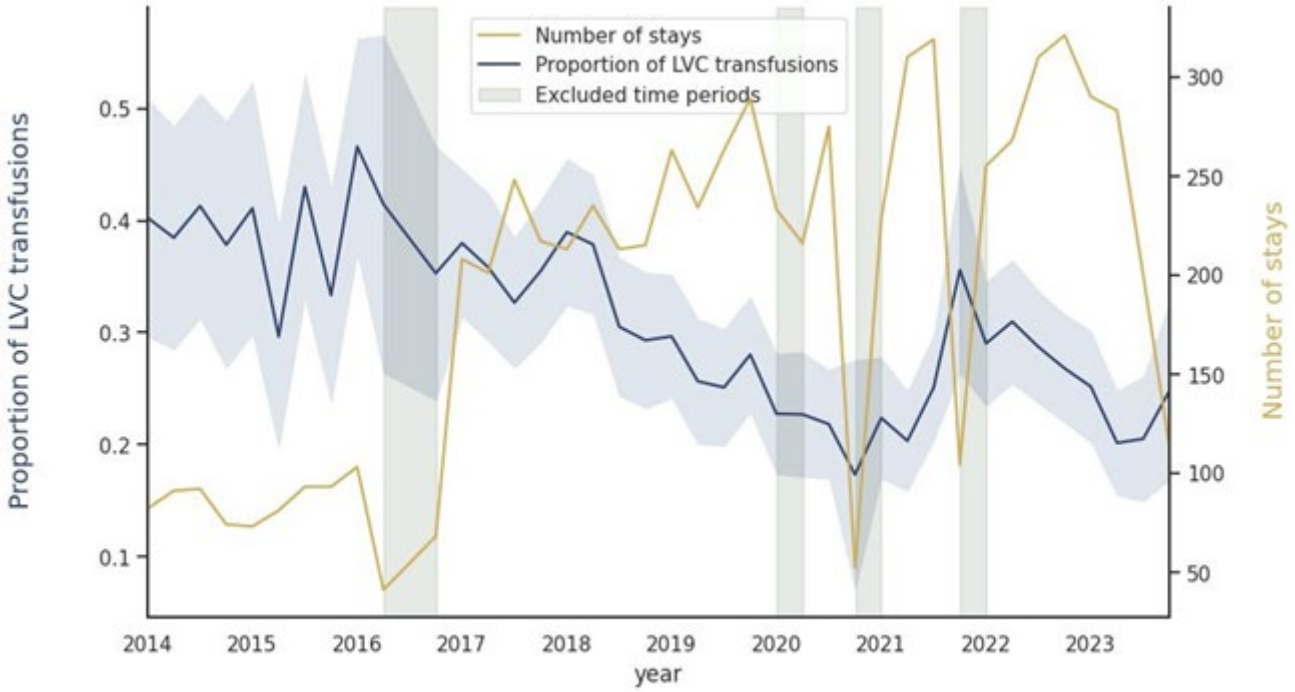

Figure: Number of stays and proportion of inappropriate RBC transfusions over time. Stays increased from 2016 due to the adoption of general consents in hospitals.

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Influence of the 2016 smarter medicine campaign on sedatives prescriptions in older adults in Swiss university hospitals: a LUCID NDS study

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Introduction: Smarter Medicine published its first list of recommendations for medical inpatients in 2016. It classified the prescription of benzodiazepines (BZD) and other sedatives in adults aged ≥65 years as "low-value care" (LVC) due to its association with various complications, such as prolonged hospital stays and falls. This study aimed to determine whether the publication was followed by a reduction in BZD and other sedative prescriptions in older adults in Swiss university hospitals.

Methods: Observational, multicentric, before-and-after study using data from the LUCID NDS on general internal medicine (GIM) hospitalisations. The study included consenting adult patients aged ≥65 years who were hospitalised for at least 24 hours in Lausanne, Geneva, Bern, and Zurich university hospitals between 01.01.2014 and 05.02.2024. Basel was excluded due to insufficient data before 2018. The publication period, from 01.05.2016 to 30.11.2016, separated the before- and after-publication periods. Additionally, the three COVID-19 waves were excluded. The presence of at least one prescription of BZD or other sedatives, such as Z-drugs and barbiturates, during a hospital stay in patients without alcohol dependence, epilepsy, or psychiatric comorbidities (identified using ICD-10 codes) was classified as LVC. We assessed the proportion of such LVC before and after the publication.

Results: Among 58,554 total stays, 17.5% (N = 10,275) occurred before 01.05.2016. Patient characteristics are shown in the Table. Overall, inappropriate BZD or other sedative prescriptions occurred in 20.5% (N = 12,021) of stays. Among BZD, lorazepam was the most frequently prescribed, accounting for 35.1% of LVC prescriptions, while Z-drugs comprised 27.1%. The proportion of LVC decreased from 30.4% before publication to 18.4% after publication across participating hospitals (Figure).

Conclusion: Over the last decade, BZD or other sedatives were prescribed in approximately one in five hospital stays for adults aged ≥65 years. We observed a 12% decrease in these LVC prescriptions in Swiss university hospitals following the publication of the smarter medicine recommendation in 2016. Efforts must continue to strengthen this positive trend.

Table: Comparison of characteristics of patients within included stays.

	Overall (N = 58'554)	Pre-publication period (01/2014 – 04/2016) (N= 10'275)	Post-publication period (12/2016 – 02/2024) (N = 48'279)
Age at admission in years, median (IQR)	77.0 (11.0)	75.0 (10.0)	77.0 (11.0)
Female sex, n (%)	23'686 (40.7)	4'156 (41.1)	19'530 (40.6)
Length of stay in days, median (IQR)	5.9 (7.3)	6.6 (8.7)	5.8 (7.1)
Setting prior to admission, n (%)			
Long-term care facility	2'017 (3.5)	468 (4.6)	1'549 (3.2)
Hospital or rehabilitation	14'420 (24.7)	1'974 (19.4)	12'446 (25.8)
Home	38'761 (66.3)	7'461 (73.5)	31'300 (64.8)
Setting at discharge, n (%)			
Long-term care facility	2'542 (4.4)	454 (4.5)	2'088 (4.3)
Hospital or rehabilitation	20'218 (34.6)	3'015 (29.7)	17'203 (35.6)
Home	33'026 (56.5)	6'442 (63.5)	26'584 (55.1)
BMI, median (IQR)	25.2 (6.4)	25.7 (6.4)	25.1 (6.4)
Comorbidities, n (%)*			
Ischemic cardiopathy[a]	18'272 (31.3)	1'476 (14.5)	16'796 (34.8)
Heart failure[b]	13'513 (23.1)	1'211 (11.9)	12'302 (25.5)
History of stroke or TIA[c]	5'112 (8.7)	617 (6.1)	4'495 (9.3)
Chronic pulmonary disease[d]	7'087 (12.1)	590 (5.8)	6'497 (13.5)
Liver disease[e]	2'340 (4.0)	192 (1.9)	2'149 (4.4)
Diabetes[f]	13'119 (22.5)	1'096 (10.8)	12'023 (24.9)
Chronic kidney disease[g]	15'985 (27.4)	1'243 (12.2)	14'742 (30.5)
Cancer[h]	11'027 (18.9)	1'005 (9.9)	10'022 (20.8)
Dementia[i]	2'741 (4.7)	162 (1.6)	2'579 (5.3)
Polymedication (>=5)†, n (%)	42'562 (72.8)	7'280 (71.7)	35'282 (73.1)
Charlson Comorbidity Index‡, mean (SD)	4.8 (2.2)	3.9 (1.7)	5.0 (2.3)

Abbreviations: BMI: Body Mass Index, TIA: Transient Ischemic Attack.

*: All diagnoses coded during the same stay were considered.

a: includes any diagnoses under the ICD-10 codes I20-I25 (ischemic heart diseases).

b: includes any diagnoses under the ICD-10 codes I50 (heart failure) or I11.0 (hypertensive heart disease with (congestive) heart failure).

c: Includes any diagnosis under the ICD-10 codes I60 (subarachnoid haemorrhage), I61 (intracerebral haemorrhage), I62 (other nontraumatic intracranial haemorrhage), I63 (cerebral infarction), I64 (stroke, not specified as haemorrhage or infarction) or G45 (transient cerebral ischaemic attacks and related syndromes).

d: includes any diagnoses under the ICD-10 codes J40-J47 (chronic lower respiratory diseases).

e: includes any diagnoses under the ICD-10 codes K70-K77 (diseases of liver).

f: includes any diagnoses under the ICD-10 codes E10-E14 (diabetes mellitus).

g: includes any diagnoses under the ICD-10 codes N18 (chronic kidney disease).

h: includes any diagnoses under the ICD-10 codes C00-C97 (malignant neoplasms).

i: includes any diagnoses under the ICD-10 codes F00* (dementia in Alzheimer disease), F01 (vascular dementia), F02* (dementia in other diseases classified elsewhere), F03 (unspecified dementia) or R54 (senility).

†: as commonly defined in the literature. Considers the number of prescriptions on the last day of hospitalisation.

‡: as calculated with the formula available at https://www.mdcalc.com/calc/3917/charlson-comorbidity-index-cci#evidence.

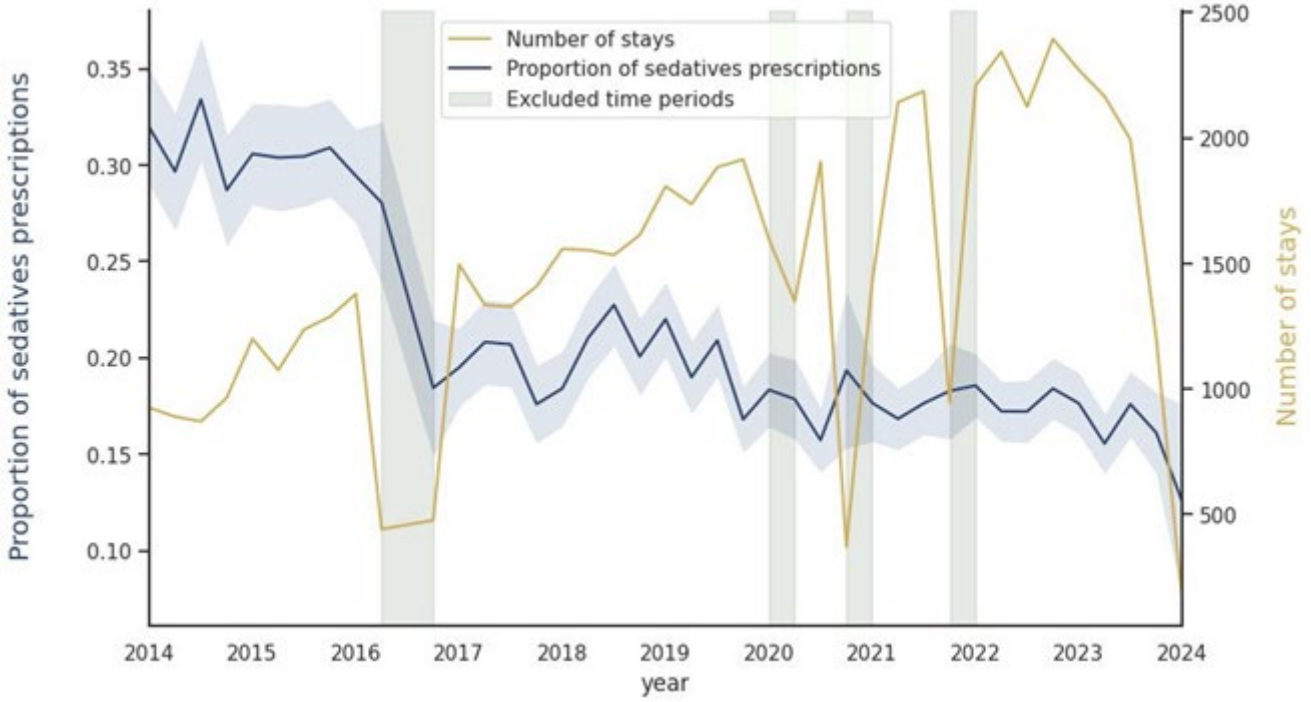

Figure: Number of stays and proportion of inappropriate BZD or other sedatives prescriptions over time. Stays increased from 2016 due to the adoption of general consents in hospitals.

P104

Needs and barriers during hospital to home care transition - analysis of a Complex System Intervention

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Introduction: Readmission of patients after discharge from the hospital results in increased morbidity, mortality, and healthcare costs. Multimorbidity, polypharmacy, and miscommunication among providers are associated with a higher risk of readmission. Studies that aim to reduce readmission rates show mixed results. Interventions are often complex, and many factors may hinder the successful implementation of multicomponent interventions. We aimed to assess needs and barriers during the implementation of a multicomponent, interprofessional intervention to reduce rehospitalization rates in an ongoing RCT at the Baden Cantons Hospital.

Methods: Complex System Intervention Analysis of an advanced practice nurse (APN)-led hospital-to-home program. We conduct ongoing surveys and interviews with patients, relatives, staff, APNs, pharmacists, home care nurses (Spitex), and primary care providers. The data was analyzed using an inductive content analysis method.

Results: Patients and caregivers: Interviews with twenty-five consecutive patients included in the study (fourteen intervention group, eleven control group). Although most patients reported that by the time of discharge, they received their medication on the same day from the pharmacy, seven patients received them one day later, and two patients three or more days later (Table). Patients found a follow-up duration of five days sufficient. Interestingly, most participants read the doctor's report, but seven partially understood it, and fourteen others did not understand it due to medical terminology. The study team (five Interviews) found that it was important that the stakeholders knew about the intervention, which facilitated the implementation. They also found it important that they were involved in the intervention and implementation from very early on.

Conclusion: We describe important needs and barriers for the successful implementation of a complex interprofessional and multimodal hospital-to-home discharge intervention. Gaps in receiving discharge medication, early staff involvement, and flexible adaptation of the intervention schedules are important lessons for the future.

Table: Domains and results of the complex intervention analysis

Domain	Description	Responses
External Context	Environmental factors impacting implementation, e.g., stakeholders' relationship	Awareness of the ongoing study is significant:«It wasn't well-known at first. Many people didn't really know exactly what we do. They need repeated updates»
Patients/Caregivers	Goals/needs/preferences	Evaluation of calls: 8 helpful/4 less useful/2 no answer. Intervention days:11 preferred 5 days/1 suggested longer/2 no answer. Hotline vs. calls: 3 favored a hotline/10 disagreed/1 no answer. Organization of Medication: 16 received medication on discharge day/7 one day later/1 three days later/1 four days later/1 no answer. Medical report: 20 read it/4 didn't (reasons: terminology/visual impairments). Understanding report:16 fully understood/7 partially/14 did not. (reasons: medical terms)
Provider	Roles in care transition	Collaboration among all stakeholders is essential:«The intervention is not meant to replace general practitioners but rather to stabilize the transition phase between hospital discharge and outpatient care.»
Organizational Characteristics	Structure/network/communication/ readiness	Interdisciplinary teamwork within the study team is essential for complex cases.
Intervention Characteristics	Intervention type/feasibility in hospital daily work	Intervention duration: The team prefers flexibility based on patient needs: «Because weekends are the critical time when patients are more likely to be rehospitalized, as the family doctor isn't available then.»
Process of Implementation	Reflection at individual and organizational levels.	Collaboration works well when engaging with individuals who are familiar with the study.

P105

Post-COVID consultation at the Winterthur Cantonal Hospital - follow-up over two years

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Introduction: In early 2021, the Pulmonology Department at the Cantonal Hospital Winterthur (KSW) initiated a multidisciplinary consultation for patients with persistent post-COVID-19 symptoms. In collaboration with the ZHAW Zurich University of Applied Sciences, an evaluation was conducted to document the course of symptoms and service satisfaction. Here we present follow-up data on symptoms two years after the initial visit. The study was approved by the Cantonal Ethics Committee.

Methods: Data were collected at consultation (t1) and after 2 (t2), 6 (t3), and 24 months (t4). The survey covered sociodemographics, sick leave, symptom severity (VAS 0–10(= highest)), general health (VAS 0–100(= best)), and standardized questionnaires: Post-COVID Function Scale (PCFS, 0–4(= worst)) and Chalder Fatigue Scale (CFS, 0–11(= worst)). Statistical differences between time points were calculated using Cochran's Q test (dichotomous variables) and Friedman's test (ordinal/continuous variables).

Results: At t1 average age was 43.7 years, 66% were women, and most were healthy pre-infection. Only six required hospitalizations. There were 28/50 patients for whom data were available from all time points. Fatigue and reduced physical performance were most common, improving gradually over time. Pain and shortness of breath were less frequent (table1).

Conclusion: The study reveals gradual recovery from post COVID-19 symptoms, though physical performance and fatigue remained challenging. At t1, responders and non-responders did not differ in most outcomes except for poorer general health and more chronic fatigue in the responders (data not shown). These findings emphasize the need for ongoing multidisciplinary and patient-centered care to address long-term sequelae.

Table 1: Symptoms at t1-t4. CFS Chalder Fatigue Scale; PCFS post-COVID-functional status; VAS Visual Analog Scale. Significant changes in bold

Symptom	**t1 (n = 50)**	**t2 (n = 44)**	**t3 (n = 35)**	**t4 (n = 28)**	**p-value**
Sick leave (n/%)	25/50%	19/43%	12/34%	6/21%	.181
Fatigue (n/%, VAS 0-10)	47/94%, 7.0	39/89%, 6.7	31/89%, 5.8	22/79%, 4.8	.038
Reduced physical performance (n/%, VAS 0-10)	41/82%, 6.9	36/82%, 5.7	23/66%, 4.8	18/64%, 4.3	.446
Pain (n/%, VAS 0-10)	16/32%, 7.5	18/41%, 2.7	9/26%, 2.1	6/21%, 1.5	.343
Shortness of breath (n/%, VAS 0-10)	14 (28%), 6.9	14 (32%), 1.9	9 (26%), 1.5	8 (29%) 1.7	.848
Cognitive impairments (n/%, VAS 0-10)	3/6%, 8.3	12/27%, 5.6	10/29%, 5.1	6/21%, 6.8	.080
General Health (VAS 0-100)	55.8	54.1	66.7	71.3	.003
PCFS (0-4)	2.6	2.1	1.7	1.6	<.001
CFS (0-11)	9.2	8.6	7.4	7.4	.029

P106

Public Perspective on Overmedicalisation: An Exploratory Qualitative Analysis of Online Comments Following a News Article on the LUCID NDS Project

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Background: Overmedicalisation, or low-value care, refers to unnecessary or potentially harmful medical practices—an emerging global concern. However, public awareness of this issue remains limited. In Switzerland, the LUCID National Data Stream, a recent research initiative was launched to identify and monitor low-value care in medical hospitalised patients. In 2022, 20Minutes, a widely distributed Swiss daily newspaper, published an online article about the LUCID project. This study aims to assess public perception of overmedicalisation by analysing reactions in the article's comment section.

Method: After removing duplicates, 86 unique comments were analysed using IRaMuTeQ, a textual and statistical analysis software. We used a quantitative analysis to generate a word cloud based on lexical frequency, while a qualitative hierarchical classification (Reinert method) grouped 48 index comments into thematic classes. Expert validation ensured robustness. Results were translated from French to English for publication with the editorial support of an English-speaking patient partner.

Results: Quantitative analysis identified the most frequently used terms such as "physician" (40 occurrences), "sickness" (27 occurrences) and "drugs" (25 occurrences) (figure 1). IRaMuTeQ classified 86 comments into two branches: A) healthcare practices (54.1%) and B) healthcare system policy (45.9%) (figure 2). Branch A focused on overmedicalisation, unnecessary interventions, overprescription, and the need for improved patient-provider communication and accountability. Branch B addressed mistrust in the Swiss healthcare system, financial inequities, and systemic inefficiencies, including concerns about billing transparency and perceived misuse of resources.

Conclusion: The study highlights two major public concerns regarding overmedicalisation: inappropriate medical practices and financial inequities in the Swiss healthcare system. Strengthening communication and effectively disseminating the findings of the LUCID project will be crucial in addressing public concerns.

Figure 1: Word cloud generated by IRaMuTeQ (N = 86 comments analysed). Five most frequent terms: "physician" (médecin), "sickness" (maladie), "to go" (aller), "drugs" (médicament) and "to pay" (payer).

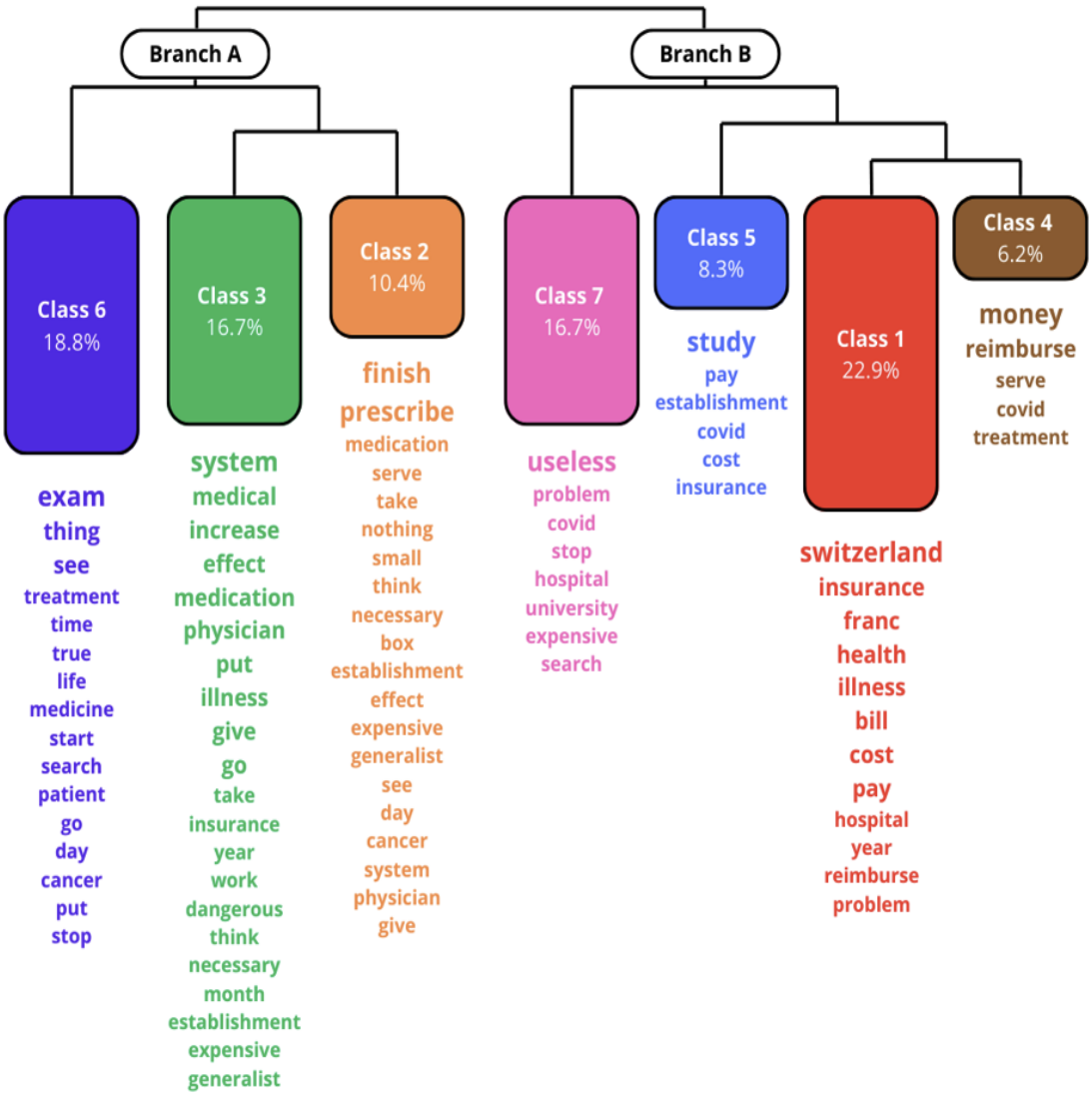

Figure 2: English adaptation of the dendrogram generated by IRaMuTeQ. (N = 48 comments analysed)

P107

Quality of life in cancer survivors before and after multimodal educational and physiotherapy programme: a pilot feasibility study

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Introduction: Over the past three decades, advances in diagnostic and therapeutic options have led to an increase in the number of cancer survivors. After completing their cancer treatment, general practitioners will have to care for these patients suffering from many long-term effects that decrease quality of life. In this pilot study, we aimed to assess whether a newly developed multimodal and interprofessional programme does reflect the needs of survivors and can improve quality of life.

Methods: A group programme of up to 15 cancer survivors included in a once weekly educational (nutrition, healthy lifestyle, long-term effects) and physical therapy programme for 10 weeks was tested. Before and after the training, we assessed quality of life (EQ-5DL, scale 0-100) and the distress thermometer (score 1-10). Additional outcomes included the overall feasibility, adherence and physical activity of participants, satisfaction and patient needs (Likert scale, strongly disagree – strongly agree).

Results: Out of 34 contacted patients, 13 were included, with 10 participants attending all or most sessions with a completion rate of 77%. Adherence was high (69% completing ≥80% of the sessions). At baseline the mean EQ-5DL was 70.56 (SD±11.02) and after the programme 77.06 (SD±10.51) (p = 0.1328). There was a significant reduction in psychological distress (6.556 (SD±1.49) to 4.813 (SD±1.81) (p = 0.0153)) and an improved physical fitness (increased sit-to-stand test repetitions (p = 0.0159)). The sit-to-stand test speed remained unchanged (p = 0.0773). Satisfaction was high and patients reported increased motivation and benefits from interactions with other survivors (Figure 1).

Conclusion: Our pilot trial during the implementation of a multimodal educational and physiotherapy programme showed the feasibility and high adherence of cancer survivors to the programme. Self-perceived quality of life increased and the satisfaction was high.

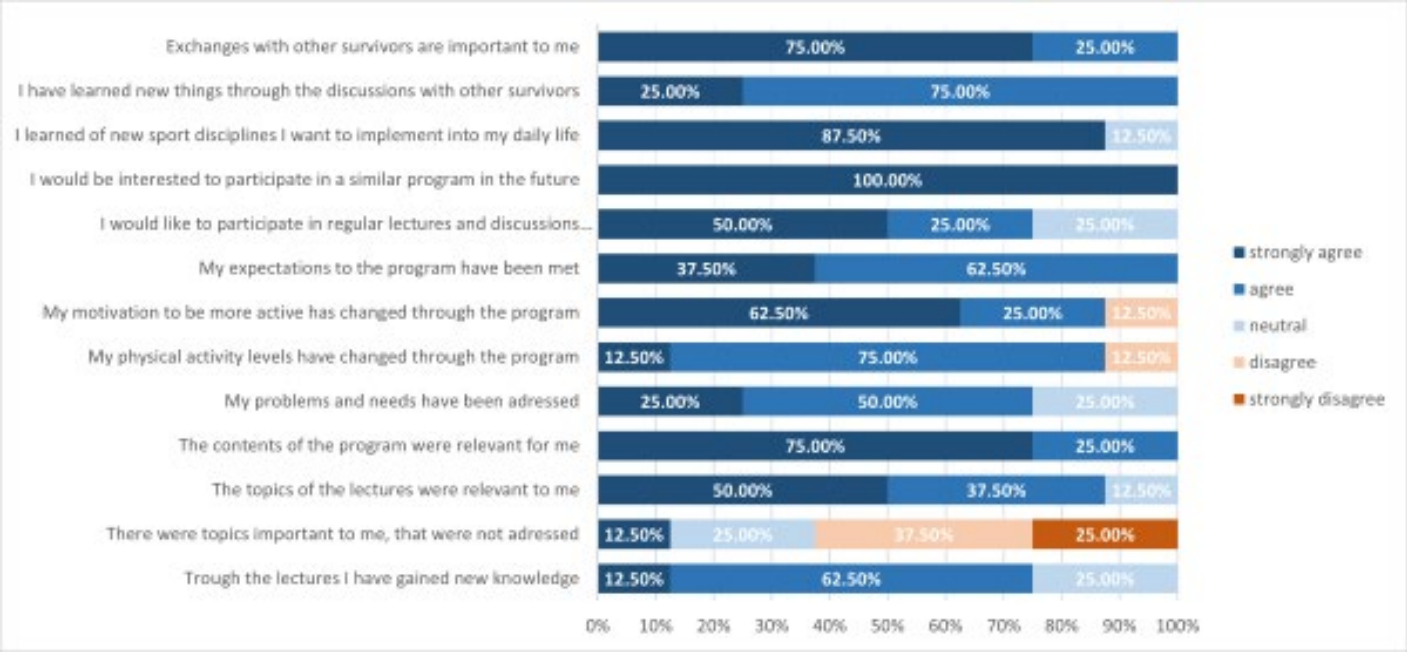

Figure 1: Feedback questionnaire at the end of intervention, regarding patients' needs addressed in the programme and their overall satisfaction (N = 8).

P108

Single Centre Drug-Drug Interaction study with Levothyroxine/Magnesium-Citrate and Levothyroxine/Magnesium-Aspartate in healthy subjects – The ThyroMag study

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Introduction: Divalent cations such as calcium and ferrous sulfate have been shown to interfere with the absorption of levothyroxine due to complexing (1, 2). Magnesium is a dietary supplement and also part of many multivitamin preparations. To our knowledge, its effects on levothyroxine absorption have never been studied. We aimed to show and quantify these effects.

Methods: The open-label cross-over pharmacokinetic study was conducted in 15 healthy, euthyroid adults. 1 mg of levothyroxine was administered in tablet form alone or co-administered with either magnesium aspartate or magnesium citrate as powder dissolved in water. We measured thyroxine absorption over a 6-hour period after ingestion of the study drugs. Every subject received all treatments in a randomized sequence with a washout period of four weeks. Primary endpoint was the area under curve (AUC) of thyroxine, secondary endpoints C_{max} and T_{max}.

Results: Coadministration of magnesium aspartate significantly reduced thyroxine AUC by 12 % (geometric mean ratio, GMR = 0.88, 95% CI 0.81 to 0.95, p = 0.002) and coadministration of magnesium citrate reduced thyroxine AUC by 7 % compared with levothyroxine given alone (GMR = 0.93, 95% CI 0.86 to 1.01, p = 0.076). In line with these findings, C_{max} was significantly reduced by 7% and T_{max} was significantly increased by 17% when magnesium aspartate was co-administered compared with levothyroxine alone, whereas the change in C_{max} and T_{max} was smaller when magnesium citrate was co-administered.

Conclusion: Magnesium interferes with levothyroxine absorption in a similar manner to what was already described for other divalent cations. However, we found comparably smaller effects, possibly due to the galenic formulation. Powders dissolved in water and taken in liquid form may interfere less with levothyroxine due to faster gastrointestinal passage. Hypothyroid patients should nonetheless be advised to take levothyroxine separated from magnesium containing formulations, especially if TSH levels are desired to be within a narrow range. If levothyroxine and magnesium are taken together, magnesium citrate may be a better option than magnesium aspartate.

P109

The Future of Medical Discharge Reports: A Study on Tabular Formats for Better Communication and Efficiency

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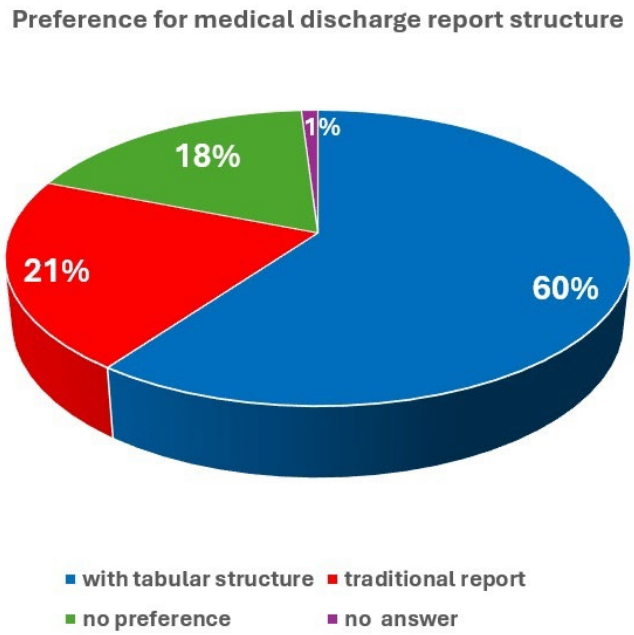
Introduction: A medical discharge report, while crucial for a safe transition between inpatient and outpatient care, is a known risk area for communication deficits. Studies suggest that compared to traditional free-text reports, structured and more concise medical documentation could be beneficial. We evaluated the acceptance of a tabular form of discharge reports among medical professionals.

Methods: Various types of discharge reports were converted into a structured table format. Both versions of each report were presented to proponents of several medical professions for quality assessment, using a structured questionnaire. Statistical analyses were performed in R.

Results: A total of 131 questionnaires were analysed by general practitioners, resident and senior physicians, and medical coders. Of these, 79 (60%) preferred the tabular structure, while the rest either preferred the traditional report (21%), had no preference (18%), or gave no answer (1%). The preference for the tabular structure was significantly above 50% (p = 0.013)

and was most prominent among general practitioners (70%). There was a significant correlation between the preference for the tabular structure and both professional experience and age, with no difference found in relation to gender. Older individuals (p-value: 0.006, odds ratio: 0.336, confidence interval: 0.143–0.757) and those with more than 10 years of experience (p-value: 0.018, odds ratio: 0.399, confidence interval: 0.179–0.871) preferred the tabular structure more frequently. On a Likert scale from 0 to 10, satisfaction with tabular reports (mean = 7.11) was significantly higher than with traditional reports (mean = 6.14, p <0.01). Reports with a tabular structure also resulted in shorter processing times compared to traditional reports (p = 0.009).

Conclusion: Our study shows that tabularly structured discharge reports received significantly higher ratings than traditional reports and were preferred by 60% of respondents, indicating broad acceptance. Among general practitioners 70% preferred the tabular structure. Our data suggest that tabular reports could save time and ensure completeness. These findings could help reduce the bureaucratic burden and support the development of standardized medical discharge documentation, ultimately improving report quality and patient care.



P110

What should we recommend cancer survivors who complain of persistent fatigue? A systematic review of guidelines

J. Ayoson[1,2], N. Schneider[1,2], E. Hägler-Laube[1], M. Wertli[1,3]

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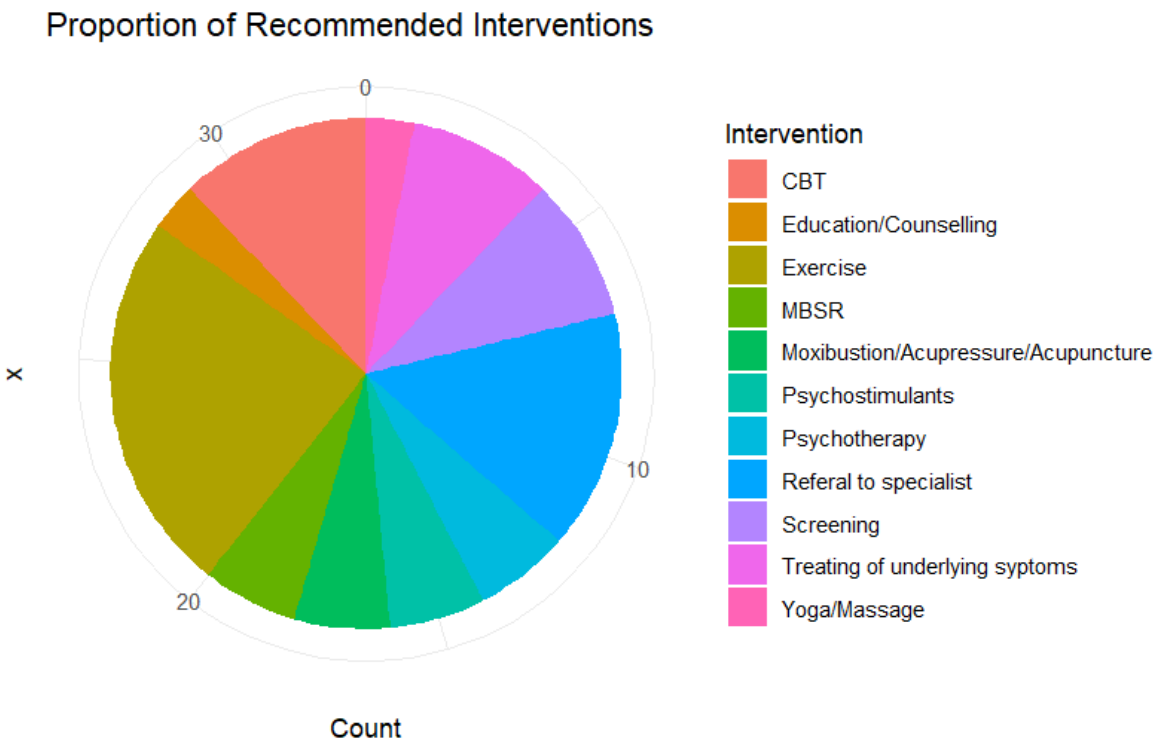
Introduction: Cancer-related fatigue (CRF) is a common and debilitating issue for cancer survivors, significantly impacting quality of life[1]. Despite its prevalence, CRF remains underdiagnosed and undertreated[2]. Cancer survivors will eventually – once follow-up oncological care is completed, be under the guidance of primary care physicians. To date, it is unclear what treatments should be recommended in case of persisting fatigue. Addressing these gaps is crucial for improving survivorship care.

Methods: In this cross-sectional analysis of guideline recommendations, we systematically searched PUBMED, MEDLINE, Embase, Cochrane Library, and professional society websites in December 2024. Guidelines published between 2000 and 2024 on CRF management in adult cancer survivors were included. Two independent reviewers assessed guideline quality, extracted recommendations, and categorized the strength of recommendations and level of evidence using the GRADE framework.

Results: Of 455 references screened, eight guidelines from six professional societies met inclusion criteria. Quality was high in one (12.5%), moderate in five (62.5%), and low in two (25%) guidelines. Most guidelines recommended exercise, especially aerobic and resistance training, though details varied. Cognitive-behavioral therapy (CBT) was strongly endorsed, while mindfulness-based stress reduction (MBSR) received conditional support. Pharmacological interventions were limited to refractory cases due to safety concerns. Guidelines inconsistently recommended CRF screening, and non-pharmacological therapies like acupuncture had limited endorsements due to weak evidence.

Conclusion: In this analysis of current guidelines, we summarize recommendations and the level of evidence for exercise, psychosocial support, and individualized care in cancer related persisting fatigue. Although cancer survivors are considered to be cured, persisting fatigue affects decreases quality of life and the ability to return to full function. In primary care, this problem is underrecognized and should receive more attention.



P111

Advantages of cTPA over coronary calcium for cardiovascular risk stratification in men and women

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Introduction: Evidence suggests carotid ultrasound detects significant atherosclerosis earlier, and in more women, than coronary calcium scoring.

Methods: We used standard imaging procedures for carotid total plaque area (cTPA) and coronary calcium Agatston scores (CCS) obtained between 2003 and 2024 and calculated posttest imaging risk mismatch with SCORE2 as the prior probability.

Results: In 907 patients (age 59.9 ± 9.4, 34% female), carotid atherosclerosis prevalence (cTPA>21mm^2; CCS>10) was higher in all age groups with difference in prevalence of 23%, 26%, 18%, 13%, 13%, 12%, and 10% respectively. The prevalence of cTPA>21mm^2 / CCS = 0 versus cTPA = 0 / CCC>10 was 23.4% versus 2.5% in women (p <0.0001) and was 17.2% versus 2.9% in men (p <0.0001), and the difference in prevalence was statistically significantly higher in women (p = 0.02). In 608 patients, high posttest SCORE2-cTPA having low posttest SCORE2-CCS risk was observed in 57 (9.4%) and vice versa in 50 (8.2%) patients. Using a clinical multivariate stepwise logistic regression model, nicotine (Odds ratio 2.0 [p = 0.01, 95%CI 1.1-3.5] and HDL (p = 0.02, Odds ratio 0.4 [95%CI 0.2-0.8] remained significant for SCORE2-cTPA mismatch. In the model for SCORE2-CCS mismatch, only SCORE2 risk class was significant (p = 0.02, Odds ratio 1.8 [95%CI 1.1-3.0]. The prevalence of SCORE2-cTPA and SCORE2-CCS was 0%, 1.2% (for both), and was 5.9% for SCORE2-cTPA / 4.9% for SCORE2-CCS in SCORE2 posttest risk of <2.5%, <5.0%, and <7.5%, respectively.

Conclusion: In consecutive cardiology patients, relevant carotid atherosclerosis is more prevalent than coronary calcium in patients up to 55 years. SCORE2 posttest risk mismatch is 0% in patients with SCORE2-/OP risk <2.5% and increases in higher risk groups, especially in patients with current smoking, low HDL cholesterol (regarding SCORE2-cTPA) and in patients with higher SCORE2 risk scores (SCORE2-CCS). Our data support the use of cTPA as the initial and environmentally friendly imaging test, especially in women.

Table 1: Baseline Characteristics of patients

ALL	907 (35% Female)
AGE ± SD	59.9 ± 9.4
SMOKE (%)	254 (28%)
DIABETES MELLITUS (%)	110 (12%)
FAMILY HX ASCVED (%)	142 (16%)
SYSTOLIC BLOOD PRESSURE ± SD	132 ± 19
TPA mm^2 ± SD	57 ± 55
CAC Agatston Score ± SD	224 ± 595
CHOL (average, SD, number of missing values)	5.4 ± 1.3 (281)
HDL (average, SD, number of missing values)	1.4 ± 0.5 (299)
LDL (average, SD, number of missing values)	3.3 ± 1.3 (296)
TG (average, SD, number of missing values)	1.8 ± 1.2 (300)

Table 2: Detection of CAC+ using cTPA+ stratified by age classes

Definition of the 4-field table							
true positive		cTPA+	CAC +				
false positive		cTPA+	CAC -				
true negative		cTPA-	CAC -				
false negative		cTPA-	CAC +				
Definition of positivity: CAC>10 = CAC+ / cTPA >21 mm^2 = cTPA+							
Age Class	30-45	46-50	51-55	56-60	61-65	66-70	75-99
True positive	2	26	40	63	92	79	111
False positive	14	33	35	49	46	26	28
True negative	18	21	36	50	20	14	5
False negative	5	10	13	24	23	11	13
Sensitivity	29	72	75	72	80	88	90
Specificity	56	39	51	51	30	35	15
Positive predictive value	13	44	53	56	67	75	80
Negative predictive value	78	68	73	68	47	56	28
Accuracy	51	52	61	61	62	72	74
ALL	39	90	124	186	181	130	157
positive likelyhood ratio	0.7	1.2	1.5	1.5	1.1	1.4	1.1
negative likelyhood ratio	1.3	0.7	0.5	0.5	0.7	0.3	0.7
Prevalence CAC+ (%)	18	40	43	47	64	69	79
false negatives (%)	13	11	10	13	13	8	8
Prevalence cTPA+ (%)	41	66	60	60	76	81	89
Prevalence CAC+ (%)	18	40	43	47	64	69	79
Prevalence difference (%)	23	26	18	13	13	12	10

P112

Cannabis Use and Cardiac Structure and Function Assessed by Echocardiography: The Coronary Artery Risk Development in Young Adults Study (CARDIA)

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Introduction: Cannabis use is a rising public health issue. Given the impact of smoke exposure on cardiovascular health, it is pertinent to assess associations between cannabis use (current and cumulative) and clinical and subclinical cardiovascular disease (structure and function).

Methods: We included 5,115 adults aged 18-30 years at baseline from the Coronary Artery Risk Development in Young Adults (CARDIA) Study, followed 30 years and with echocardiography at visit years 5, 25 and 30. We computed 4 categories of self-reported cannabis exposure: never users (index group), past users with <1 "cannabis year" exposure (1 cannabis-year = 365 days of use), past users with ≥1 cannabis year, and current users. We studied echocardiographic markers of cardiac structure: indexed to body surface area left ventricular mass (LVMi, primary structural outcome), left ventricular end-diastolic volume (LVEDVi), left ventricular end-systolic volume (LVESVi), left atrial area (LAAi); cardiac function: left ventricular ejection fraction (LVEF, primary functional outcome), longitudinal peak strain (Ell), ratio of early diastolic mitral inflow velocity to early diastolic mitral annulus velocity (E/e'-ratio), and right ventricular systolic pressure (RVSP). We performed multivariable mixed models, adjusted for demographics, physical activity, cardiovascular risk factors, anti-hypertensive medication, alcohol, tobacco and illicit drugs use, with weights to account for informative censoring.

Results: 5,115 participants contributed to 8,783 individual echocardiography exams. At year 30 of the 3,046 participants undergoing echocardiography, median age was 56 years, 57% (1,817) were women, 48% (1,535) were black, 85% (2,731) reported ever using cannabis. The cannabis use groups differed on nearly all characteristics, especially sex, physical activity and other substance use. In multivariable adjusted models, we found no association between cannabis use and cardiac structure (LVMi, LVEDVi, LVESVi, LAAi) or function (LVEF, Ell, E/e', RVSP).

Conclusion: In the CARDIA study population, cannabis use, either current or cumulative, was not associated with structural and functional heart disease as measured by echocardiography.

P113

Development of new guidelines for the medical examination of night- and shift workers in Switzerland

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Introduction: Shift and night work concerns about 1/6th oft Swiss workers and harbours considerable health risks (1). The previous guidelines on the medical examination of shift and night workers of State Secretariat for Economic Affairs (SECO) were outdated and needed to be updated to reflect current medical knowledge and standards.

Methods: The new guidelines published in 2024 were developed by the SECO. To ensure best practice, they take into account 1) the existing EviPrev recommendations (2) for preventive medical check-ups in primary care and 2) the latest scientific evidence on the effects of shift and night work on health, collected in an umbrella review (UR). The EviPrev recommendations are based on a broad scientific consensus on prevention and the findings from the UR take into account the specific risks of shift and night work.

Results: The UR showed increased risks for many common NCDs. The greatest pooled odds were found for cardiovascular and metabolic risks, mental health, women's health and mortality. Based on this, the new guidelines recommend a specific medical history, a risk-oriented clinical examination and medical counselling for shift and night workers in order to identify and reduce potential health risks at an early stage. They focus on the prevention of cardiovascular diseases, metabolic disorders, sleep disorders and mental illnesses depending on age and personal health behaviour. It is strongly recommended to look for metabolic syndrome factors, assess cardiovascular risk, evaluate diabetic risk, ask about depression and perform a minor laboratory check. The guidelines emphasise the importance of individual counselling to promote health and deal with the stresses of shift work.

Discussion: The new guidelines represent an important step forward in the health protection of shift and night workers. The integration of the EviPrev recommendations and the UR ensures risk-adapted prevention. However, there are challenges to implementation, such as the availability of occupational physicians or the use of telemedicine. The correct application of the guidelines requires close cooperation between the parties involved. A standardised questionnaire for the standardized examination is being developed together with occupational medicine.

P114

Impact of an INtervention TO increase MOBility in older hospitalized medical patients (INTOMOB): Process evaluation of a cluster randomized controlled trial

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Introduction: Low mobility during acute medical hospitalization is frequent among older adults and associated with adverse outcomes such as falls. Increasing hospital mobility remains challenging due to difficulties such as limited staff. To increase mobility in clinical practice, we developed the INTOMOB (INtervention TO increase MOBility of older hospitalized patients) intervention, which we tested in a cluster randomized controlled trial. This process evaluation aimed to provide insights to optimize the intervention and its implementation. The results of the RCT will be reported separately.

Methods: The INTOMOB intervention was conducted on acute general internal medicine wards in Bern University Hospital (Inselspital), Baden Cantonal Hospital and Fribourg Cantonal Hospital in 2022-2024. The patients received booklets (information, diary, exercises) and videos. Informational posters were displayed in the hallways to motivate patients to walk. The HCPs participated in training that included an e-learning module, an oral presentation, and a checklist for ward rounds to promote mobility. We conducted a survey and interviews with all patients of the intervention group with complete discharge data (n = 170), a survey with all HCPs who participated to the study as well as interviews with a subset of 34 HCPs. The survey was analysed using descriptive statistics and the interviews were coded using a deductive approach. Results were integrated using meta-inferences.

Results: Overall, 75% of patients agreed that the exercise booklet was helpful. The majority of patients (58%) agreed that the posters were motivating to move, but the videos were rarely used. One patient said about the iPad “I didn't need it because the booklet was so well done.”. Among HCPs, 78% agreed that the e-learning was useful and 55% agreed that the tasks were clear after the oral presentation. The most frequent suggestion for improvement by HCPs was to shorten the e-learning and periodically update the posters. The complementary information provided by the quantitative and qualitative results is illustrated in Tables 1 and 2.

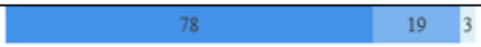
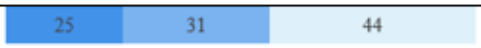
Table 1 Patient Evaluation of the Intervention

Conclusions: The INTOMOB intervention was positively accepted by both HCPs and patients. The patients valued the intervention and felt motivated to move. The HCPs were able to integrate the intervention into their daily routines with minimal increase in their workload.

Dom	Construct	Quantitative answers (%) and questions Yes ■ No ■ Did not use it	Qualitative quotes	Meta-interference Expanding/Confirming/ Divergent
Information booklets	Content	70 1 29 "The content of the information booklet was clear."	*"Simple, easy-to-leaf booklets."* (P-F26) *"Pictures were very helpful."* (P-Ba06)	Confirming Confirming
	Usefulness	67 3 30 "The information booklet was helpful."	*"Pictures were very helpful"* (P-Ba06)	Confirming
Exercise booklet	Content	78 22 "The exercises were clearly explained in the booklet."	*"It was very well done, I didn't need the videos, because the exercises were very well explained in the brochure."* (P-B08)	Expanding
	Usefulness	75 2 22 "The exercise booklet was helpful."	*"It was very useful, very good to see for which muscle part of the body it was."* (P-Be12)	Expanding
Videos	Usefulness	8 2 90 "The exercise videos were useful."	*"It was not needed, because the booklet was so well done."* (P-Be08)	Divergent
Posters	Format	73 1 26 "The font size of the posters was big enough."	*"I liked the colours of the posters, but I didn't want to read them."* (P-Be47) *"The black border of the posters reminded me on death announcement."* (P-Ba05)	Confirming Divergent
	Usefulness	58 17 25 "The posters motivated me to move."	*"I found it really interesting and motivating, better than the exercises."* (P-Be61) *"I didn't look a lot, because I looked on the ground to avoid falling."* (P-Be10)	Confirming Divergent

Dom = domains; P = patient; Ba=Baden; Be=Bern; Fr= Fribourg

Table 2 HCP Evaluation of the Intervention

Dom.	Construct	Quantitative answers (%) and questions (Q) Agree Neutral Disagree	Qualitative reflective quotes	Meta-interference Expanding/Confirming/Divergent
E-learning	Content	 Q: The e-learning was helpful.	*"Possibly an overview of the most important points for everyday life at the end, which can be saved if necessary."* (S-N-Ba18) *"Because of patient mobility, yes. Yes. I could also improve a little."* (I-N-Be06)	Expanding Confirming
		 Q: The description of the study intervention was clear.	*"Clearer statements regarding our role in the study."* (S-D-Be02) *"Overall, I found the e-learning to be very helpful and clearly structured. It explained to me very well what my role is in the intervention."* (S-D-Be10)	Divergent Confirming
Oral presentation	Content	 Q: At the end of the oral presentation, my role in the INTOMOB intervention was clear to me.	*"No, it was very good. It was clear, it was precise."* (I-N-Fr05)	Confirming
Checklist	Content	 Q: The checklist was helpful for me.	*"I found it very good and have often used it myself. It was very helpful."* (I-N-Ba03)	Confirming
	Format	 Q: The checklist was too long.	*"It's good that there are 6 clear points that you can simply go through them during the ward round. But 6 is already the upper limit of checkpoints that you can quickly go through [...]"* (I-D-Be04)	Divergent
Experience	Work process	 Q: The study intervention increased my workload	*"It was a fairly discreet intervention, it didn't have any impact on our work or our service."* (I-N-Fr08)	Confirming

Dom= Domain; D = doctor; N = nurse; S = survey; I = interview
Ba=Baden; Be=Bern; Fr= Fribourg

P115

Improving Patient Safety through Standardised Handoff in Internal Medicine: a pre-post quality improvement study in general internal medicine wards to prevent adverse events

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Background: Adverse events (AEs) and preventable adverse events (pAEs) represent significant challenges in healthcare, particularly in internal medicine wards, where miscommunication during care transitions often contributes to medical errors. The I-PASS handoff bundle, a standardized communication tool, has been shown to reduce preventable harm in pediatric settings, but its effectiveness in different settings is still being under investigation. This study aimed to assess the impact of a pragmatic implementation of the I-PASS handoff bundle in acute internal medicine wards on patient-relevant outcomes, including pAEs, team culture, and staff satisfaction.

Methods: During a pre-post quality improvement study in the Department of General Internal Medicine at the Cantonal Hospital Baden (Switzerland), we implemented tailored version of the I-PASS handoff bundle across internal medicine wards. Data from the electronic health records (EHRs) of 694 patients (347 pre- and 347 post-intervention) were analyzed to evaluate changes in the incidence of AEs and pAEs using the Global Trigger Tool. Primary outcomes included pAE rates per 100 admissions and 1,000 patient days, while secondary outcomes included overall AE rates, length of stay (LoS), and staff satisfaction.

Results: The implementation of the I-PASS bundle was associated with a 30% reduction in pAE rates (p = 0.0003), translating to 23.6 pAEs per 100 admissions post-intervention compared to baseline. Reductions in preventable bleeding events, major deteriorations, and medication-related errors were observed, while non-preventable AEs remained stable. The mean LoS decreased from 12.2 to 10.6 days (p = 0.005). Staff surveys indicated improved perceived handoff quality, reduced information uncertainty, and enhanced safety attitudes.

Conclusion: The pragmatic implementation of the I-PASS handoff bundle in internal medicine wards significantly reduced pAEs and LoS while improving team culture and communication. These findings underscore the potential of standardized handoff processes to enhance patient safety, even with context-specific adaptations. Further multicenter studies are warranted to confirm these results and assess long-term sustainability.

P116

Monthly feedback on the handling of urinary catheters for health care professionals – Impact of a quality intervention to reduce urinary catheter days and catheter-associated urinary tract infections

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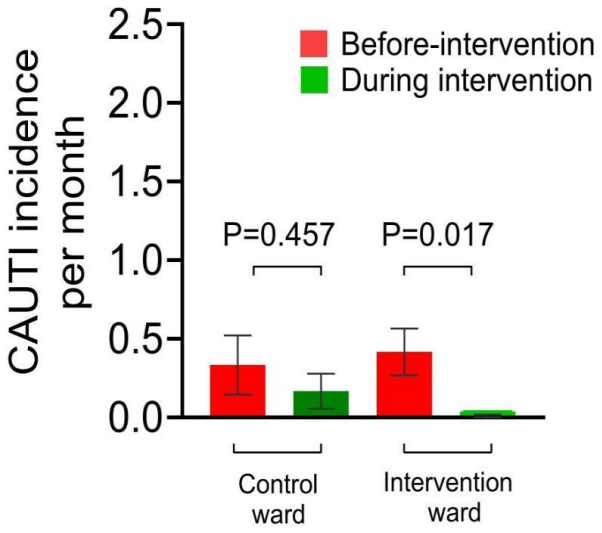
Introduction: Catheter-associated urinary tract infections (CAUTIs) constitute a significant proportion of nosocomial infections CITATION Woo18 \l 2055 [1] and can be largely prevented when evidence-based guideline recommendations are followed [2] . We aimed to assess the impact of monthly structured feedback to health care professionals.

Methods: In this quality improvement study, we compared the effect of monthly feedback on the intervention wards to no feedback on the control wards in an acute internal medicine department from November 2023 to October 2024. Feedback included the number of patients with urinary catheter, evidence-based indication for urinary catheter, and urinary catheter management. The primary outcome was the incidence of CAUTIs per month. Additional outcomes were the incidence of patients with urinary catheter and the catheter days per 100 patient-days. Groups were compared to 12 months before the intervention using a paired t-test.

Results: Overall, 9 CAUTIs (0.18 CAUTI rate per 100 patients) were diagnosed during the 12 months of the pre-intervention period (5 intervention ward, 4 control wards). During the intervention period, 0 CAUTIs (0.00 CAUTI rate per 100 patients) were observed on the intervention ward and 2 CAUTIs (0.07 CAUTI rate per 100 patients) in the control ward. Following the implementation of structured feedback, the reduction in CAUTIs per month from 0.4167 to 0.00 was statistically significant (p = 0.017, 95% CI: -0.7438 to -0.0895). In contrast, the control ward showed a decrease from 0.3333 to 0.1667 CAUTIs per month, but this reduction was not statistically significant (p = 0.457, 95% CI: -0.6269 to 0.2936).

Conclusion: Providing monthly structured feedback to healthcare professionals resulted in significant reduction in number of CAUTIs. This approach offers a practical and impactful strategy for enhancing patient safety and care quality in healthcare settings.



P117

Prognostic comparison of cTPA with coronary calcium for cardiovascular risk stratification

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Introduction: Evidence suggests carotid ultrasound has comparable prognostic information regarding cardiovascular events or death when compared to coronary calcium scoring derived from computed tomography.

Methods: In this single-center study, we used standard imaging procedures for carotid total plaque area (cTPA) and coronary calcium Agatston scores (CCS) obtained between 2003 and 2024, performed a long-term follow-up in 472 cardiology patients (69% male, age 60 ± 9 years, 12% in secondary prevention) over 10 ± 7 years.

Results: We observed 63 events (15 PTCA, 4 CABG, 11 AMI, 5 STROKE/TIA, 28 deaths). Using COX multivariate forward regression with 7 clinical and 3 laboratory variables, the hazard ratio of cTPA>62 mm² was 1.42 (95%CI 1.03 - 1.95, p = 0.03) and for CAC>100 was 1.74 (95%CI 1.39 - 2.19, p <0.0001). Using 3 categories of risk markers (low-intermediate, high, very high) in Cox regression, posttest risk of cTPA showed a hazard ratio of 1.56 (95%CI 1.14 - 2.13, p = 0.0053) and of CAC showed a hazard ratio of 2.26 (95%CI 1.61 - 3.16, p <0.0001), while SCORE2/-OP was excluded from the model. Net reclassification improvement was statistically not significant for cTPA (NRI 3% ± 12% p = 0.76), but was significant with CAC (NRI 29% ± 11%, p = 0.01). Area under the curve was statistically comparable for SCORE2/-OP, SCORE2TPA and SCORE2CAC (0.64, 0.63, 0.69 respectively, p = NS for the difference).

Conclusion: In cardiology patients with initial assessment of cardiovascular risk based upon SCORE2/-OP and two atherosclerosis imaging modalities, cTPA and CAC added significant and statistically comparable risk information. Given the lower cost and better environmentally friendliness, cTPA should be the initial imaging test to enhance risk prediction beyond cardiovascular risk factors.

Table 1: baseline characteristics of patients, with and without a clinical event

	ALL	EVENT	NO EVENT	p =
Patients	473	63	410	
Male	328	49	279	<0.0001
Male %	69	78	68	
Smoker	122	24	98	0.0166
Smoker %	26	38	24	
Diabetes Mellitus	50	11	39	0.0499
Diabetes Mellitus %	11	17	10	
Fam Hx ASCVD	90	12	78	0.9965
Fam Hx ASCVD %	19	19	19	
Statins and/or BP medication	202	32	170	0.1638
Statins and/or BP medication %	43	51	41	
Secondary Prevention	59	15	44	0.0035
Secondary Prevention %	12	24	11	
cTPA>62 mm^2	174	34	140	0.0024
cTPA>62 mm^2 %	37	54	34	
CCS>100	135	46	89	0.0004
CCS>100 %	29	73	22	
Age ± SD	60 ± 9	62 ± 9	60 ± 9	0.0602
BPs ± SD	131 ± 20	134 ± 20	131 ± 19	0.171
Cholesterol mmol/l ± SD	5.4 ± 1.0	5.4 ± 0.9	5.4 ± 1.1	0.7769
HDL mmol/l ± SD	1.4 ± 10.4	1.3 ± 0.2	1.4 ± 0.4	0.3388
SCORE2/-OP	6.4 ± 4.1	8.3 ± 4.9	6.2 ± 3.8	0.0002
SCORE2/-OP TPA	11.5 ± 10.2	15.8 ± 11.6	10.8 ± 9.8	0.0007
SCORE2/-OP CAC	10.5 ± 9.6	15.8 ± 10.0	9.7 ± 9.2	<0.0001
cTPA ± SD	62 ± 56	77 ± 59	58 ± 55	0.0082
CCS ± SD	158 ± 513	328 ± 679	155 ± 479	<0.0001
TIME years	10 ± 7	10 ± 6	10 ± 7	0.3847

Table 2: Hazard ratios, C-Statistics and Net Reclassification Improvement of cTPA, CAC, SCORE2/-OP and SCORE2/-OP posttest risk (based on CAC or cTPA)

N = 473	HR (95% 95%-CI)	HR P value	C-Statistic	C-Statistic P value	NRI ± SE
CVD or DEATH (N = 63)					
SCORE2/_OP alone	---	---	0.64	0.0003	---
+ CAC code	2.26 (1.61-3.16)	<0.0001	0.66	<0.0001	29% ± 11%
+ cTPA code	1.38 (1.01-1.89)	0.0427	0.60	0.0082	3% ± 11%

P118

Safety, Tolerability, and Immunogenicity of mRNA-1345 in Adults at Increased Risk for RSV Aged 18 to 59 Years

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Introduction: Respiratory syncytial virus (RSV) poses a significant health risk to adults with underlying conditions. Interim findings are presented from a phase 3 trial evaluating mRNA-1345 vaccine in high-risk adults (18-59 years (y)).

Methods: In Part A of this ongoing, randomized, double-blind phase 3 trial (NCT06067230), participants (18–59 y) with ≥1 high-risk condition for RSV-LRTD (coronary artery disease (CAD) and/or congestive heart failure (CHF), diabetes mellitus (DM) type 1 or 2, or chronic lung disease (CLD)) received a 50 µg or 30 µg dose of mRNA-1345. Co-primary immunogenicity objectives were to demonstrate noninferiority (NI) of Day 29 RSV-A and RSV-B nAb GMTs from a single 50 µg dose of mRNA-1345 compared to those in older adults (≥60 y) in the pivotal phase 2/3 trial (NCT05127434). NI was assessed using a margin of 1.5 for the GMT ratio (GMR; 95% CI lower bound >0.667). Secondary objectives included seroresponse rates (SRR) difference compared to those from the pivotal study with

a NI margin of 10% (95% CI LB >-10%). Tolerability and safety were also evaluated.

Results: Data for the 50 µg group are presented. Out of 502 participants (253 day median follow-up), 56.9% had DM type 1 or 2, 25.7% of participants had CAD or CHF, and 44.8% had CLD. Any solicited adverse reactions within 7 days post-injection were reported by 79.1% of recipients; most were grade 1-2 in severity with a median duration of 3 days. No adverse events (AEs) leading to study discontinuation, serious AEs assessed as related per investigator, or AEs of special interest were reported. Co-primary NI criteria of immunogenicity in adults at increased RSV-LRTD risk (18–59 y) compared to adults (≥60 y) were met based (nAB GMR RSV-A: 1.163 [95% CI, 1.053–1.285]; RSV-B: 1.135 [1.037–1.242]. NI based on SRR difference was also demonstrated. Immune responses were consistent across risk groups. Descriptive analysis showed persistent RSV nAb responses through Day 181, and responses in high-risk adults (18-59 y) were consistent with those of older adults (>60 y) (LB of GMR 95% CI >0.667 for RSV-A and RSV-B).

Conclusion: In adults (18-59 y) at high risk for RSV-LRTD, 50 µg mRNA-1345 was well-tolerated, had no new safety concerns, and elicited RSV-A and RSV-B nAbs that were NI to those in older adults in the pivotal efficacy trial, were consistent across medical risk groups, and persisted up to Day 181, indicating mRNA-1345 is likely to protect against RSV disease in this population.

P119

Smokers' characteristics linked to achieving tobacco abstinence with or without ongoing nicotine use: secondary analyses of a randomized controlled trial testing e-cigarettes for tobacco abstinence

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Background: E-cigarettes increase tobacco smoking abstinence (TA) but can also lead to ongoing nicotine use (ONU) despite TA. While TA is a priority for improving health outcomes, e-cigarettes might lead to unnecessary ONU among smokers who have a low probability of achieving TA with e-cigarettes. We aimed to identify subgroups of smokers who may have higher treatment effects from e-cigarettes for TA, and those for whom e-cigarettes may have lower treatment effects for TA, but high effects for ONU.

Methods: We used data from the Efficacy, Safety and Toxicology of Electronic Nicotine Delivery Systems (ESTxENDS) randomized clinical trial (2018-2022), which included adults in 5 Swiss cities who smoked at least 5 cigarettes per day and were willing to abstain from tobacco. Participants were randomized to either free e-cigarettes for 6 months plus standard-of-care counseling (SOC, intervention), or SOC alone (control). We defined TA and ONU based on self-reported use of tobacco cigarettes, nicotine-containing e-cigarettes, and pharmacologic nicotine replacement therapy in the 7-days before the 6-month follow-up visit. We fitted a logistic regression model with a ridge penalty; baseline variables and interactions with treatment were predictors. We estimated the intervention effect at the participant level as a risk difference (RD).

Results: 1036 patients (1036/1246, 83%) provided information on use of tobacco and nicotine products. On average, the intervention increased the probability of TA (RD of intervention vs control +21% [95% CI: +15% to +27%]) and the probability of ONU (RD = +14% [+8% to +19%]). We defined a 'high-TA, low-ONU' (N = 228) and a 'low-TA, high-ONU' (N = 235) group based on RD. 'high-TA, low-ONU' included mostly older women (median age 53; 85% women) who had not tried e-cigarettes before (99%) and took psychiatric medication (34%). RD for TA was +27% [+14% to +39%] and for ONU +10% [-1% to +21%]. 'Low-TA, high-ONU' included younger men (median age 31; 86% men), 42% of whom had tried e-cigarettes before and <1% took psychiatric medication. RD for TA was +8% [-5% to +21%] and for ONU +27% [+15% to +38%].

Conclusions: Older women who have not already tried e-cigarettes and are on psychiatric medications may respond more with TA from adding e-cigarettes to SOC compared to SOC alone; younger men who have already tried e-cigarettes may not respond with TA, while they may respond mostly with ONU.

P120

Why do patients hesitate to deprescribe in clinical practice? A comparison of general practitioners' practices and hospital settings

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Introduction: Statins are among the most frequently prescribed chronic medications for older adults, but their efficacy for primary prevention of cardiovascular disease remains debated. Given the risks associated with inappropriate prescribing, optimizing medication is crucial. While many surveys indicate that a large proportion of patients are open to reducing their medication intake, the actual proportion of patients agreeing to deprescribe in "real life" appears to be significantly lower.

Methods: We conducted a mixed-methods study with older adults taking a statin for primary prevention. We included participants who declined participation in the STREAM trial – a multicenter, randomized controlled trial evaluating the impact of discontinuing versus continuing statin therapy in older multimorbid adults in primary prevention in Switzerland - but agreed to be interviewed. Interview guides included quantitative questions used in previous deprescribing literature, as well as closed- and open-ended questions based on the Theoretical Domain Framework (TDF). We analyzed quantitative data de-

scriptively and qualitative data with a mixed deductive and inductive method. Interviews were conducted from April 2023 to September 2024.

Results: Among 49 participants (mean age 81 years, 51% male), 94% of participants were willing to stop one or more medications if recommended by their general practitioner, yet 84% reported being satisfied with their current therapy and 75% with their statin therapy. Qualitative findings revealed key barriers to deprescribing: fear of cardiovascular events, confusion caused by conflicting information about statins from research and media, and reluctance to change established treatments due to age and health.

Conclusion: Trust in general practitioner and reliance on their guidance are key factors in decision-making. To improve healthcare quality and reduce inappropriate medication use, understanding patient reasons for refusing deprescribing in real-life practice is crucial. This insight will help to better plan and conduct deprescribing research.

Table 1. Baseline Characteristics. Legend: data are N(%) = number of available data to this questions

* Checked in patient files at Bern University Hospital and/or provided by GP practices

	N(%) (N=49)
Age	
70-74 years	7 (15)
75 -84 years	24 (50)
≥ 85 years	17 (35)
Female	24 (49)
Male	25 (51)
Region of Switzerland	
German-Speaking	30 (61)
French-Speaking	29 (49)
Place of Recruitment	
GP practice	25 (51)
Hospital	24 (49)
Number of chronic medications*	
1-4	9 (18)
5-9	18 (37)
≥ 10	4 (8)
Unknown	18 (37)
Number of chronic medical conditions *	
1-2	6 (12)
3-5	17 (35)
6-8	8 (16)
Unknown	18 (37)

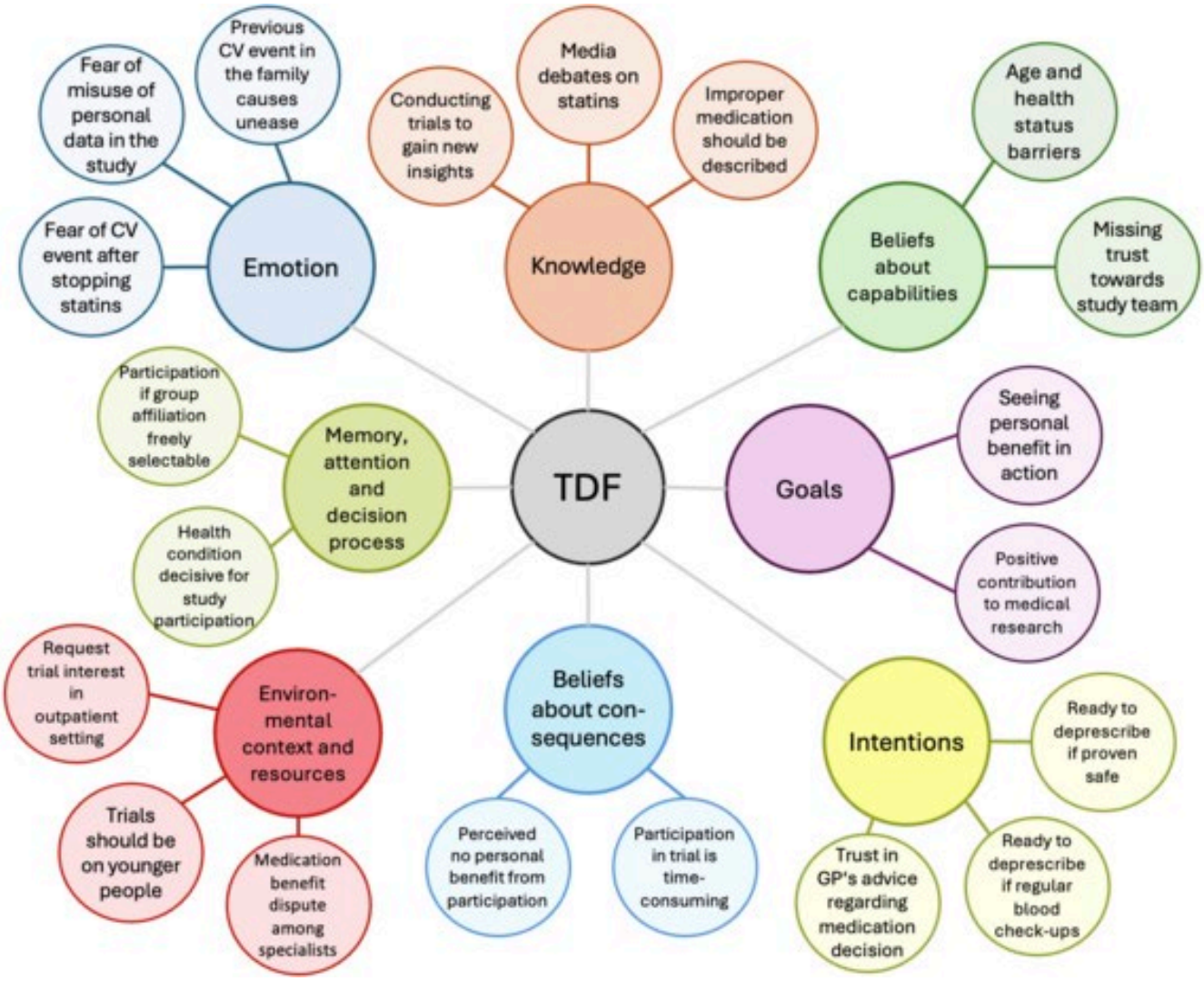

Figure 1. Identified Domains in the qualitative analysis with key codes

* TDF = Theoretical Domain Framework, GP = General Practitioner

P121

Patient And Physician Perspectives On Use And Communication Of Polygenetic Risk Score For Coronary Artery Disease In Primary Prevention in Switzerland: A Qualitative Study

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Introduction: Polygenetic risk score (PRS) for coronary artery disease represent a promising new tool for re-stratifying patients in primary prevention. However, data regarding the barriers and facilitators faced by patients and healthcare providers is limited.

Methods: A qualitative study design with focus groups (FGs) was used, including patients and healthcare professionals (HCPs). Purposeful sampling was used to recruit patients from the lipid clinic at Bern University Hospital. HCPs all collaborated with the Inselspital Bern. FG guides were developed based on the Theoretical Domain Framework. Quantitative data were analyzed using descriptive statistics, while qualitative data were explored through both thematic deductive and inductive analysis.

Results: We conducted 6 FGs with patients (N = 24, mean age 59 years, 75% female), and two FGs with HCPs (N = 10, 60% female). FGs were conducted between March and July 2023 and lasted 60-90 minutes. Identified barriers in communicating PRS included a lack of knowledge in clinical and genetic terminology, insufficient understanding of genetic tests, and difficulties in understanding and interpreting risk presentations, especially the Gaussian bell curve. Some patients understood their genes as pre-programmed and immutable, leading them to view lifestyle modifications as futile. HCPs expressed concern about these outcomes if PRS were used independently of traditional risk scores. HCPs and patients were worried about cognitive distress due to information overload. Patients also expressed an aversion to long-term risk predictions. Identified facilitators include the desire for patient-centred and in-person communication, the use of dynamic representations using absolute risk, and visualisation categorized into “low,” “medium,” and "high" risk. Opinions on the emotional effect of colours in risk representations and comparisons with the general population varied between patient and HCP groups.

Conclusions: Many patients demonstrated a lack of knowledge in clinical and genetic risk terms and had difficulty interpreting visual risk representations. This emphasizes the importance of support from general practitioners and underscores the need for detailed guides on genetic tests and their results. Dynamic presentations that visualize risk scores and the potential benefits of lifestyle modifications were favored by both patients and HCPs for effectively communicating PRS.

Table 1: Sociodemographic characteristics of participating patients

Characteristics	N (%) N = 24	Characteristics	N (%) N = 24
Mean Age (years)	59	Former smoker	10 (42%)
Gender (female)	18 (75%)	Never smoker	13 (54%)
Self-reported mother language		Unknown	1 (4%)
German	20 (83%)	Positive Family history of	14 (58%)
French	4 (17%)	cardiovascular disease	
Level of Education		Statin intake (Yes)	5 (21%)
Primary school	1 (4%)	Lipoprotein(a) > 150 nmol/l (positive)	12 (50%)
Secondary school	14 (58%)	Dutch Lipid Score	
University	6 (25%)	Unlikely < 3 points	8 (33%)
Unknown	3 (13%)	Possible 3-5 points	13 (54%)
Working status		Probable > 6 points	1 (4%)
Currently working	12 (50%)	Certain > 8 points	0 (0%)
Retired	9 (38%)	Unknown	2 (8%)
Unknown	3 (13%)	SCORE-2	
Primary prevention	22 (92%)	Mean	5.2%
Smoking behavior		Min.	0.6%
Actual smoker	0 (0%)	Max.	16.4%
		Median	3.8%

Table 2: Sociodemographic characteristics of recruited HCPs

Characteristics	N (%) N = 10
Profession	
Internal Medicine (walk-in	2 (20%)
Emergency)	
Angiologist	1 (10%)
Endocrinologist	2 (20%)
Cardiologist	1 (10%)
Internal Medicine GP	2 (20%)
Internal Medicine GP/Obesity	1 (10%)
Internal Medicine GP/Lipids	1 (10%)
Language	
French	4 (40%)
German	6 (60%)
Gender (female)	6 (60%)

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Sex Distribution of Cell Lines in Lung Cancer Research: Does any Sex Bias Exist?

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Introduction: The construction of medical knowledge has long been androcentric, using the male sex as the norm, particularly in clinical and animal research, where male subjects have predominantly been used. However, what about cellular research? Although we know that "every cell has a sex", implications of sex in basic research are still to be investigated. In this context, it is necessary to understand the current state of the use of cell lines in basic research and thus explore whether a sex bias exists.

Methods: We focused on lung cancer, a prevalent disease that affects women and men differently. We first described the sex distribution of the human lung cancer cell lines recorded on the Cellosaurus, a platform that lists cell lines used in biomedical research. Secondly, using EuropePMC, an open-access article database, we recorded all research articles mentioning the lung cancer cell lines collected, to estimate their actual use in biomedical research.

Results: We identified a total of 1,490 cell lines derived from human lung cancers. Male cells accounted for 48% of all lung cancer cell lines, followed by cell lines from individuals whose sex was not determined (36%), female cells represented only 16% of the sample. We retrieved 1,931,168 scientific articles mentioning the names of the cell lines collected. Here, the sex disproportion was greater, 87% of the collected articles cited a male cell line, 12% female cell lines and 1% cell lines with undetermined sex. Of the 20 most used cell lines, 16 were from male origin. For all types of lung cancer, male cell lines outnumber female ones.

Conclusion: A sex bias exists in biomedical research using lung cancer cell lines. When designing an experiment involving lung cancer cell lines, the choices panel is much wider for male than for female cells. Regarding the inclusion of cell lines in biomedical research articles, as an estimation of their use, the imbalance favoring male sex becomes even more pronounced. Preclinical research, predominantly conducted on male cell lines, leads to current medical practices being aligned with certainty to only one sex. However, the validity of generalizing results obtained from cells of one sex to the other has not yet been proven. Thus, as long as there is no evidence to support this, such an approach is not justified. It is therefore time to highlight the implications of the sex of cell lines in biomedical research and its potential consequences for clinical practice.

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Artemis Study: Use of Non-Pharmacological Therapies by Physicians and Nurses in a Primary Care Service: A Cross-Sectional Study

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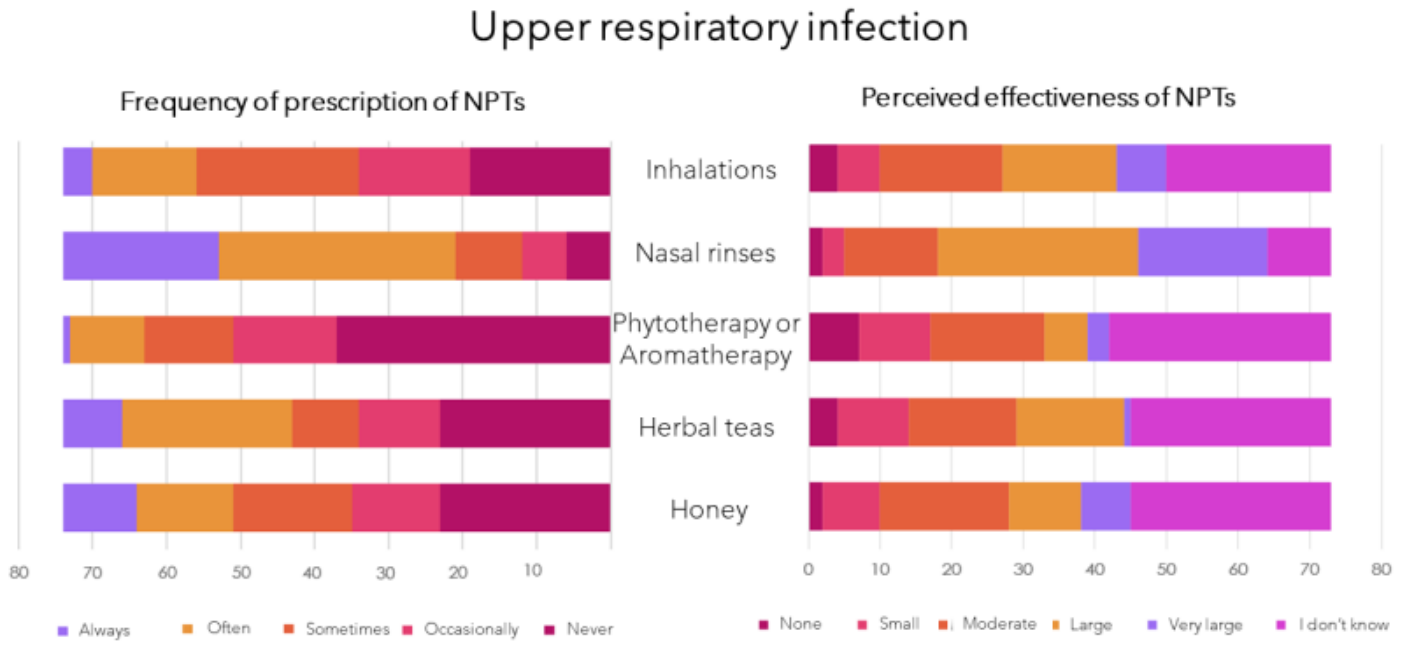
Introduction: Non-pharmacological therapies (NPTs), also known as non-drug interventions, encompass a wide range of therapeutic approaches that do not involve pharmaceutical medications. NPTs offer several advantages, including potentially fewer side effects, lower costs, reduced medication interactions. They could also play a significant role in reducing the environmental impact of healthcare. This study aims to explore the prescribing habits of NPTs among physicians and nurses in the Division of Primary Care Medicine at the Geneva University Hospitals (HUG).

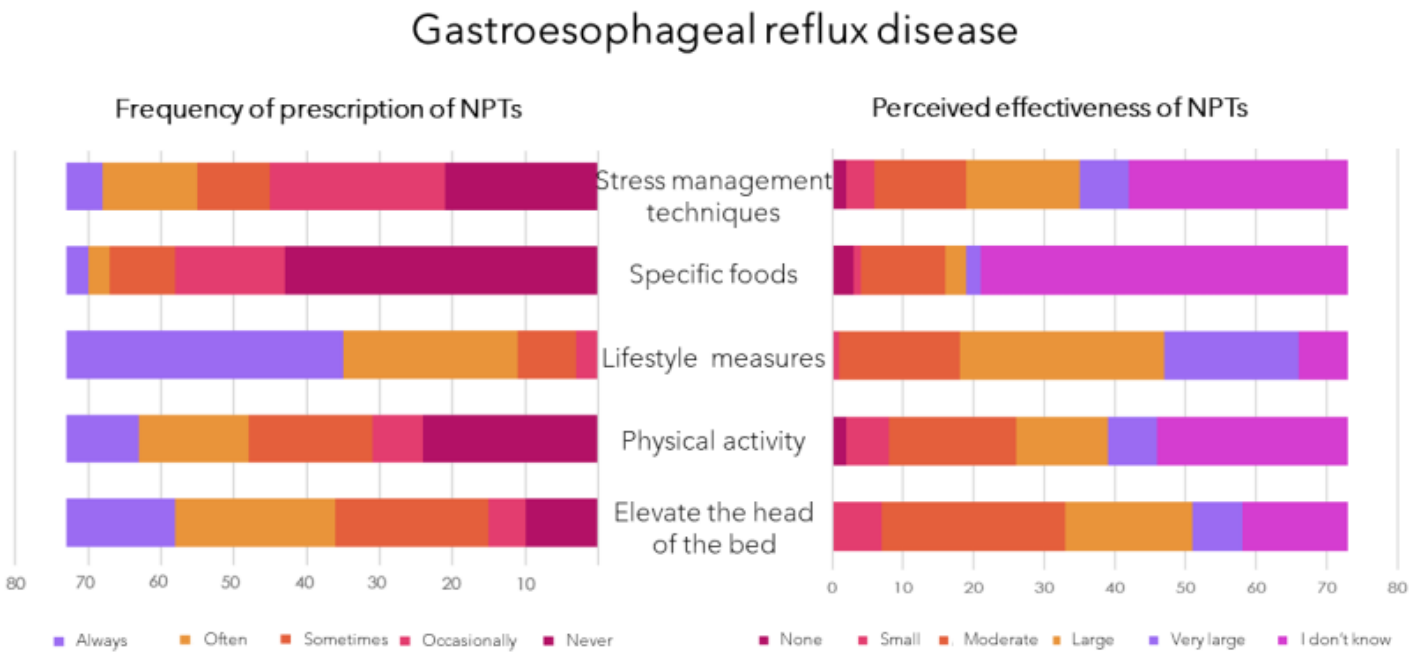
Methods: We conducted a cross-sectional study using a self-administered questionnaire among physicians and nurses in the Division of Primary Care Medicine at the HUG in June 2024. We chose to evaluate 4 indications for NPTs (upper respiratory infection, gastroesophageal reflux, depression, and constipation) due to their prevalence. The NPTs used in these conditions were selected based on their frequency, ease of use, and existing evidence (1).

Results: 87 answers were collected (participation rate 34%), including 54 (62.1%) women and 26 (29.9%) nurses. 19 (21.8%) had training in non-conventional medicine and 35 (40.2%) worked in outpatient urgent care and 59.8% in outpatient general practice. The main reasons to prescribe NPTs included personal experience (75.7%) or knowledge of published guidelines

[MN1] (60.8%) on the subject. The most frequently identified advantages of NPTs were responding to patients' needs (72.4%), less adverse effects (63.2%). The main disadvantages were increased cost for patients (47.1%) and patients' refusal (36.8%). Reasons for not using NPTs were lack of knowledge (76.9%) and increased cost for patients (30.8%). Overall, 69 (79.9%) healthcare professionals expressed the need for more training about NPTs. The frequency of prescription and perceived effectiveness of NPTs in the examples of upper respiratory infection and gastroesophageal reflux disease are summarized in figure 1 and 2.

Conclusion: Non-pharmacological therapies are already partially present in the prescriptions of primary care physicians and nurses, although their effectiveness is still poorly perceived. Non-reimbursed costs and lack of professional recommendations and information remain a barrier to their prescription. Better training and access to information are required to ensure healthcare professionals are well-equipped with knowledge about these therapies, their effectiveness, and their reimbursement.





P124

Career Choices of Medical Graduates of a Novel General Practice-Oriented Pre-Graduate Curriculum in Switzerland

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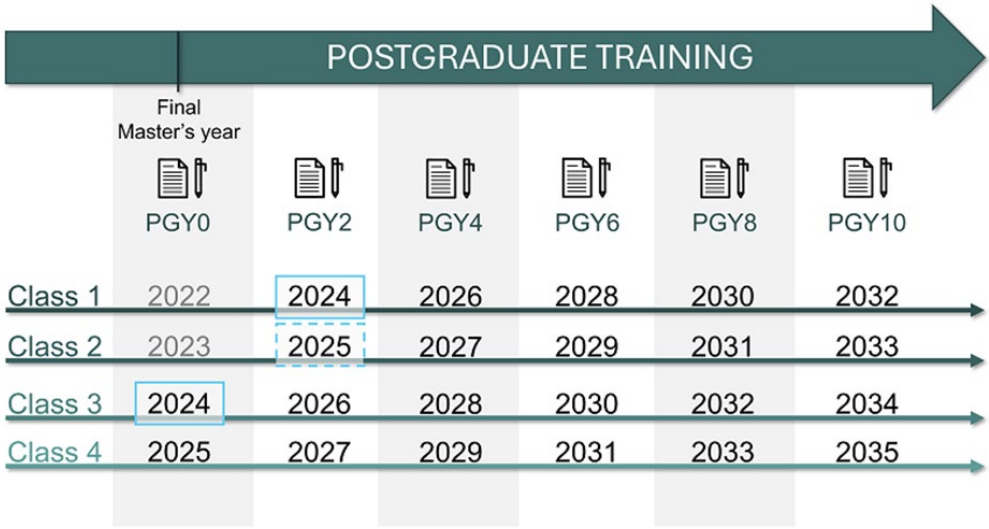
Introduction: Undergraduate medical training in Switzerland historically has little exposure to general practice, encouraging medical graduates to pursue other specialities. To address this, in 2019, the University of Fribourg, Switzerland introduced a new Master's (MMed) curriculum (equivalent to 4th-6th years of integrated medical programme) with substantial and regular exposure to general practice aiming to inspire more graduates to become general practitioners. This study aims to investigate the impact of this novel general practice-oriented Master's program on career choices of medical graduates.

Methods: This is a repeated survey of all medical graduates from the University of Fribourg since the first class graduated in 2022. Electronic questionnaires are sent to graduates every 2 years from the final Master's year until 10 years post-graduation. In addition to socio-demographic data, questionnaires address postgraduate occupations, choice of speciality training and envisaged type of practice after obtaining speciality qualification. The motivators and factors influencing these career choices are also explored. Baseline data collection started in 2024 of two graduating classes - second postgraduate year for graduating class of 2022 (n = 36) and final Master's year for graduating class of 2024 (n = 30). Data is currently being collected for second postgraduate year for graduating class of 2023.

Results: 55 medical graduates (83% participation; 69% women) responded to the baseline questionnaire of graduating classes of 2022 and 2024. The majority of graduates have already chosen (29%) or are considering (44%) a career in general practice. Positive experiences during pre-graduate such as internship and mentoring in general practice were identified as the most encouraging factors among graduates interested in becoming general practitioners. Conversely, among those not pursuing or uncertain about a GP career, the perceived administrative burden in general practice was the most frequently reported deterrent.

Conclusions: A strong emphasis on general practice during undergraduate years seems to play a role in encouraging medical graduates to become general practitioners. However, addressing systemic barriers, such as administrative burden seems essential to foster interest in general practice and help mitigate the shortage of general practitioners.



P125

Development and evaluation of tailored materials for implementation of point-of-care procalcitonin in Swiss primary care

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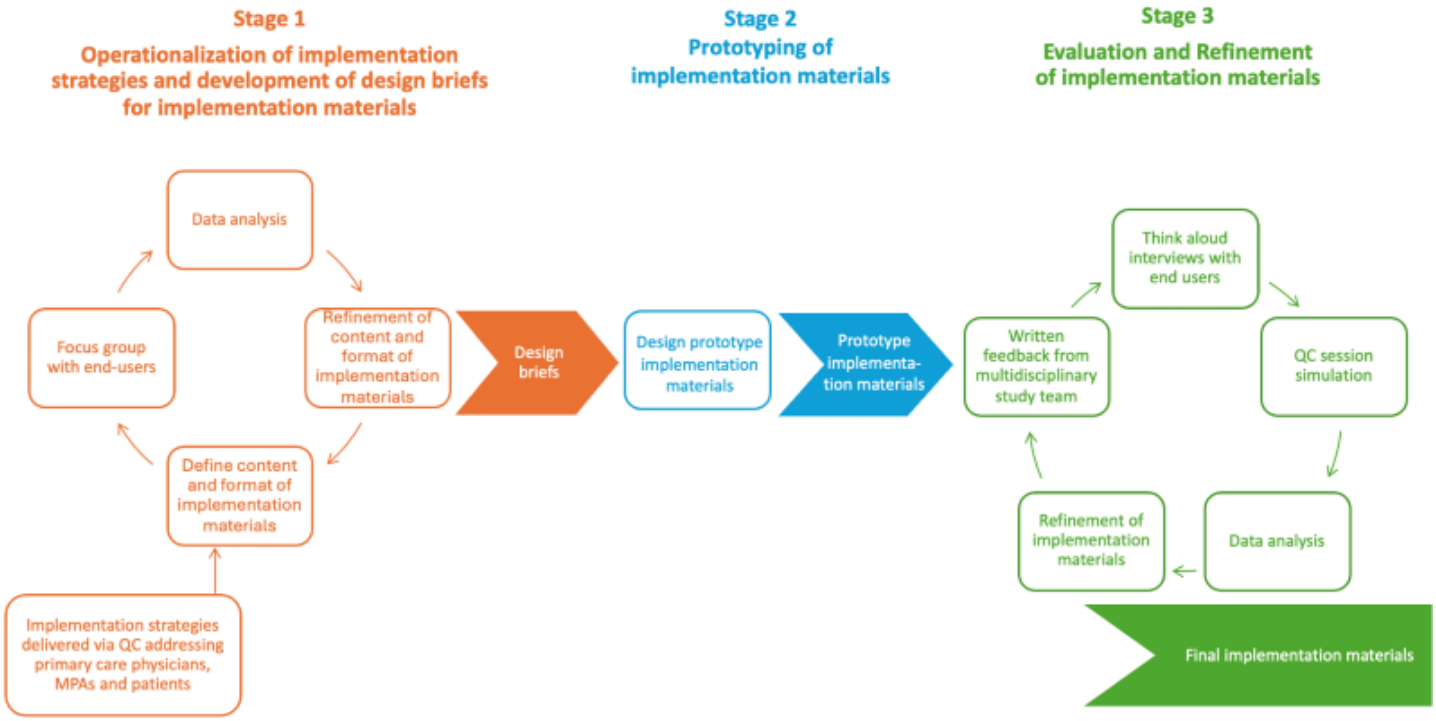
Introduction: In Switzerland, most antibiotics are prescribed in ambulatory care, often for lower respiratory tract infections (LRTIs), despite their predominantly viral etiology. Point-of-care procalcitonin (POC-PCT) testing has been shown to reduce LRTI-related antibiotic prescriptions in Swiss primary care. The ImpPro study aims to implement POC-PCT testing, through strategies that can be deployed via and beyond pharmacist-physicians quality circles (QCs). This sub-study aimed to develop and evaluate implementation materials for end users, including primary care physicians (PCPs), medical practice assistants (MPAs), patients, and QC moderators.

Methods: The study used a three-step workflow to develop and evaluate implementation materials. Preliminary work within the ImpPro study identified QC-delivered implementation strategies for POC-PCT adoption, implementation and continued use. In stage 1, these strategies were operationalized into design briefs and reviewed by an expert group of end users. In stage 2, prototype materials were developed. In stage 3, they were evaluated by end users. A before-after knowledge assessment tested their effectiveness in conveying key messages. This led to the final refinement of the materials.

Results: In stage 1, the proposed implementation materials included in the design briefs were a PowerPoint slideshow, a QC preparation guide for QC moderators, a PCP information sheet, a patient leaflet, a video script and an informational leaflet for MPAs. Their content covered LRTI management, PCT testing guidance, and practical resources for antibiotic stewardship. A focus group (n = 5 participants) found the design briefs acceptable, effective, and practical. Based on their feedback, the leaflet was revised to enhance acceptability by focusing on LRTIs and appropriate antibiotic use. In stage 2, six prototype implementation materials were designed, then refined in stage 3 via 11 individual think-aloud interviews and 2 QC simulations. The main issues identified were content overload and design considerations, lowering acceptability and practicability. Overall, acceptability was high, and before-after assessments confirmed effectiveness by demonstrating improved knowledge.

Conclusion: The iterative, multi-step approach, which incorporated end users along with their context and needs at various stages of development, successfully enhanced the implementation materials, ensuring their acceptability, practicability, and effectiveness.



P126

Enhancing Interprofessional Collaboration in Home and Community Care: A Qualitative Study with Implications for the Future

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Introduction: Interprofessional collaboration (IPC) is a cornerstone for home-based care and plays a key role in preventing hospitalizations. Our study aimed to understand IPC's needs, barriers and facilitators for IPC between patients and their caregivers, physicians, physiotherapists and members of a home healthcare agency and to propose a care model that can improve IPC within primary healthcare teams.

Method: We conducted two-phase community-based action research with patients and their informal caregivers at home, physicians, physiotherapists, and members of a home healthcare agency (nurses, occupational therapists, and social workers) in the Canton de Vaud.

Phase 1 included 8 semi-structured interviews with patients and their informal caregivers and 3 focus groups with 10 health professionals. Phase 2 comprised an interactive workshop with health professionals. Interviews and focus groups were transcribed verbatim and analysed thematically.

Results: Phase 1 identified six themes: team communication difficulties, the important role of informal caregivers, health professionals' adaptations to interprofessional challenges, health professionals' roles and responsibilities, the need of tools and interfaces and context-specific aspects. During the workshop in Phase 2 several solutions were proposed: (1) political advocacy for system change to reduce barriers for interprofessional collaboration, (2) set-up of a common place for primary care teams, (3) systematic integration of physiotherapists into the community healthcare teams, (4) information sharing with the same IT system and (5) a reimbursement scheme to incentivise interprofessional collaboration.

Conclusion: This study identified needs and concerns perceived by patients, their informal caregivers and healthcare teams for a better IPC at home. Based on the analysis of Phase 1 (interviews and focus groups) health professionals proposed actions to improve IPC. It highlights the need for interprofessional healthcare centres that include physicians, nurses, occupational therapists, physiotherapists and social workers, political recognition of primary care IPC, financial incentives and new reimbursement systems.

P127

Experiences of healthcare and administrative staff working with asylum seekers in the current polycrisis context: a qualitative study

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Introduction: Healthcare and administrative staff working with asylum seekers are at risk of burnout, compassion fatigue and vicarious traumatization[1,2]. Moreover, they face a series of crises with the refugee crisis in 2015-2016, the Covid-19 pandemic, the war in Ukraine and climate change, complexifying their daily practice and increasing the number of asylum seekers. Despite this alarming context, scarce research explored the personal experiences of healthcare and administrative staff working with asylum seekers, with no studies conducted in Switzerland. In response, this study aimed to qualitatively explore their work-related experiences, resources and needs in the current polycrisis context in Switzerland.

Methods: Participants (N = 24) were part of the front-line care team working with asylum seekers in the Canton of Vaud (Switzerland). The sample included nurses, administrative staff, physicians and psychologists. They participated in semi-structured interviews exploring the personal experiences of their work, difficulties and challenges encountered and their resources and needs. Inductive thematic analysis was used to organize data and identify themes.

Results: Main findings highlighted a significant emotional burden for staff related to their patients' migratory journey and experiences in the asylum system. Next, participants expressed various challenges associated with their work, such as heavy workload, lack of partners in the healthcare network, communication barriers and the polycrisis context. Further, findings documented that participants' strong intrinsic motivation and personal and institutional resources support them in overcoming these difficulties. Finally, participants made some suggestions for the improvement of their working environment, including promotion of exchange between colleagues, collaboration with partners and hiring additional staff.

Conclusion: Healthcare and administrative staff working with asylum seekers are exposed to multiple challenges and emotional difficulties linked to their patients' experiences. Findings suggest the need to address the well-being of this population by developing measures to enhance support for them at individual and structural levels, particularly within the current polycrisis context.

P128

General practitioners with mental health symptoms: do they seek professionals' support?

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Introduction: General practitioners' (GPs) mental health problems negatively affect healthcare systems through enhanced recruitment needs, lower productivity and efficiency, and ultimately, poorer quality of care. Policymakers are concerned about this issue, and it is now one of the "quintuple aim" axes to reach for healthcare systems. As consequence of the COVID-19 pandemic, the issues of sustainability and resilience of our system is increasingly being studied to meet the needs of the population.

The objective of this study is, first, to assess the prevalence of mental health symptoms experienced by the Swiss family physicians since COVID-19 and to compare it with nine other Western countries. Secondly, it aims to describe the behavior of Swiss family physicians and to evaluate how many reaches out for help when their mental health is poor.

Methods: We conducted a secondary analysis of the data from the Commonwealth Fund International Health Policy Survey on Primary Care Physicians 2022. We investigated the frequency GPs who experienced, since March 2020, emotional distress such as anxiety, great sadness, anger, feelings of hopelessness and/or high level of burnout in Australia, Canada, France, Germany, the Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom and USA. We also looked if the GPs had sought professional support for their mental health problems.

Results: Since the COVID-19 pandemic began, 58.5% of 9193 physicians experienced mental health symptoms, but only 20.9% of them sought professional support. Specific to Switzerland, 38.7% of 947 GPs have mentioned one or many mental distress symptoms and again 19.9% of them went to see a professional. According to our multivariate analyses, seeking professional help for those problems was more frequent among women and younger physicians between 35 and 44 years old. In comparison, the United Kingdom had the highest prevalence of GPs who presented mental health symptoms (68%), whereas GPs in New Zealand (26%) sought the most professional help when they noticed problems.

Conclusion: In Switzerland less than a fifth of the GPs are actively seeking professional help while presenting mental health symptoms. By promoting changes in work organization and enhancing access to professional support, there's potential for a greater positive impact on healthcare systems. The issue of GP's well-being is of crucial interest for policy makers, a concern that extends beyond Switzerland's borders.

P129

General practitioners' views on evidence-based hypoglycemic spices and foods in type 2 diabetes management: A cross-sectional study

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Introduction: Patients with type 2 diabetes (T2D) frequently use herbal remedies, yet general practitioners' (GPs) views on such practices remain divided. Recent studies have found that various spices and foods, including Aloe vera, psyllium fibre, and fenugreek seeds, possess hypoglycemic properties. Among these remedies, several have demonstrated effects comparable to standard oral hypoglycemic agents. This study aimed to assess GPs' perspectives on the use of hypoglycemic spices and foods, as well as their willingness to recommend them to patients with T2D.

Methods: During 2023, a cross-sectional study was conducted among GPs in Geneva (Switzerland). Participants completed an anonymous 22-item questionnaire, partially adapted from a generic, theoretically informed tool, that explored their opinions on hypoglycemic spices and foods, as well as their perspectives on recommending these dietary options to patients. Questionnaires were provided either in electronic or paper formats. Descriptive statistics, including percentages and 95% confidence intervals (CIs), were employed to summarise the data.

Results: 207 GPs out of 570 responded to the questionnaire (participation rate: 36.3%), of which 58 (28%) via Web-based questionnaires and 149 (72%) via paper-based questionnaires. While 53.1% of GPs were unfamiliar with hypoglycemic spices and foods, a substantial majority expressed willingness (74.3%) and confidence (58.2%) to recommend these interventions, despite concerns about their efficacy (41.3%) and mechanisms of action (31.7%).

Conclusions: Although many GPs were previously unfamiliar with hypoglycemic spices and foods, most expressed willingness to recommend these options for T2D management. Concerns about effectiveness highlight the need for further research to generate robust evidence supporting the use of hypoglycemic foods, as well as educational interventions to equip GPs with the knowledge needed to recommend such interventions confidently.

P130

Impact of the regulation of physician's establishment ("clause du besoin") on medical density and costs in Switzerland and the OECD: a literature review

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Introduction: Healthcare systems in Western countries are facing major challenges related to rising costs and shortages of healthcare professionals. Regulating the establishment of physicians is a priority solution to ensure equitable access to care and reduce costs. In Switzerland, control measures have been in place since 2002 to limit medical density in oversupplied areas and their costs, as well as encourage doctors to settle in underserved regions. These regulations, which were initially temporary and varied from canton to canton, were made permanent in 2021. The aim of this literature review is to examine the rationale and impact of these measures in Switzerland, in relation to general practice, and to compare international approaches.

Methods: A literature search following PRISMA guidelines was conducted using PubMed, Embase, Web of Science and Google Scholar. Inclusion criteria were studies that evaluated the impact of regulations on the establishment of general practitioners, costs and the geographical distribution of health professionals in OECD countries.

Results: A total of 247 articles were identified, of which 33 were reviewed in detail and 21 were retained for analysis. The included studies were classified as reports or empirical studies, focusing on the effects of medical regulation on costs and the geographical distribution of physicians.

Conclusion: Swiss studies mainly focus on the economic impact of limitations on ambulatory admissions (LDAA), but there is insufficient data on their influence on the geographical distribution of doctors. International analyses show that well-designed regulations can improve the geographical balance of healthcare professionals. However, the empirical international evidence on the effectiveness of LDAAs in reducing costs is still lacking.

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Integrating patient reported outcomes measures (PROMs) into hypertension management: a participatory design study leading to the HeartCare interprofessional digital platform

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Introduction: Hypertension affects over 1 billion people worldwide, yet only 1 in 5 patients effectively manage their condition. Even in Switzerland, over 50% of adults with hypertension do not reach blood pressure targets. The International Consortium for Health Outcomes Measurement (ICHOM) developed a PROMs set to evaluate hypertension management. PROMs are validated self-report instruments capturing patients' perspectives on health and quality of life. Incorporating PROMs into chronic care management has the potential to enhance communication, patient engagement, and outcomes. This study ex-

plores stakeholders opinions on the ICHOM PROM set and develops a strategy to implement it in a digital interprofessional tool for Swiss primary care settings.

Method(s): From March to December 2024, patients with hypertension, pharmacists and GPs participated in three rounds of participatory design. The first session explored the ICHOM PROM set's relevance for Swiss stakeholders. Subsequent sessions refined prototypes of a PROM-based interprofessional digital platform. Each round involved 4 to 7 end-user representatives. Discussions were transcribed, coded inductively, and analysed thematically to identify stakeholders needs and concerns.

Result(s): Healthcare providers (HCPs) recognize advantages of PROMs such as a better understanding of the patient's health status and enabling personalised care, but also disadvantages such as the length of the questionnaires and the potential unreliability of the answers. Integrating PROMs into existing health information systems was perceived as a solution. Patients appreciated the potential benefits of PROMs but expressed concerns about their usefulness. They emphasized the importance of presenting PROMs feedback in a clear, personalized manner relevant to their health journey. The participatory design process shaped HeartCare's features: on the mobile app, patients complete PROMs, receive real-time feedback, and track blood pressure values. Their data is accessible to their HCPs on a web platform, hopefully benefitting an individualized care.

Conclusion: This study successfully developed a solution for integrating PROMs into a digital platform for hypertension management. The participatory process ensured that the platform met both HCPs' and patients' preferences. HeartCare's features and development journey will be presented at the conference. A pilot study will evaluate its feasibility in real-world settings.

P132

Outside the Box: General practitioner's subjective need due to discomfort in prevention medicine led to the creation of a screening check list tool

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Introduction: Preventive medicine and screening are difficult to carry out because practitioners have to manage it in absence of any patient complaint. The difficulty is compounded by the fact that required tests depend on patient sex and age, and not all screenings should be repeated at same set intervals. There is a risk of screening of over-screening or on the contrary (typically sugar or lipids dosage) or with to much delay. It is proven that check lists can help clinicians to avoid omissions and improve quality of care (1).

Methods: A survey of primary care hospital practitioners was carried out at Geneva University Hospital, and then a new check list to be used in each patient file was created. We present here the results of the survey and the general principles of the check list.

Results: From a 150 requests 50 responses were received (33.3%) of which 71.6% were female. 45.2% were junior physicians, 40.4% senior and 14.2% fellows. 24% felt they under-screened and 4.8% felt they over-screened. 52.3% devised their own system to ensure this practice. Finally 90.4% considered that it would be beneficial to gave a tool to help in this task. The check-list is based on evidence and current guidelines (2). It comprises links to USPSTF Web tool, to GSLA risk calculator and instructions as to whom, when and at what frequencies each screening should be carried out (figure 1). The sections included concern cardiovascular health, cancers, infectious diseases, vaccinations and others (alcohol, depression, violence) . The checklist can be completed gradually over time, and stays in the patient file to ensure that changing physicians is not an issue.

Conclusions: A majority of a primary care hospital practitioners did not feel comfortable with screening practices and would appreciate a tool to help them in this endeavor.

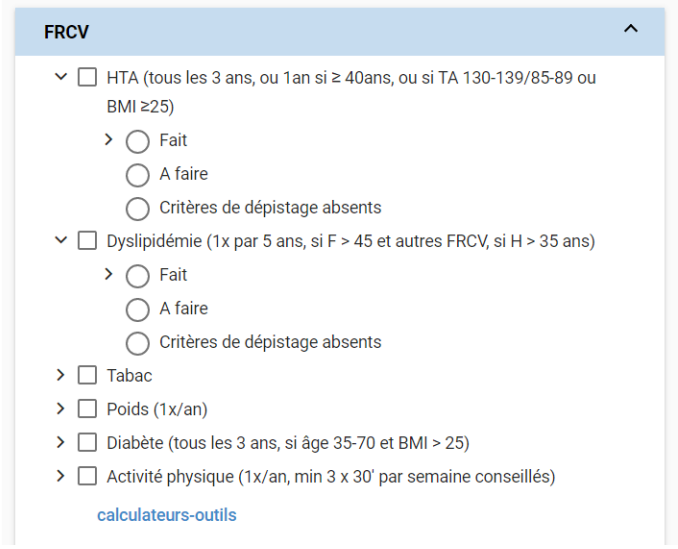

Figure 1: Extract from the Screening Checklist tool.

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Performance of the EndPAC Risk score for pancreatic cancer in new onset diabetes patients with missing data – a database study in the British Population

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Introduction: New onset diabetes (NOD) can be a first symptom of pancreatic ductal adenocarcinoma (PDAC), but less than 1% of NODs are caused by PDAC. The EndPAC score is a tool that calcuates PDAC risk for NOD patients. The score uses age, and both weight and blood glucose changes in the year before diabetes diagnosis to calculate PDAC risk. Previous studies included only patients with available data for all necessary values. The aim of our study was to find a method to apply the score to all patients.

Patients/Methods: We selected a British cohort of 50-90 years old patients with NOD diagnosed 2002 – 2018 in the Clinical Practice Research Datalink (CPRD) and followed them until they developed PDAC or were censored. We calculated the EndPAC score for all patients and assessed its performance with different imputation methods for missing values. We calibrated the score for the British population.

Results: We included 197'092 NOD patients. PDAC occurred in 901 cases within 3 years after the diabetes diagnosis. Recorded 3-year incidence of PDAC following NOD increased from 0.32% (2002) to 0.79% (2018). Complete information to calculate the EndPAC score was available for 9.2% of the patients. In those, the Area under the Receiver Operating Curve (AUC) of the original EndPAC score was 0.76. Including all patients, using the imputation of the population median for missing values, the AUC was 0.69. It improved to 0.71 after calibration to the UK population.

Conclusions: Calibrating the EndPAC score can increase its performance in the British population. Replacing missing values by the median of the population enables the calculation of a score for all patients. However, use of the EndPAC score alone is still not sufficient to select NOD patients for diagnostic workup, with or without complete information. Its use in combination with a biomarker might lead to a better risk-benefit ratio.

Original Score

Strategy to deal with missing values	Complete case analysis	Carrying values forward	Multiple imputations	Mean imputation	Median imputation
AUC (95% CI)	0.76 (0.70-0.81)	0.73 (0.70-0.75)	0.63 (0.61-0.65)	0.69 (0.67-0.70)	0.69 (0.67-0.70)
Cumulative 3-year incidence of PDAC among the different predicted EndPAC risk groups (in %)					
High risk	0.81	0.83	0.64	0.80	0.80
Intermediate risk	0.25	0.34	0.33	0.38	0.38
Low risk	0.08	0.14	0.29	0.13	0.13
Percentage of PDAC cases in patients with missing values (unable to calculate the score)					
	0.46	0.46	-	-	-
Percentage of the entire study population missing in the analysis					
	90.84	64.09	-	-	-
Abbreviations: PDAC: pancreatic ductal adenocarcinoma, AUC: area under the receiver operating curve, CI: confidence interval					

Calibrated Score

	Training set			Validation set		
Strategy to deal with missing values	Complete case analysis	Carrying values forward	Median imputation	Complete case analysis	Carrying values forward	Median imputation
AUC (95% CI)	0.75 (0.66-0.84)	0.76 (0.72-0.79)	0.72 (0.70-0.75)	0.77 (0.69-0.85)	0.75 (0.71-0.78)	0.71 (0.69-0.73)
Cumulative 3-year Incidence of PDAC among the different predicted EndPAC risk groups (in %)						
High risk	0.93	0.93	0.80	0.78	0.98	0.85
Intermediate risk	0.21	0.26	0.27	0.29	0.24	0.36
Low risk	0.20	0.12	0.13	0.03	0.15	0.13
Percentage of PDAC cases in patients with missing values (unable to calculate the score)						
	0.46	0.43	-	0.45	0.48	-
Percentage of the entire study population missing in the analysis						
	92.78	63.83	-	92.75	64.34	-
Abbreviations: PDAC: pancreatic ductal adenocarcinoma, AUC: area under the receiver operating curve, CI: confidence interval						

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Prevalence and Risk Factors of Orthostatic Hypotension in the population-based Swiss Longitudinal Cohort Study (SWICOS)

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Introduction: The prevalence of orthostatic hypotension (OH) ranges from 5% to 30%. Most of these previous studies embraced highly selected study populations and there is scare data obtained in population-based studies. Therefore, we examined the prevalence and correlates of OH in the population-based SWICOS study.

Methods: The 496 SWICOS participants underwent blood pressure (BP) measurements after adequate rest as well as 1 and 3 minutes after standing up with a validated oscillometric device. OH was defined as a reduction of systolic BP of at least 20 mmHg and/or diastolic BP of at least 10 mmHg within 3 min of

standing up from the sitting position. To assess the associations between baseline characteristics and OH, multivariate logistic regression models were performed, adjusted for age, sex, and other variables that showed a significant association with OH in univariate analysis.

Results: Among 496 participants, 72 (14.5%) had OH. Participants with OH were significantly older than participants without [mean age 62y vs. 48y; p <0.001)]. Among the participants older than 60 years (n = 129), 38 individuals (30%) had OH. Participants with OH were more often affected by arterial hypertension (32% vs 13%; p <0.001) diabetes (10% vs 3%; p = 0.009), obesity (22% vs. 12%; p = 0.023), their muscle mass was lower (65% vs. 71%; p <0.001), and shorter walking distance (160 m vs. 170 m; p <0.001). Participants with OH had a higher seated systolic (148mmHg vs. 129mmHg) and diastolic BP (88mmHg vs. 80mmHg) (both p <0.001). From 28 participants with OH who were on a prescription for antihypertensive drugs, 12 (43%) were taking more than one antihypertensive drug and/or a diuretic. Independent predictors for OH were increased systolic BP (OR per mmHg increase 1.05 (95%CI 1.03-1.07; p <0.001), higher number of prescribed antihypertensive drugs (OR 3.35; 95%CI 1.17-9.56; p = 0.024) and reduced walking distance (OR 0.99; 95%CI 0.98-1.00; p = 0.037).

Conclusion: In our study, a higher systolic blood pressure, more intensive antihypertensive drug treatment as well as reduced walking distance were associated with OH. Adequate BP measurement, adequate selection of antihypertensive drug classes and regular physical activity may be effective preventive measures to reduce OH.

P135

Primary care transformation: scoping review of existing models with a focus on funding and governance

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Introduction: In a context of increased primary care (PC) needs, global shortage of general practitioners (GPs), and the imperative to control costs, many Western countries carried out PC reforms to achieve the quintuple aim. Our objective was to identify existing options in terms of governance and funding for transforming PC from the solo GP model to team-based care.

Methods: We carried out a scoping review focusing on Western countries. An analysis grid was applied on selected studies, including general questions on reform objectives, main changes and protagonists, the sequence of events, as well as more specific questions about governance and funding. We included quantitative, qualitative, theoretical work, commentaries, and grey literature.

Results: We identified 71 primary studies from a total of 1540 studies (Medline). Patient-centered Medical Homes (PCMH) have been created in the US and rely on 3 main payers: diverse private insurance companies, Medicare and Medicaid. They involve pluri-professional teams paid fee-for-service (FFS), with coordination fees and bonuses, with recognition standards. In Ontario, Family Health Teams (FHT) involve pluri-professional teams and are paid by public insurance, mainly by capitation (60%), with a 40% increase in GP salary (patients' registries). In Quebec, the Family Medicine Groups only involve nurses and GPs, and are based on FFS mainly, with a lot of delay in the electronic health records (EHR) system. In France, the pluri-professional medical homes include teams, paid by public insurance. In Holland, the system relies on regional care groups of PC practices with an innovative out-of-hours system and EHR (and non-physician professionals). There is large heterogeneity in the implementation of each model in every country.

Conclusions: Blended payment mechanisms are the most promising funding option for PC teams, hence the need for EHR. In most models, non-physician PC providers are salaried. A diversity of funding mechanisms, and flexible options are required. Most reform initiatives have not been systematically evaluated and their sustainability remains a challenge.

Table 1. Overview of reform models

FUNDING AT MACRO LEVEL	GOVERNANCE AT MACRO LEVEL	FUNDING AT THE PRACTICES	GOVERNANCE AT THE PRACTICES
USA: PATIENT-CENTERED MEDICAL HOMES			
3 main funders: private health insurers, Medicare, Medicaid.	NCQA recognition required	PMPM payment or funding team or coordinator for several practices.	Multi-disciplinary teams (nurses, coaches, social workers)
Long-term team funding generally not guaranteed.	State pressure on insurers for investing in PC and on GPs for adopting PCMH criteria.	GPs rewarded for care coordination, or for specific PCMH components (patient registry, for example)	GP motivation sources: national effort, increased revenue, quality of care
FFS mainly, and monthly care coordination fee Incentives. 40% increase in reimbursement	GPs require a diversity of options (funding, level of risk).	GPs spend a lot of time negotiating for reimbursement from variety of payers. Harmonization required.	Contradictory demands on practices.
ONTARIO: FAMILY HEALTH TEAMS			
Public funding (universal coverage)	Created in 2000 in the context of a GP shortage.	GPs paid: 60% capitation (40% FFS and bonuses)	Multi-disciplinary teams (nurses, dietitians)
Innovative financial incentives	Contract between GPs and government for providing a list of services.	Other professionals: salaried (paid by MoH)	Patient registries and EHRs
Revenue increase for GPs (40%), reaching 80% of specialists 'revenue	FFS billing in parallel for each visit at FHT: for evaluation of new payment models	Bonus paid to GP for each new patient accepted, and for centralizing care.	GP responsible for coordinating all care received by every registered patient (including non-FM).
More medical students choosing FM		EHR paid by MoH	Sustainable if 60% population registered in FHTs.
QUEBEC: FAMILY MEDICINE GROUPS			
Public (insurance) funding of a private production (PC)	Proposal from the Government to improve performance of HC system	Main payment FFS Very little capitation Very little new payment models	Groups of GPs collaborating closely with nurses (only)
MoH funding exploitation costs of FM groups (salary of administrative personnel, spaces, travel expenses, according to number of patients listed)	Delay in EHR, also delaying development of performance incentives	Additional payment for each patient registered, coordination activities and 24/24 hours telephone service.	GPs in FM groups: share responsibility for all registered patients
Better acceptance by GPs and population than the former local centers for community services (100% public, salaried GPs)	Contract specifying the responsibility of every part Accreditation of FM groups every 3 years, allowing regular adjustment of objectives.	Nurses of FM groups have work contract with RHA, while under authority of FM group.	Collaboration with PNs with protocols or collective recipes

FUNDING AT MACRO LEVEL	GOVERNANCE AT MACRO LEVEL	FUNDING AT THE PRACTICES	GOVERNANCE AT THE PRACTICES
FRANCE : PLURI-PROFESSIONAL MEDICAL HOMES			
Main sustainable funder: social insurance (public): not really surveillance role.	Agreement since 2017.	Funding for construction sometimes came from city, region and regional health agency.	Team functioning: sometimes horizontal, with equal voice in votes
Shared EHR	Funding based on 3 main axes: access to HC, teamwork and coordination.	Pluri-professional teams	Nurses: sometimes underuse own prescribing rights.
	Many indicators: optional		Sometimes passive resistance (meeting attendance, completeness of medical files)
			Rules sometimes unclear (voting modalities, shared data)
THE NETHERLANDS : 2006 REFORM			
PC practices: easily accessible during office hours and collaborate in a unique out-of-hours system.	Financial incentives support transfer of care from hospital specialists to GPs, and task delegation from GPs to PNs.	After 2006 reforms, no copayments for patients in PC practice where registered.	Regional collaborative care groups of PC practices offer CDM.
Strong EHR system.	Bottom-up and top-down activities contributed to successful PC system.	Most practices: owned by GPs. Moving to larger teams and networks, including physical therapists, psychologists, community nurses.	QA and EHR systems: driven by HC professionals.
GPs: paid through hybrid system of capitation and FFS.	GPs: guide and gatekeeper for patients, with referrals needed for visits to hospitals and specialists.	88% of Dutch GPs: very satisfied with job, compared with 68% in US (2009).	Regional developments in HIT (eg, shared EHR) enable providers at after-hours cooperatives to consult medical records.
	2005: national accreditation program for PC, incorporating QI.	Average GP income increased by 10-15%. Medical specialists earn about 1/2 to 2 times as much, but large variation.	Support from PNs in CDM had no influence on GP job satisfaction.

Abbreviations:
CDM: Chronic disease management
FM: Family medicine
HIT: Health information technology
MoH: Ministry of health
NCQA: National Committee for Quality Assurance
PMPM: Per member per month
PN: Practice nurse
QA: Quality assessment
QI: Quality improvement
RHA: Regional health authorities

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Sometimes it is Lupus, and it needs (im)patience

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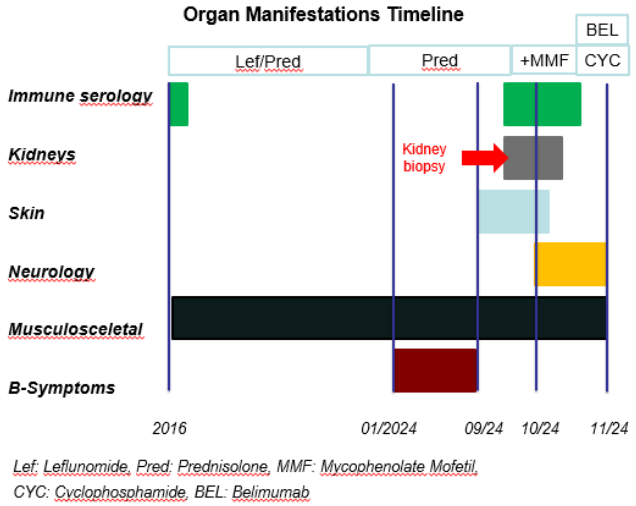
Learning objective: The diagnostic challenge regarding Lupus; confirming the diagnosis and searching for its manifestations in a long time span

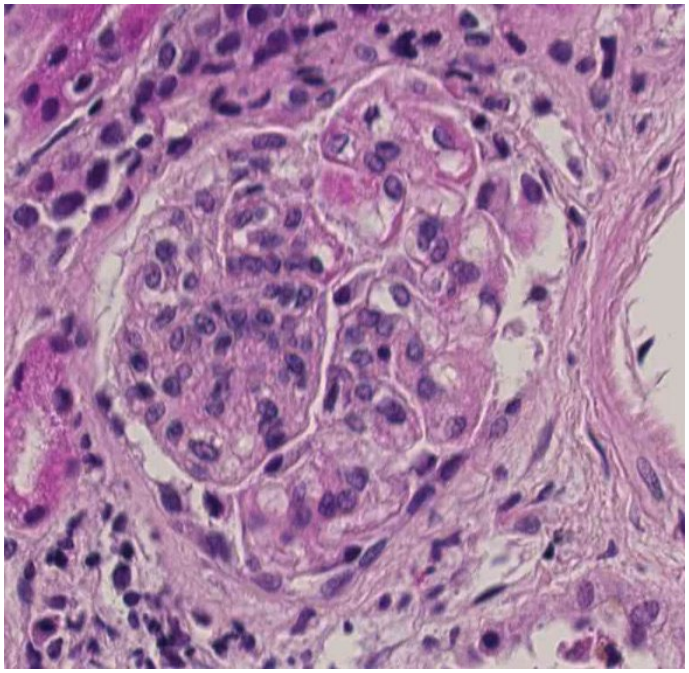
Case: A 66-years-old male patient with relapsing polyarthritis and positive Anti-dsDNA begins treatment with leflunomide and prednisolone (2016). After an oligosymptomatic interval of 7 years, leflunomide is stopped in a hospitalisation by confusion (indication formally not given, DD leflunomide-encephalopathy[1]) Referral from Specialist and Multiple ED-Presentations (08/2024-11/2024) The patient was referred for workup in outpatient basis by loss of appetite, generalised weakness and weight loss of 9kg in 9 months (08/2024). New malar rash. Between the planned consultations he was brought repeatedly in the emergency department with fever and confusion followed by inconclusive diagnostics and self-discharges. Anti-dsDNA-Antibodies markedly positive, diagnosis of systemic lupus erythematosus is after 8 years secured with kidney and skin biopsy.

Discussion: The clinical puzzle in systemic Lupus erythematosus is sometimes a diagnostic challenge. From begin of symptoms to the first workup, to the definitive proof of the disease, the elapsed timeframe may be counted in years. Apart from staying alert for new-onset symptoms, it could be useful to screen and monitor for disease activity with markers of variable dynamics when the suspicion is high. To that end, kidney function must always stay on scope, as it defines SLE-related morbidity. A pathological spot urine with casts (which is often forgotten[2]), reduced C3 and C4, anemia and increased LDH (without better explanation) or positive anti-dsDNA could help identify nephritis or hemolysis in subclinical stages and clinch the diagnosis. The classification scores (EULAR-ACR, SLICC) require otherwise no simultaneous presentation of the various findings. The frequency of the controls is not strictly defined in the latest EULAR management guidelines when the disease is known, although recommendations are made[2]. In practice though, a control every 3 months is an adequate interval to detect subtle changes in activity and treat before new organs become involved.

Conclusion: In cases of oligosymptomatic SLE a more active approach could shorten the time to diagnosis and specific therapies. Remission or low activity disease states incur lower healthcare costs[3].



Lef: Leflunomide, Pred: Prednisolone, MMF: Mycophenolate Mofetil, CYC: Cyclophosphamide, BEL: Belimumab



Glomerulus with endocapillary hypercellularity and subendothelial deposits (“wire loops” -->) (H&E), Nephritis Class III

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Taking care of patients with mental health problems in family medicine: a qualitative study exploring the experiences of general practitioners in Switzerland

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Introduction: General practitioners (GPs) often encounter patients with mental health symptoms, with prevalence rates in primary care ranging from 25% to 60%, including in Switzerland. GPs frequently serve as the first or only point of contact for these patients, playing a crucial role in detection, prevention, and management. Despite this, many GPs feel underprepared to address mental health issues, often citing limited time, heavy workloads, and insufficient training as barriers. The objective of this study was to explore the experiences of GPs in Switzerland, in the management and follow-up of patients with mental health problems and identify potential difficulties encountered.

Methods: We used a qualitative approach with semi-structured individual interviews with 17 GPs from French-speaking Switzerland. Interviews were conducted in 2023, transcribed verbatim and analyzed through reflexive thematic analysis, with an inductive theoretical framework, with the help of ATLAS.ti. Once the most important themes and sub-themes emerged, we proceeded to an external validation with 2 GPs, and an internal

validation, illustrating each sub-theme with a quote from the interviews. All along the process, a triangulation among the researchers took place.

Results: Four principal themes emerged: GPs reported that they enjoy supporting patients with mental health challenges, as they see it as a core part of holistic care and value their unique position in providing long-term, comprehensive support (i. Supporting patients: the primary mission of general practitioners). However, they reported facing significant systemic barriers, including frustration with insurance-related limitations (ii. Pricing and insurance-related barriers), lack of psychiatric collaboration (iii. Reaching psychiatrists), and insufficient resources. They also called for some helps and new ideas to improve their care (iv. Needs of general practitioners).

Conclusion: Swiss GPs play a crucial role in mental health care, but this duality - dedication to patient care yet frustration with systemic constraint - highlights the complexity of mental health management in primary care. Addressing gaps in public health, training and inter-professional collaboration is crucial for sustainable improvement.

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A near peer mentoring program to strengthen junior medical students' professional identity formation: results of a needs assessment

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Introduction: A survey carried out at the University of Geneva's Faculty of Medicine in April 2024 showed that medical students, regardless of their training level, experienced recurrent moments of uncertainty and doubt, which undermined the development of their professional identity. A large number of junior students expressed the desire to have formalized individual or group discussions with senior students to help them better cope with these moments of doubt. The aim of the study was to explore the difficulties experienced by junior students and their expectations regarding a peer mentoring program during the bachelor years.

Methods: Three senior students conducted four focus groups with a convenience sample of junior students. The interview guide included questions about the difficulties encountered during the bachelor years, as well as the strategies that helped or would help to overcome such difficulties. Discussions were transcribed and analyzed thematically.

Results: Twenty-two junior students took part. They expressed difficulties related to learning and assessment methods, insufficient clinical exposure to make the link between theory and clinical reality, and a lack of information to understand the training pathway. They also reported a tension between the spirit of collaboration desired by the faculty and the competitiveness inherent to the assessment modalities. Many expressed feelings of loneliness and a loss of motivation and meaning in relation to the content being taught. Some reported a high level of stress at the idea of having to plan their career. They all asked for regular meetings with senior students in order to exchange information not only about the curriculum and clinical clerkships, learning techniques, and examination modalities, but also to share about the emotional experience of the curriculum and stress management strategies.

Conclusion: A peer mentoring program emerges as an important element in supporting the development of the professional identity of junior medical students. The themes identified will be integrated into the pilote program which is about to start.

P139

Challenging Boundaries: Moral Distress and Ethical Dilemmas in Early Medical Practice

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Introduction: Moral distress is prevalent among healthcare professionals, with junior physicians particularly vulnerable due to their limited experience and the hierarchical constraints of their roles. This study examined the moral and ethical dilemmas of Swiss junior physicians in their distinctive roles within the healthcare system and how these challenges contribute to the experience of moral distress.

Methods: We conducted 45 semi-structured interviews with junior (n = 21) and senior physicians (n = 15), nurses (n = 3), ethicists (n = 3), and other key stakeholders (n = 3) and analyzed them using Thematic Analysis.

Results: Four themes encompassed junior physicians' moral and ethical challenges, leading to moral distress: Doubting own professional readiness: Junior physicians often felt unprepared for the level of responsibility placed upon them. High expectations, limited supervision, and fear of errors seemed to contribute to their moral distress, particularly in critical and unsupported situations, such as night shifts. Balancing high accountability while being vulnerable as an early-career physician: Junior physicians faced ethical and moral dilemmas in direct patient care, including conflicts with families and challenges in respecting patient autonomy. Limited agency in decision-making while being held accountable for outcomes was common, and many seemed afraid to speak up against senior colleagues due to hierarchies. Falling short of own ethical self-expectations under constraints: High workloads, time pressure, and systemic constraints hindered junior physicians' ability to meet professional and ethical standards, creating internal conflicts and distress. Balancing well-being and patient care: Junior physicians reported struggling to prioritize self-care amid the demands of patient care.

Conclusion: Different types of moral and ethical dilemmas faced by junior physicians contribute to their moral distress. A gap between responsibilities and preparedness, combined with systemic constraints and hierarchical pressures, forces junior physicians to make decisions conflicting with their ethical values, intensifying their emotional strain. These findings point to the need for systemic support, such as assigning tasks aligned with training levels and providing enhanced supervision—both in quality and quantity—particularly during the initial stages of a new job. With such targeted support junior physicians' well-being and patient care quality could be improved.

P140

Effectiveness of Blended Learning to Improve Medical Students Communication Skills: A Randomized, Controlled Trial

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Introduction: This study aimed to evaluate whether a blended learning course improves medical students' communication skills compared to a face-to-face only lecture.

Methods: After completing a face-to-face lecture on communication skills, 2nd year medical students were gender matched randomized to either an intervention receiving an interactive video-based e-learning module covering the content of the previous lecture and including a knowledge assessment or a control group only receiving a knowledge assessment. The primary endpoint was students' knowledge about communication techniques assessed by a predefined score from 0 to 100. Secondary outcomes included students' feedback and satisfaction on a scale from 0 to 5. Additionally, qualitative analysis of free-text responses to patient case vignettes was conducted.

Results: One hundred sixty-four medical students were included in the final analysis (64% female). Students in the intervention group had significantly higher knowledge (mean, SD points) (73.6 ± 10.7 versus 56.7 ± 15.3, adjusted difference 17.02, 95%CI 12.95 to 21.1, p <0.001) and reported higher satisfaction (4.3 ± 0.9 versus 3.5 ± 1.0, difference 0.78, 95%CI 0.48 to 1.07, p <0.001) compared to the control group. Qualitative analysis of free-text responses also revealed improvements in patient-centered communication techniques in the intervention group.

Conclusions: Blended learning significantly enhances medical students' communication skills and satisfaction compared to traditional lecture-based learning and may thereby contribute to the development of future knowledge and practices to improve patient-centered care.

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Evaluating the Impact of an Educational Video for Physicians and Pharmacists on Reporting Adverse Drug Reactions

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Introduction: Reports of adverse drug reactions (ADRs) by healthcare professionals are crucial for obtaining timely information about previously unknown risks of drugs after their market launch. Despite mandatory reporting requirements in the Therapeutics Products Act, underreporting of ADRs is common in Switzerland [1]. To raise awareness and prompt physicians and pharmacists to report, Swissmedic launched a short educational video in cooperation with the multi-stakeholder working group "Promoting Spontaneous Reporting" [2]. The objective of the study was to evaluate whether the target group was reached and to identify the impact of the video on the number of ADR reports by physicians and pharmacists.

Methods: We analyzed the number and duration of views during seven months following the release of the video. Additionally, the number of spontaneous reports submitted by physicians and pharmacists to Swissmedic and the regional pharmacovigilance centers or to market authorization holders (MAHs) were assessed over a total period of 24 months. Differences between the period before (17 months) and after (7 months) the video release were examined using the Mann-Whitney U test.

Results: The video was launched on May 27, 2024. It received a total of 3'441 views up to December 31, 2024. The monthly number of views declined from 1'592 in June to 108 in December. On average, viewers watched 42% of the total video duration. The average number of reports per month during the 17 months before the video launch was 151.4 for reports submitted to Swissmedic/regional pharmacovigilance centers and 206.6 for reports submitted to MAHs. During the 7 months following the launch the average number of reports slightly increased to 166.9 and 227.7, respectively, though differences were not statistically significant.

Conclusion: Assuming that there are around 48'200 physicians and pharmacists working in Switzerland [3, 4], the video reached only a small fraction of our target group. The decreasing number of viewers over time highlights the need for additional measures to promote the video. No significant short-term impact on the number of reports was observed. Continuous information campaigns on the importance of spontaneous reports and the legal reporting requirement for physicians and pharmacists are needed to increase the number of reports in the long term.

P142

Faculty development course focusing on dialect and local sociology for an inter-professional healthcare team: a pilot study

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Introduction: Language has a clear cultural dimension, and dialects, which are local variants of a language, convey a strong sense of cultural belonging. In healthcare, language concordance between patients and healthcare profesionnals increases the quality of care. Healthcare professionals unfamiliar with the local dialect in their work settings tend to face the same challenges as those working in bilingual settings.

Aim: To create a local dialect course for healthcare professionals.

Method: A two-part introductory course on the local dialect (Senslerdeutsch) was developed by two experts (linguist/physician). Duration was two-times 90 minutes. As key themes, the course covered a) historical and social factors and b) peculiarities of the local dialect (including language exercises). Twelve participants (six physicians and six nurses) completed the pilot, and ten participants completed the evaluation(83% RR). We evaluated the effectiveness of the intervention via a retrospective pre-test, a single post-test, Kirkpatrick's levels 1 and 2 (self-confidence/5-point Likert scale), and a qualitative free

text questionnaire (general/strength/improvement). The analysis was descriptive (median [IQR]) and non-parametric (Wilcoxon test).

Results: The participants found the course to be well organized, of an appropriate length, structured, and relevant to daily work. The course increased the perceived skill levels of the participants (nurses more than physicians (4.5 [1] vs. 3 [0] , p = 0.013). Participants' perceived increased self-confidence in describing a) the historical context of the dialect, b) the profiles of dialect speakers, c) the dialect's links with neighboring dialects as well as understanding d) typical sayings, e) typical medical terms, and f) the dialect's advantages/disadvantages over standard language. Their confidence in caring for a patient speaking the local dialect increased (3.5 [1] vs. 5 [2] , p = 0.03). However, participants' confidence in describing the role and influence of the dialect did not change. In their qualitative feedback, participants emphasized interacting with an expert speaker and wanted to continue with the course. A stronger focus on the spoken language instead of language history was cited as an area for improvement.

Conclusion: An introductory course on the local dialect is a feasible solution for increasing physicians and nurses' confidence in caring for patients speaking a local dialect.

P143

Generation Feedback: The Need for Feedback in Residents AND Attendings for optimal Individual Development

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Introduction: Feedback is crucial in clinical learning, helping learners understand their progress and areas for improvement. It motivates growth in knowledge, skills, and behavior and fosters self-directed learning. However, residents often receive feedback infrequently, mainly due to limited direct observation in busy clinical settings (Burgess et al. 2015). When feedback is given, it can be vague, demotivating, or lack actionable steps (Shafian et al. 2024). Effective feedback requires clear identification of performance gaps and a concrete plan for improvement.

Research question: Are the current feedback mechanisms in our clinic aligned with the needs of residents in training and their supervising attendings?

Methods: We conducted an online survey among residents and attendings to evaluate the frequency and quality of current feedback practices at the Department of Internal Medicine at the University Hospital Basel.

Results: The survey revealed that regular feedback from attending physicians to residents occurs more often than expected, though perceptions differ: 42% of residents reported weekly feedback, compared to 94% of attendings claiming to provide it. Bottom-up feedback is emerging, with 70% of attendings receiving feedback from residents several times a month. But Attendings also desire more feedback from their superiors. 73% reported that they received feedback from a superior less than once a month. To the question: "Would you like to receive more feedback from one of your supervisors", attendings answered with a mean of 7.35 on a scale from 1-10 (1 not at all, 10 very much), but the desire was heterogenous.

Conclusion: We believe the discrepancy in feedback perception cannot be solely attributed to the varying schedules in daily clinical practice of attending physicians', thus providing feedback at varying frequencies. We suspect that feedback is often not perceived as such. One possible reason is that the feedback is not effective enough, because it lacks a concrete action plan with clear learning objectives. This could explain why residents perceive the feedback as only moderately helpful to their training. There appears to be a growing trend among the younger generation to actively seek and value feedback even after attaining board certification. Addressing this will be crucial to achieve better job satisfaction, especially in times of shortage of specialists, and will also support the implementation of competency-based medical education.

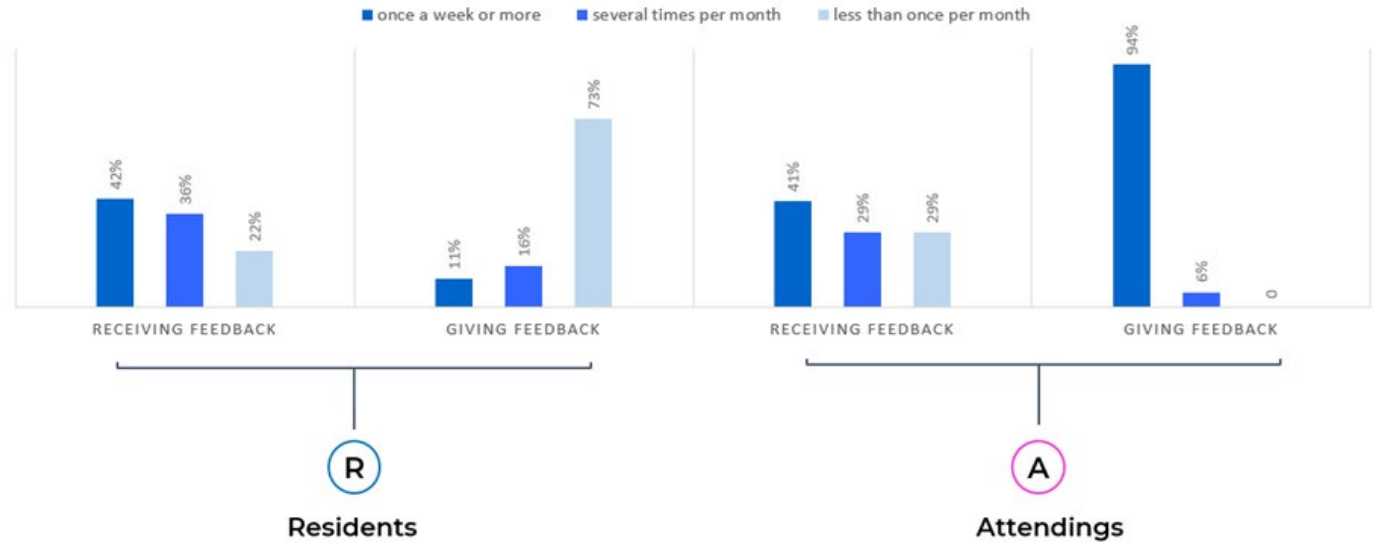

Fig.1: Perception of feedback frequency among residents and attendings

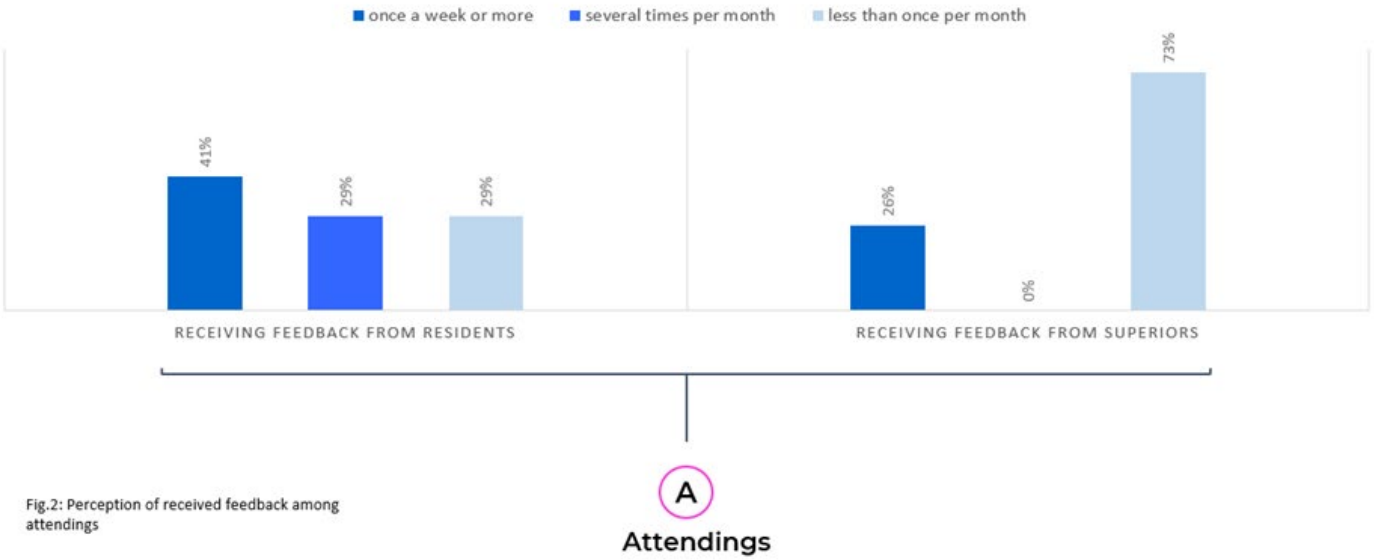

Fig.2: Perception of received feedback among attendings

P144

Kotter's Eight Steps Model for EPA/CBME Implementation in Healthcare Institutions: A Scoping Review

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Background: The shift from time-based training to competency-based medical education (CBME) is reshaping postgraduate medical education in Switzerland. In 2024, five cross-disciplinary Entrustable Professional Activities (EPAs) will be introduced across five hospitals, led by the Swiss Institute for Medical Education (SIWF). However, EPA implementation in hospitals often faces resistance, potentially hindering adoption. Change management frameworks can help engage stakeholders and reduce resistance, yet little guidance exists on which are most effective. Kotter's Eight Steps Model is a well-known change management framework widely used in business and healthcare. Despite its prominence, limited research explicitly applies it to EPA/CBME implementation. This scoping review synthesizes existing literature on EPA/CBME implementation in healthcare institutions, with a focus on Kotter's model.

Method: Following Arksey and O'Malley's six-step framework and PRISMA-ScR guidelines, we systematically searched six databases (PubMed, Google Scholar, Scopus, Web of Science, ERIC, CINAHL) with a defined search string, guided by an information specialist. Eligible studies described the implementation of EPA/CBME in a single-centre healthcare institution, with an explicit or implicit reference to Kotter's 8 steps.

Summary of results: A total of 15 eligible articles were found, with Kotter as one of the most widely used frameworks in medical education. Initial findings from our synthesis compiled recommendations across relevant articles, reporting specific actions to facilitate transformational change. We conducted a qualitative evidence synthesis to analyze change management strategies, tools, and recommendations from selected articles on EPA/CBME implementation in healthcare institutions.Topics of interest include creating urgency for change, building strong partnerships, faculty development, and establishing common standards to ensure stakeholder input and planned resources.

Discussion and conclusion: Given the scarcity of explicit implementation frameworks, we are reframing our search strategy to capture all change models that may inform recommendations and strategies for sustainable, effective transformations. Key findings emphasize strong institutional leadership, faculty training, and resource-intensive implementation. This review highlights the need for more structured research on change management models in EPA/CBME adoption.

P145

Mental Health and Burnout Among Swiss Medical Students Living in Contexts of Deprivation

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Introduction: Mental health among medical students has been the subject of much discussion, with studies reporting alarmingly high prevalences of mental health issues, such as depression symptoms, anxiety and suicidal ideation. Few studies have explored the relationship between the dimensions of social and material deprivation and these outcomes, despite reported increased risk of psychological disorders among the general population when exposed to precarious living conditions. Longitudinal data associating deprivation with poor mental health in medical students is lacking both locally to Switzerland and internationally, and no formal tool has been used to assess the dimensions of deprivation. Our study aimed to explore longitudinal associations between living in deprivation and mental health outcomes among Swiss medical students.

Method: Data was collected from hour-long online surveys at time points T3 (Nov-Dec 2022) and T4 (Nov-Dec 2023) of an open cohort study of medical students from the University of Lausanne, Switzerland (ETMED-L, Berney A, Carrard V, Berney S, et al.). The final sample consisted of 631 students (67.5% female, mean age 22.11 ± 2.95). Deprivation was evaluated with the DIPCare-Q deprivation index. Mental health variables measured were depression symptoms, anxiety symptoms, suicidal ideations and dimensions of burnout (emotional exhaustion, cynicism, academic efficacy). Data was analysed using hierarchical multiple regression models.

Results: In our final regression model, controlling for socio-demographic factors, coping skills (emotion-focused, problem-focused & help-seeking), social support (practical and emotional support) and baseline mental health scores, a higher overall deprivation index was predictive of increased depression symptoms ($\beta = 0.14$, $p < .001$) and anxiety symptoms ($\beta = 0.06$, $p = 0.046$) over time, but not for suicidal ideation or burnout symptoms.

Conclusion: Results demonstrated a notable impact of deprivation on mental health cross-sectionally and longitudinally. Results suggested that coping skills and social support were longitudinally protective from suicidal ideations and emotional exhaustion (burnout symptom). To promote better mental health among medical students, it is imperative to implement interventions that aim to support them materially and socially.

P146

«This is going to sting! » Preliminary Results from a Simulation on Communication Gaps Among Medical Students

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Introduction: Communication is a double-edged sword. While effective communication can enhance patient recovery and alleviate pain, poor communication can have severe repercussions.(1) In particular, the use of negative phrases such as "this will hurt" or "it will sting" can enhance pain perception and increase anxiety during procedures. This effect is particularly powerful when patients are in a hyper-suggestible state, such as when facing medical procedures or hospitalization, which can heighten their sensitivity to pain and stress.4 5 6 7 8 9 Recent research has demonstrated that emotionally charged words activate brain networks linked to pain perception, likely intensifying the sensation itself. 10 This study examines medical students' communication skills in their second and third years while performing a medical procedure.

Methods: Fifty volunteer medical students participated in the study (high-fidelity simulation with simulated patient, SP). After a brief theoretical training session covering the technical aspects of the procedure, participants were required to perform local anesthesia on the SP's simulated arm. The simulations were video-recorded. Two independent evaluators analyzed the recorded interactions using a validated coding framework for communication developed by our Working group. Any discrepancies in coding were resolved through discussion, with a third reviewer consulted if necessary.

Results: Our preliminary findings suggest that medical students overlook the significance of non-verbal communication during patient interactions. We observed common behaviors such as standing over patients in a dominant posture (« towering ») and making minimal eye contact. Additionally, students frequently used negative suggestions, such as "Beware, I am going to sting" or "This is going to hurt," which may unintentionally heighten patient anxiety and perceived pain. On the other hand, they appeared reluctant to use strategies like « small talk » or distractions that could help alleviate the patient's discomfort.

Conclusion: Our findings suggest that ineffective communication habits are ingrained early in medical students, likely shaped by previous experiences and role modeling from senior clinicians. Given the potential impact of these habits on patient experience and outcomes, addressing them early in medical education may help future healthcare professionals develop more patient-centered and empathetic.

P147

Using Kotter's 8 Steps model for the implementation of Entrustable Professional Activities in residency training: Creation of an Action Plan

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Background: Currently, medical training in Switzerland is being restructured from time-based education to competency-based medical education (CBME), led by the Swiss Institute for Medical Education (SIWF) in collaboration with professional societies and training institutions. This includes the use of Entrustable Professional Activities (EPAs) for teaching and assessment in residency training.

Introducing new concepts like CBME and EPAs often faces resistance, consuming resources and risking implementation failure. Using a change management model can help convince stakeholders and reduce resistance. This study makes use of Kotter's 8 step model [Kotter, 1995], a well-established change management model used in various sectors, including health care.

Research Question: How can Kotter's 8 Steps model facilitate the implementation of EPAs in a hospital department?

Method: First, we conducted a literature search of international literature, and summarized the findings into an Action Plan. We take the department of Internal Medicine of a medium-sized Swiss hospital as an example for the creation of the Action Plan. Second, we conduct interviews with organisers of CBME implementation from various training sites to gather their experiences and their recommendations on how to use Kotter's model to guide implementation and to refine the Action Plan, making adaptions to make it transferable to other settings.

Summary of results: We formulate detailed recommendation on the implementation of EPAs which are ordered following Kotter's 8 steps, which are: Create a Sense of Urgency, Form a Powerful Coalition, Create a Vision for Change, Communicate the Vision, Remove Obstacles, Create Short-Term Wins, Consolidate Gains and Produce More Change, Anchor the Changes in Corporate Culture. Details on each step will be presented.

Discussion and conclusion: As the Action Plan is based on the international literature and international frameworks, it should be transferable to other regions and departments undergoing the same change towards CBME.

P148

Year 4 medical students' performance at an end-of-block examination and satisfaction using a supplemented test-enhanced learning strategy (TELMA): a prospective controlled cohort study

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Introduction: Test-enhanced learning, progress test, detailed feedback and exam-like testing conditions can all contribute to knowledge retention and transfer, and so foster clinical reasoning. We designed an educational intervention including features of these strategies (TELMA) and implemented it in a medical clinical undergraduate teaching unit. The aim was to evaluate students' performance at the end-of-block examination and satisfaction with the intervention.

Methods: We compared the medical student cohort from 2021 (no intervention) with the cohorts from 2022 and 2023 (TELMA). The intervention involved three formative written assessments during the teaching unit, held in exam-like conditions. Content was similar to the end-of-block examination. Students received individual detailed feedback by email within three days of each test. Examination scores and scores for case-based questions only were compared. A questionnaire was administered right after the examination to assess students' satisfaction.

Results: Among 319 students, 291 (77.7%) attended all three tests, and 91.2% at least one. Mean scores increased from the first to the last assessment. The larger increase was between test 1 and test 2 (+15.97±13.69, $p < 0.0001$). Mean score at the examination was 67.13 ± 7.94 in the intervention group, compared to 68.92 ± 6.56 in the control group ($p = 0.015$). No difference in scores was found for the case-based questions ($p = 0.052$). Students attending the three tests performed better than the others (68.01±7.85 vs 65.00±7.8, $p = 0.002$). Out of 319 students, 274 (85.9%) responded to the survey. Most (90.6%) found TELMA useful (4.4±0.7 on a 5-point Likert scale), and would recommend it to their peers (98%). The features rated highest were the feedback (4.6±0.7), the explanatory texts (4.6±0.7), and the opportunity to apply knowledge (4.4±0.7).

Conclusion: Our test-enhanced learning intervention was set in real-life educational context. It showed increased performance on relevant educational outcomes when students participated to all the tests. Student engagement and satisfaction were high, a key element for the successful implementation and sustainability of novel interventions.

P149

A cardiac syncope in disguise

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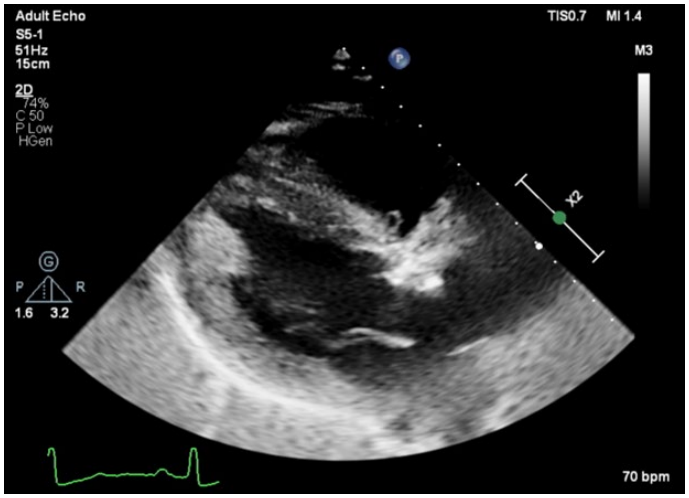
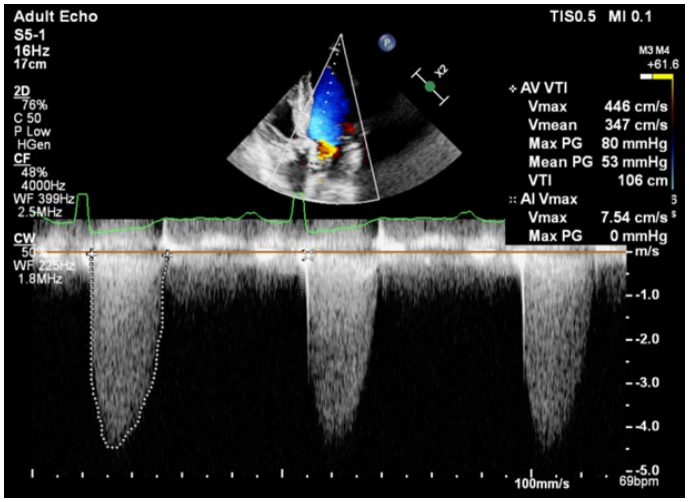
Learning objective: A thorough clinical investigation is a crucial part of diagnosis. Aortic stenosis is a rare, but well known cause of syncope in young, healthy patients. One should not be misled by typical triggers of vasovagal syncope like diarrhoea.

Case: A 48-year old healthy smoker (40py) presented in our emergency department (ED) after a first syncope. He had normal vital signs and was in good condition. He described dizziness and the urge to pass diarrhoea immediately before the syncope. He did not describe palpitations, dyspnoea or chest pain. Clinically, a 4/6 systolic murmur was heard. We saw a first degree av-block. Laboratory workup was unremarkable. Echocardiography revealed a severe, calcified aortic stenosis with a destructed valve (opening area 0.7cm^2). The left ventricle showed a slight concentric hypertrophy with an ejection fraction of 65%. The patient was admitted with continuous ECG-monitoring. In the following days, the patient received a rule-out coronary angiography. A Holter-ECG showed no relevant findings. Four days later, the patient was transferred to a university hospital, where he received minimally invasive mechanic aortic valve replacement. After five days, he was discharged to an inpatient cardiac rehab center.

Discussion: A syncope can stem from various causes. Most prevalent, especially in the young, are vasovagal syncopes. Basic diagnostic should include a detailed anamnesis, a physical examination, an ECG and a Schellong test. If a cardiac syncope is suspected, these should be complemented with a 24-hour ECG and echocardiography. Aortic stenosis can be congenital or acquired. Congenital pathologies are most prevalent in the population under 55 years and are associated with unicuspid (often detected in early childhood) or bicuspid valves. Those produce turbulent flow and lead to fibrosis or calcification. Acquired aortic stenosis is often caused by degeneration (calcification), endocarditis or rheumatic fever. In our patient, there was no history of endocarditis or rheumatic fever. His mitral valve was intact, also not supporting rheumatic fever as the cause. Echocardiographically, severe calcification was seen. He only had a few cardiac risk factors (gender, smoker). It can be speculated that the patient may have had a bicuspid valve, which couldn't be determined with certainty in echocardiography.



Calcified aortic valve



Increased mean transvalvular pressure gradient (53 mmHg) and peak velocity (446cm/s).

P150

A case of unrecognized lymphoma presenting with Meningoencephalitis caused by Listeria monocytogenes: A Case Report

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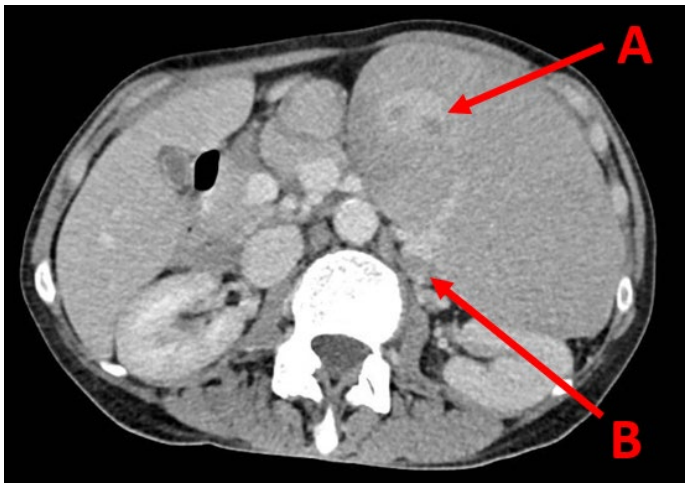
Learning objectives:

- Recognize the need of high level of clinical suspicion in patients coming from other health care systems
- Understand the broad presentations of Listeria meningitis in immunosuppressed patients and rapidly adjust antimicrobial therapy

Case: A 70-year-old female allegedly previously healthy Russian tourist presented with weakness and abdominal discomfort. Clinical examination revealed a cachexia, fever (39.8°C) and marked splenomegaly. Laboratory analysis are shown in Tab. 1. On CT scan, the spleen was markedly enlarged with suspected hemorrhage, (Fig. 1). Due to sepsis of unknown origin, empiric antibiotic therapy with piperacillin/tazobactam was initiated. Urgent splenectomy was performed successfully despite thrombopenia on the following day. Due to a new postoperative meningism and confusion, a lumbar puncture was performed. Upon finding of pleocytosis (533 x 10^6), L. monocytogenes in PCR in liquor and positive blood cultures, diagnosis of meningoencephalitis with L. monocytogenes was established and antibiotic therapy adjusted to amoxicillin and gentamicin. The neurological symptoms improved only transiently and the patient developed acute renal failure with nephrotic syndrome. Renal biopsy showed focal acute tubulointerstitial nephritis. Electron microscopy revealed minimal change disease. Histopathological examination of the spleen confirmed a diagnosis of diffuse large B-cell lymphoma (DLBCL). Despite therapy according to guidelines, the patient's

state deteriorated progressively and the patient died 13 days after presentation.

Discussion: This case illustrates the complexity of hematological malignancies and its complications, emphasizing a multidisciplinary approach. DLBCL represent almost 30% of all non-Hodgkin's lymphomas, frequently presenting with extranodal disease and requiring rapid therapy onset due to its aggressive nature.[1] In Listeriosis, immunosuppression predisposes to bacteraemia and neurolisteriosis. Strongest mortality predictors include ongoing cancer, multi-organ failure and cytopenia, all of which were present in our case. In spite of appropriate treatment, mortality remains high at 30%.[2] Nephrotic syndrome was due to minimal change disease, while the acute kidney injury resulted from acute antibiotic-induced interstitial nephritis.[3] Difficult retrieval of medical information in patients coming from abroad necessitates high level of clinical suspicion even in case of initial oligosymptomatic presentation.



Laboratory findings upon presentation	Result	Reference Range
C-reactive protein	137 mg/l	<5 mg/l
Lactate dehydrogenase	824 U/l	<250 U/l
Hemoglobin	62 g/l	118-158 g/l
Leukocytes	2.7 x 10^9/l	3.6-10.5 x 10^9/l
Platelets	60 x 10^9/l	150 – 370 x 10^9/l

P151

A slippery misdiagnosis of gastric haemorrhage

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Learning objective: The treatment of gastrointestinal ulcer disease depends on its aetiology and ranges from the inhibition of gastric acid to eradication of Helicobacter pylori. However, there are unconventional therapeutic approaches within the general population which can lead to diagnostic challenges.

Case description: An 83-year-old male presented via the emergency department with suspected upper gastrointestinal bleeding (GIB). He had a history of upper GIB six months prior classified as Forrest III and IIc and gastroesophageal reflux disease (GERD). The patient reported vomiting brownish-mucous material twice on the morning of admission, initially haemoglobin level was 104g/L, vital signs were stable. A same-day gastroscopy revealed no source of bleeding but did show residual brownish clumps in the stomach. Deeper history-taking revealed that the patient had independently discontinued proton pump inhibitor (PPI) therapy several months earlier and switched to a natural remedy. He reported regularly swallowing slugs on experiencing gastritis symptoms. He stated this method – learned from his grandparents – had been particularly effective in relieving stomach pain in the past. The slugs were collected from his garden, cleaned with tap water, and swallowed whole and alive. Furthermore, the patient reported significantly better symptom relief from swallowing live, whole slugs compared to cut-up slugs. He had transitioned from PPI therapy to slugs to minimise his intake of medication. Under high-dose PPI therapy, the patient's symptoms resolved quickly with no further episodes of vomiting or melena during the 5-day inpatient stay. The patient was discharged with recommendations to continue PPI therapy and to cease slug ingestion. The brown clumps observed during gastroscopy were most likely remnants of partially digested slugs, and the brownish vomitus was retrospectively attributed to the slugs rather than a gastric bleed.

Discussion: We were surprised to find a number of formal studies examining the effects of slug mucus on ulcers; some studies compare the effects of slug mucus versus monotherapy using clarithromycin, while others describe the swallowing of live, whole slugs as "the most popular use of this gastropod". As always, a good history is key, although we admit that we do not routinely question patients regarding slug consumption!

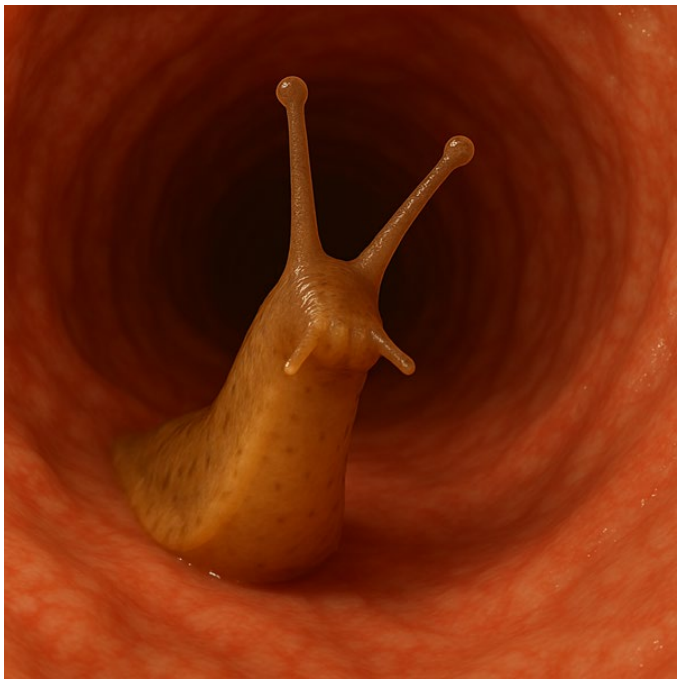

Figure 1: In gaster veritas. AI-generated illustration of a hypothetical endoscopic finding in gastroenterology, created with ChatGPT (Open AI, DALL·E). This depiction is purely conceptual and not a medical reference.

P152

Acute rheumatic fever after an Egypt holiday: a case report

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Learning objective(s): Acute rheumatic fever (ARF) has become a rare disease in European countries. With increasing migration from endemic areas, the incidence might rise again. Knowledge about the clinical presentation of ARF is therefore fundamental.

Case: An 18-year-old female patient was referred to the emergency department five days after a one-week holiday in Egypt. She presented with intermittent fever (up to 39°C), immobilizing, migratory joint pain (ankles, elbows, hips, wrists) and a temporary sore throat. Laboratory values showed increased leukocytes (Lc, 16.8 G/l), C-reactive protein (CRP, 133 mg/l) and erythrocyte sedimentation (50 mm/h). X-ray of the chest, urine analyses, serological testing (e.g. EBV, CMV, HIV) and subsequently travel-associated pathogen-testing for Malaria, Dengue, Zika and Chikungunya were negative. A viral upper respiratory infection was suspected and a symptomatic treatment established. Few days later the patient was re-referred with persistent symptoms. Lc (19.5 G/l) and CRP (227 mg/l) continued to rise. New subcutaneous nodules over the thighs occurred. Finally, the Antistreptolysin-titer showed to be elevated (669 U/ml). Acute rheumatic fever was diagnosed according to Jones criteria. Echocardiography and laboratory tests showed no sign of cardiac involvement. Amoxicillin and high-dose acetylsalicylic acid led to a dramatic clinical improvement. Due to high recurrence rates of streptococci infections (with potential molecular mimicry), secondary prophylactic antibiotics with long-acting penicillin G benzathine administered intramuscular was started to prevent rheumatic heart disease (RHD).

Discussion: ARF is a clinical syndrome with fever, arthritis and carditis as the main manifestation. Group-A streptococcal (GAS) infections of the throat are the triggering cause of this inflammatory autoimmune disease. Morbidity and mortality are primarily determined by cardiac involvement. Diagnosis is made using the revised Jones criteria. Antibiotic treatment for confirmed ARF is undisputed to prevent RHD. Secondary prophylaxis of ARF serves to prevent recurrent GAS infections and thus the recurrence or worsening of an existing RHD by molecular mimicry. Guidelines for primary prophylaxis of ARF in GAS pharyngitis are not consistent. Current European treatment guidelines do not recommend antibiotic primary prophylaxis. However, with increasing numbers or changing of the virulence of streptococci, this may change in the future.

P153

Adrenoleukodystrophy - a rare cause of primary adrenal insufficiency

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Learning objectives: Presenting a rare but occasionally encountered disease named adrenoleukodystrophy, caused by an X-linked perixosomal disorder with mutations in the ABCD1-gene, leading to an accumulation of very long-chain fatty acids in various tissues, (brain, spinal cord, adrenal cortex, testes) resulting in an combination of neurological and endocrinological manifestations.

Case: A 36-year old male patient was refered to our clinic for endocrine assessment. From 2021 on the patient developed neurological symptoms (gait disorder, spastic paraparesis, muscle weakness). An ENG showed a demyelinisating peripheral polyneuropathy, a cerebral MRI showed a lesion in the Pons paramedian left (assumed to be of postinflammatory or microvascular genesis). Upon presentation at our clinc the patient complained about a general decline in energy level inculding a weight loss of -12kg in 3 years, libido loss and erectile dysfunction. He had recurrent febrile infections which were frequently associated with nausea/emesis, malaise and loss of conciousness leading to recurrent hospitalisations. A low blood pressure, sun-tanned skin, hyperpigmentation of the handlines and scars were noticed. A Synacthentest revealed an adrenal insufficiency and a substitution with hydrocortisone and fludrocortisone was initiated. The combination of neurological disorder combined with the adrenal insufficiency led to the possible diagnosis of an adrenoleukodystrophy, which is a rare genetic disorder of primary adrenal insufficiency combined with neurological symptoms affecting especially men. A genetic testing confirmed this diagnosis with a hemizygotic mutation on the ABCD1-gene (coding the ALD-protein). The mutation (ALD-protein normaly transports VLCFA from cytoplasma to the Peroxisoma) leads to an accumulation of Very Long Chain Fatty Acids (VLCFA) in the cytoplasma, susceptile cells get damaged and lose their function (brain, spine, male gonads, adrenals). The family of the patient was also screened with the same mutation in his mother and sister without symptoms.

Discussion: This case highlights the importance of combining different symptoms from various organ systems together to find the right diagnosis. Adrenoleukodystrophy is a rare but important cause of primary adrenal insufficiency which should be in the differential diagnosis of each young male patient presenting with an primary adrenal insufficiency without an other cause herefore and with/without neurological symptoms.

P154

An unusual cause of pulmonary embolism

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Clinical variability of granulomatosis with polyangiitis

Case: A 28-year-old male patient presented with a 3-week history of left-sided pleuritic chest pain, without dyspnea, which improved after a one-week course of ibuprofen. After discontinuing the treatment, he developed multiple bilateral joint pains (hands, elbows, knees and feet). His medical history includes chronic sinusitis and a weight loss of 5 kg in 4 weeks. On examination, there was a saddle nose deformity (Fig 1) and nodular skin lesions on the extensor surface of the elbows (Fig 2), with no signs of arthritis. A skin biopsy revealed granulomatous dermatitis. Laboratory tests showed elevated levels of C-Reactive Protein (CRP), erythrocyte sedimentation rate (ESR) and Anti-PR3-ANCA. Urinalysis revealed microscopic, nonspecific hematuria. Computed tomography of the thorax identified subsegmental pulmonary embolisms in the left upper lobe and two tiny nodules. The presentation was consistent with granulomatosis with polyangiitis with inflammatory polyathralgias, cutaneous, pulmonal and possible renal involvement. The patient

received a treatment with rivaroxaban, prednisolone (50mg/d), with PCP prophylaxis and rituximab.

Discussion: Granulomatosis with polyangiitis (GPA) is a necrotizing vasculitis affecting small-sides arteries. Most affected are the ENT (ear, nose, throat) region (~80%), lungs (67%) and kidneys (50%) [1]. There is a strong association to PR3-ANCA [2]. Laboratory tests include blood count, creatinine level, urinalysis with sediment, MPO- and PR3-ANCA, ESR, serum complements C3,C4, cryoglobulins and liver function. Computed tomography and tissue biopsy are recommended. The induction therapy consists of glucocorticoids combined with rituximab or cyclophophamide. Plasma exchange is an option for life threatening pulmonary hemorrhage [3,4]. Avacopan (complement C5a receptor inhibitor) can be used to reduce glucocorticoid exposure [5]. Remission is expected within 3 to 6 months. The suggested maintenance therapy is rituximab, alternatives are azathioprine, methotrexate and mycophenolate [4]. Prevention of opportunistic infections and vaccinations are important.

GPA typically presents with non-specific symptoms (fever, malaise, weigth loss, athralgias, ENT, pulmonary and renal involvement). Due to the systemic inflammation patients are at high risk for venous thromboembolism. The treatment is an immunosuppression.

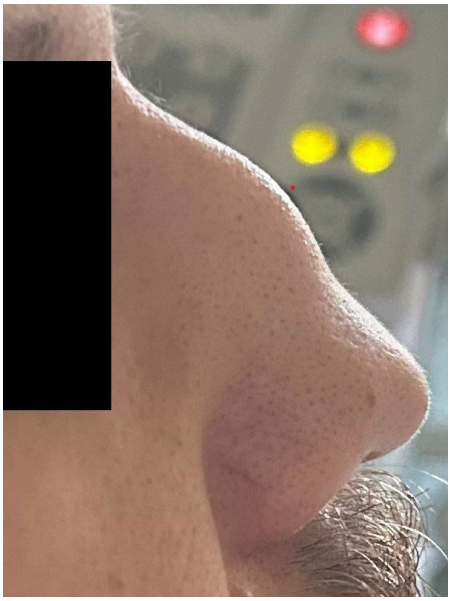

Fig 1 Saddle nose deformity

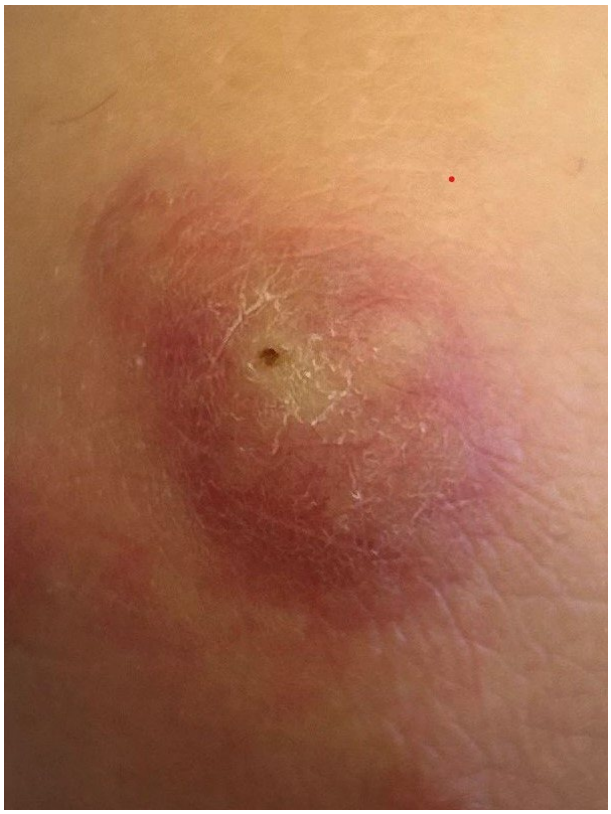

Fig 2 Erythematous papules on the elbow

P155

Anabolic steroid induced cardiomyopathy: a case report

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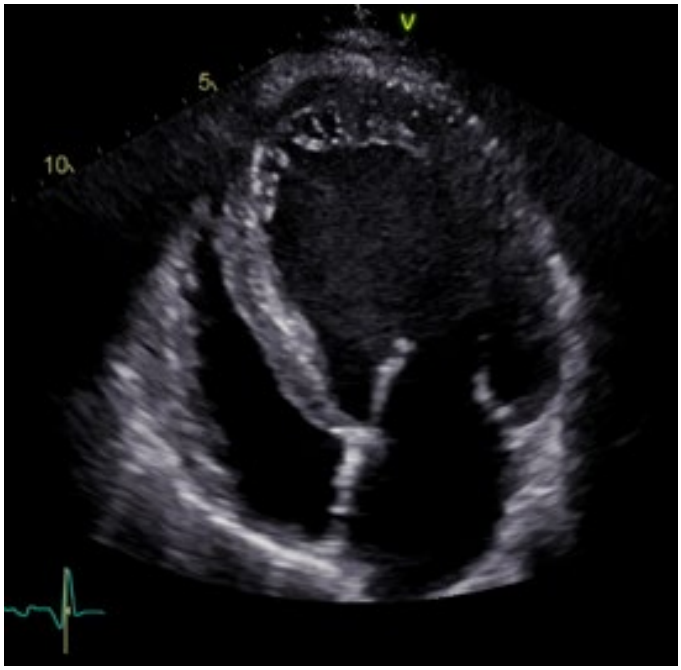
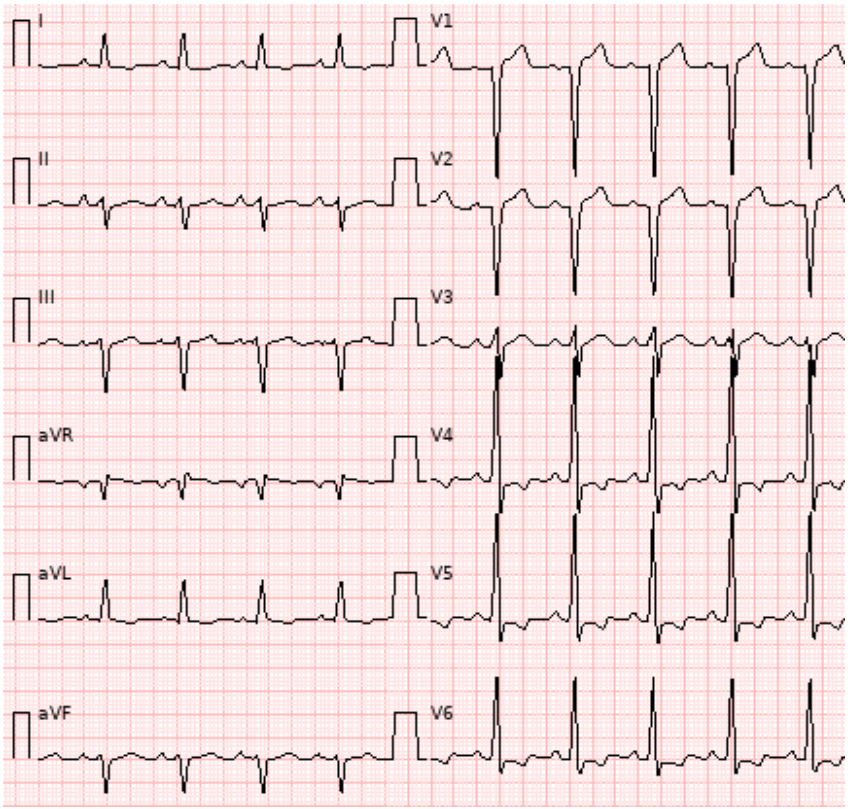
Learning objective(s): Anabolic steroid abuse can cause dilated cardiomyopathy (DCM), potentially leading to severe heart failure and sudden death. Early suspicion, along with comprehensive history taking and biochemical investigations are essential for diagnosis.

Case: A 44-year-old previous healthy construction worker reported subacute dyspnea and exercise intolerance over two weeks. Initial evaluation showed jugular vein distention and lower leg edema. A 12-lead ECG demonstrated left axis deviation, left anterior fascicular block, ST-elevation in V1/V2 and T-inversion in V4 - V6 (Figure 1). Biochemical testing displayed elevated hemoglobin (173 g/L), a Troponin-T of 32 ng/l without subsequent increase, a pro-BNP of 4303 pg/ml and a mid-range renal insufficiency (eGFR 52 ml/min/m²) with microalbuminuria. Transthoracic echocardiography demonstrated a severely dilated left ventricle with impaired ejection fraction (16%) and diffuse hypokinesia (Figure 2). Concerning risk factors, the patient reported a single episode of exogenous testosterone use over two months ten years ago. Further testing for major causes of DCM (ischemic, infectious, autoimmune, endocrinologic, depositional) could not determinate the etiology. Due to the discrepancy between the short medical history and clinical findings, as well as the unexplained polyglobulia and renal insufficiency, we suspected anabolic steroid induced cardiomyopathy, even though clinical signs of hypogonadism were lacking. The patient finally admitted to taking ten years of regular exogenous testosterone (testosterone ethanthate subcutaneous 250 mg weekly over three month per year). After commencing heart failure therapy, a rapid clinical recovery was made. Follow-up echocardiography, cardiac MRT and endocrinologic testing of the hypothalamic–pituitary–gonadal axis are pending.

Discussion: Anabolic steroids are widely misused, especially in young men and can cause reversible severe cardiomyopathy. Supraphysiological doses have been shown to induce cardiotoxicity via direct and indirect biventricular dysfunction, even though exact mechanisms of pathophysiology are poorly understood (1). Polycythemia through stimulation of EPO and reduced hepcidin concentration is an important indicator, especially when anamnestic clues lack (2). Therapy is extrapolated from management of other types of cardiomyopathies. Provided a strict steroid cessation, prognosis is good.





P156

Bad timing: fusion and pseudofusion beats in a pacemaker ECG

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Learning objective: Fusion and pseudofusion beats are pacemaker electrocardiogram (ECG) findings caused by the overlap of intrinsic cardiac activation and pacemaker stimulation.

Case: An 85-year-old male patient presented to our emergency department with recurrent episodes of epistaxis due to anticoagulation therapy. He originally was implanted with a dual-chamber pacemaker several years earlier for sick sinus syndrome (unipolar right ventricular lead and bipolar atrial lead), while the pacemaker system was downgraded to a single-chamber device (Image 1) because of permanent atrial fibrillation when battery depletion required a change of the generator (with abandoned atrial lead). The patient was hemodynamically stable and reported no other symptoms aside from epistaxis. During evaluation, a 12-lead ECG was performed, revealing QRS complexes with different morphology and infrequent pacing spikes before and within the QRS complex (Image 2). These different QRS complexes were interpreted as intrinsic (I), paced (P), fusion (F), and pseudofusion (PF) beats, therefore no sign of pacemaker dysfunction was evident. As epistaxis stopped spontaneously, no intervention was needed.

Discussion: Fusion beats are a result of combined ventricular depolarization by both intrinsic conduction and pacemaker stimulation (with a blended QRS morphology from paced and intrinsic QRS complexes, and a QRS complex width narrower than a pure paced QRS complex, depending on the relative contribution of depolarization). Pseudofusion occurs when pacemaker spikes coincide with intrinsic ventricular depolarization without contributing to ventricular electrical activation (with an equal QRS morphology as in intrinsic QRS complexes). There is no device malfunction because a substantial portion of the surface QRS complex may be inscribed before the intracardiac signal generates the required voltage to inhibit the pacemaker from pacing. These findings are attributed to an intrinsic heart rate close to the programmed lower pacing rate (LR) of the pacemaker. While harmless, increased energy consumption due to unnecessary pacing may lead to premature battery depletion. Activating rate hysteresis or reducing LR can reduce unnecessary pacing if fusion and pseudofusion is frequent. Please note: A pacing spike before an intrinsic QRS complex would indicate non-capture (device failure), a pacing spike after an intrinsic QRS complex would indicate undersensing (device failure).

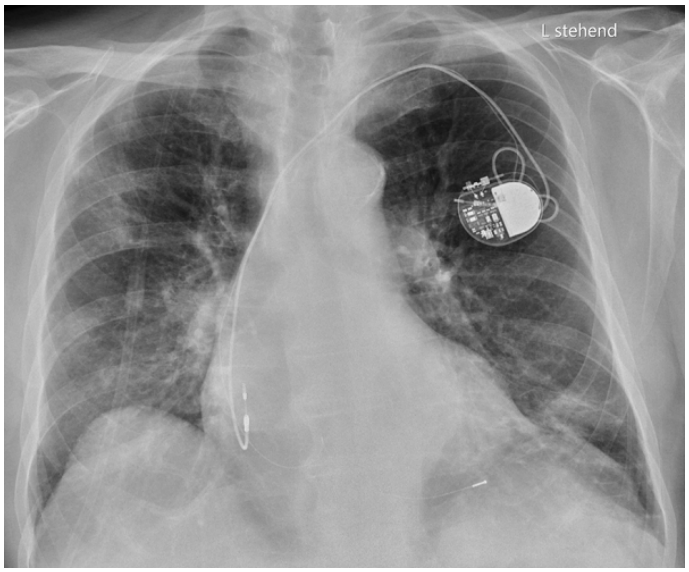

Image 1

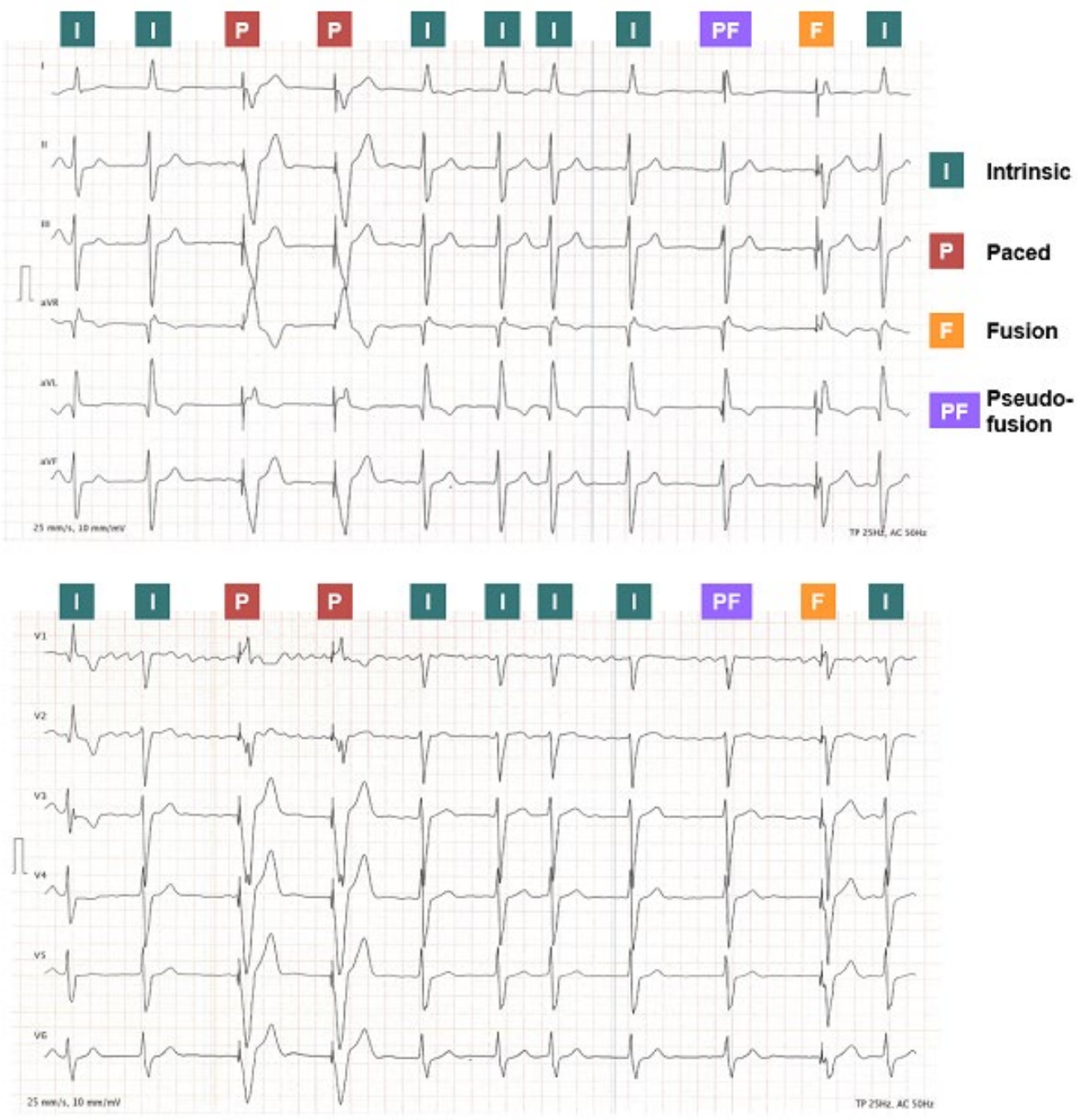

Image 2

P157

Bilateral ballismus: an unusual clinical sign with an unexpected origin

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Learning objective: The spectrum of neurologic symptoms caused by hypoglycaemia can be remarkably broad. Thus, blood glucose measurement should be part of the primary assessment in most patients with acute neurologic presentations.

Case: A 42-year-old patient presented to the emergency department with self-limited episodes of agitation and confusion that started one day before the presentation. According to his wife, the patient had an increased appetite with a cumulative weight gain of 20 kg over the past three months. His past medical history was only significant for obesity. His physical examination was unremarkable except for forceful bilateral involuntary movements of the arms. Laboratory testing revealed hypoglycaemia of 1.8 mmol/l. The symptoms improved after intravenous glucose infusion. Cerebral magnetic resonance imaging (MRI), electroencephalography, and examination of the cerebrospinal fluid were unremarkable. As Whipple's triad was fulfilled, we performed further testing of the initial blood sample, which demonstrated inappropriately high serum insulin and C-peptide levels, consistent with endogenous hyperinsulinism. Following therapy with glucose and diazoxide, the symptoms completely subsided. MRI of the pancreas and subsequent ^{68}Ga-DOTA-exendin-4 PET/CT revealed a GLP-1 positive 20 x 24 mm mass in the pancreas, consistent with insulinoma (Figure 1). The patient underwent surgical enucleation and remains free of symptoms after five months.

Discussion: Insulinoma is a rare cause of hypoglycaemia, with an incidence of four cases in one million person-years (1) . Patients with insulinoma commonly exhibit a wide array of neurologic symptoms such as confusion, personality changes, seizures, and sometimes focal neurologic deficits—often leading to misdiagnosis as stroke, epilepsy, psychiatric syndromes, or alcohol intoxication (1). Less frequently, hypoglycaemia (as well as hyperglycaemia) can cause dyskinesias such as chorea, athetosis, and ballismus, with few cases of ballismus reported in patients with insulinoma (2,3). Apart from common features such as confusion, increased appetite and weight gain, our patient experienced bilateral ballismus, which led us to perform further evaluation to exclude primary neurologic disease. Given the unremarkable findings and complete symptom resolution upon achieving euglycaemia, we determined the insulinoma to be the cause of this uncommon presentation.

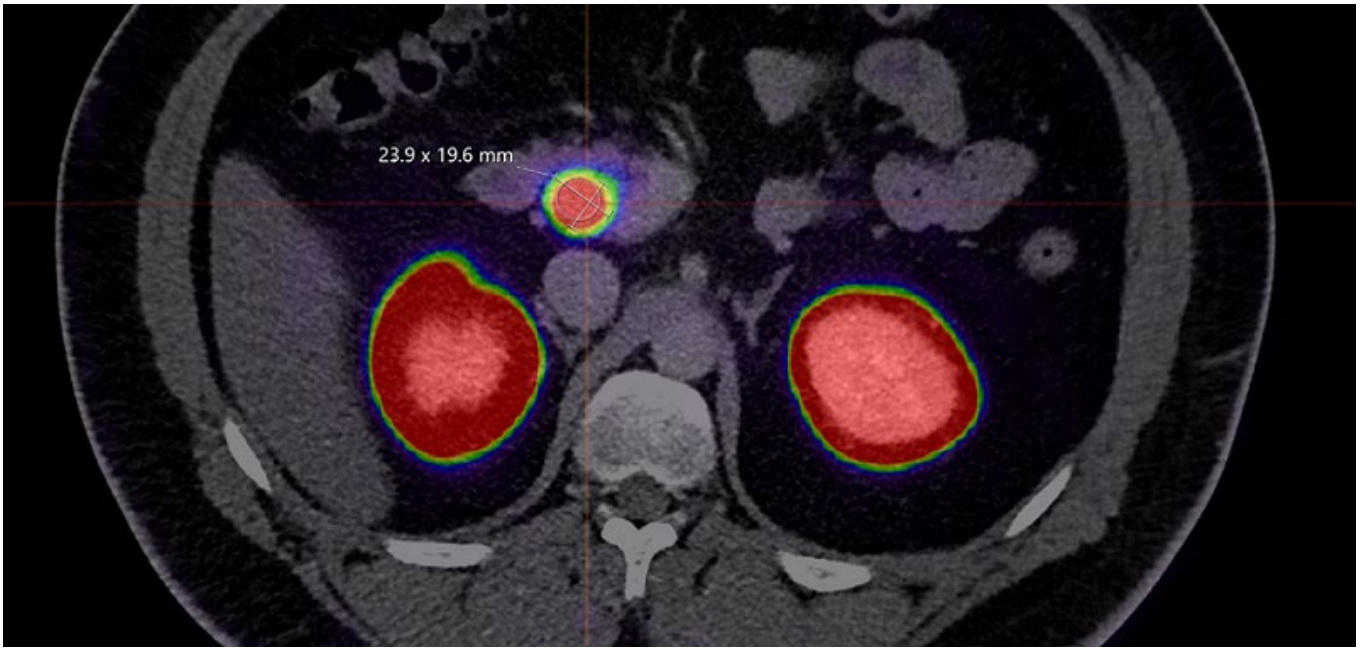

Figure 1: Insulinoma on ^{68}Ga-DOTA-exendin-4 PET/CT.

P158

Blue Velvet: A Rare Case of Drug-Induced Bluish Hyperpigmentation with Clozapine

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Learning objectives: Recognize pseudo-cyanosis as a potential side effect of antipsychotic medications; understand the mechanisms of drug-induced hyperpigmentation

Case: A 58-year-old male with chronic schizophrenia was hospitalized for an initial seizure episode. On admission, he exhibited bluish discoloration on his face, neck, nape, and dorsum of his feet. The patient reported that the hyperpigmentation had been present for approximately 15 years without any identifiable triggering event or associated symptoms during this time. Clinical examination revealed bluish discoloration of the gums in addition to the pigmentation. These signs had not been previously investigated. The patient had been on long-term treatment with clozapine and risperidone for 20 years, having initially been prescribed olanzapine, which was discontinued after one month due to lack of efficacy. He also had a history of iron absorption issues and was on long-term oral iron supplementation. Additionally, the patient was taking bisoprolol for cardiac arrhythmias induced by clozapine. A skin biopsy confirmed drug-induced hyperpigmentation, revealing brownish pigment deposits within macrophages with a strongly positive Masson-Fontana staining.

Discussion: Drug-induced hyperpigmentation is a relatively common acquired condition, often linked to antipsychotic medications, particularly first-generation agents like phenothiazines. However, atypical antipsychotics, including clozapine and risperidone, have also been implicated. The pathophysiology involves several mechanisms, such as melanin accumulation, drug deposition, synthesis of pigments like lipofuscin, and iron deposition from drug-induced blood vessel damage. While clozapine is not typically associated with bluish hyperpigmentation, its partial agonistic action at dopamine D2 receptors may influence melanocyte activity, leading to pigmentation changes. Dopamine receptors are involved in melanogenesis, and clozapine's interaction with these receptors could contribute to pigmentation alterations in the skin. This case underscores the importance of recognizing drug-induced hyperpigmentation, including its rare presentation with atypical antipsychotics. It highlights the need for clinicians to consider it when evaluating long-term antipsychotic therapy patients.

P159

Bone health in a chronic anorexia nervosa patient

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Learning objective: Eating disorders are associated with a wide spectrum of somatic complications. Among patients with anorexia nervosa, bone mineral density can be markedly reduced due to several mechanisms such as prolonged underweight, nutritional deficiencies as well as hormonal imbalances. These factors can result in reduced bone density and deterioration of the microarchitecture of the bones. Furthermore, as peak bone mass is usually achieved during adolescence, the average age of onset of anorexia in adolescence and young adulthood can result in a lower peak bone mass and a lifelong increased risk of fractures. To demonstrate this aspect of eating disorders, we present a case of a patient with a 34-year-long history of anorexia nervosa, who suffered a spontaneous talus fracture.

Case: A 50-year-old woman was admitted to our medical ward for a six-week anorexia rehabilitation program. She had been diagnosed with anorexia nervosa at the age of sixteen. Since then, she had undergone multiple in-patient treatments at an eating disorder unit as well as several medical admissions. Since the diagnosis, she never had a healthy BMI (nadir BMI 10.0 kg/m^2). At the current admission, her weight was 30.6 kg (BMI 11.0 kg/m^2). During the hospital stay, she complained of pain in her right ancle that had been present for three weeks. Physical examination showed a tender and swollen right ancle. An x-ray of the right ancle could not distinguish a clear fracture line. A subsequent MRI of the right foot demonstrated a non-dislocated subchondral stress fracture of the talus. One month after hospital discharge, an osteodensitometry performed in the outpatient clinic, revealed a diffuse osteoporosis. Her oral calcium intake had been consistently insufficient and there was no adequate long-term oral supplementation.

Discussion: An early screening for osteoporosis and multidisciplinary approach to treatment is crucial in order to prevent detrimental outcomes, especially in patients who have been underweight for several years. In our patient, the compulsion to stand or walk at all times in combination with her underweight over the course of several decades had probably contributed to the current fracture. Our report demonstrates the severe effects of chronic anorexia nervosa on the bone mineral density. Long-term nutritional support and osteoporosis prophylaxis and therapy are essential in order to prevent pathological fractures.

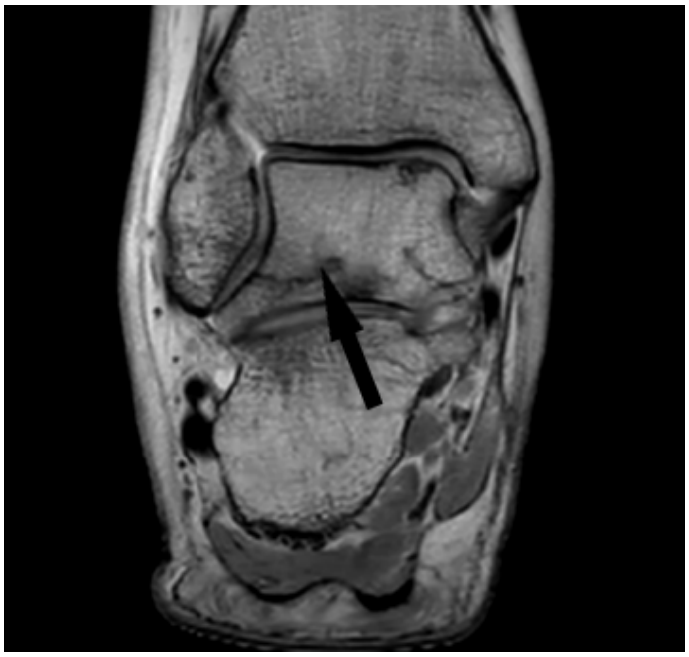

Image 1: MRI right ancle

P160

Campylobacter bacteremia under vedolizumab treatment

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Learning objectives: Although bacteremia with Campylobacter is rare, it is a serious disease with an increased mortality risk. Several predisposing underlying conditions (including cancer, liver disease, hypogammaglobulinemia and HIV-infection) have been associated with Campylobacter bacteremia (1). To our knowledge this is the first case description of a systemic Campylobacter infection under vedolizumab treatment.

Case: An 86-year-old female patient was admitted to the emergency department with dyspnea, hypoxemia and presyncope. The patient presented tachycardic (HR 104/min) and febrile (temperature 38.3 °C). Auscultation revealed a weakened and obstructive breath sound. She had normal leukocytes (Lc, 9.93 G/l) and slightly elevated C-reactive protein (CRP, 12.5 mg/l). Antibiotic therapy with piperacillin/tazobactam 4.5 g every 8 hours was started assuming an exacerbation of her chronic pulmonary disease. The day after admission the patient developed febrile diarrhea. Four days after admission, the blood cultures revealed Campylobacter jejuni. Antibiotic therapy was changed to ceftriaxone 2g once daily and two days to azithromycin 500 mg once daily; the CRP decreased from 222 mg/l to 48.9 mg/l. The antibiotic resistance testing showed susceptibility to azithromycin, but resistancy to ceftriaxon and ciprofloxacin. The patient had been receiving immunosuppressive therapy with vedolizumab (300 mg every 8 weeks i.v.) for over 6 years due to Crohn's disease.

Discussion: Vedolizumab is an immunosuppressive drug that selectively inhibits recirculation of lymphocytes to the gut tissue. It is used for the treatment of chronic inflammatory bowel diseases. Severe intestinal infections, such as Salmonella sepsis, have been observed under vedolizumab treatment. Campylobacter has the ability to attach to the gut endothelium with flagellae. We postulate that its translocation into the blood stream might be favored by immunosuppression with vedolizumab. It is therefore important to pay attention to immunosuppressed patients, especially at older age. Our case further demonstrates that Campylobacter is increasingly resistant to empiric treatments.

P161

Can liver cirrhosis be reversible through alcohol abstinence?

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Learning objective(s): Challenge the belief that alcohol-related liver cirrhosis is irreversible.

Understand that alcohol abstinence can lead to significant histological changes, even in case of cirrhosis, and what are the elements of an adapted follow-up plan for concerned patients

Case: A 41-year-old man known for excessive alcohol consumption (150 to 225 g ethanol/day) was diagnosed with hepatic cirrhosis (Child A) by liver biopsy in 2018. A fibroscan showed a stage 4 fibrosis (also classifying as cirrhosis)[1].No other comorbidities, metabolic (obesity, overweight), nor viral hepatitis were observed. The patient was in an asymptomatic phase of a compensated cirrhosis. After a detoxification, the patient maintained a regular follow-up and a strict alcohol abstinence until 2024, with and excellent clinical and biological evolution. The biannual follow-up for hepatocellular carcinoma (HCC) screening included liver ultrasound and elastometry, and showed after 3 years abstinence a liver with normal morphology and echogenicity, with fibroscan values within the normal range at 4.9 kPa. A new liver biopsy documented the potential reversibility of cirrhosis: histological report showed a significant regression of the fibrosis, with only fine interrupted fibrous septa, and a disappearance of steatosis (Figure 1). Given the reversibility of the cirrhosis, HCC screenings were gradually stopped after discussion with gastroenterologists.

Discussion and conclusion: Prolonged alcohol abstinence led to significant regression of the fibrosis, with a positive impact on the patient's prognosis, stage 4 fibrosis being associated strongly with future liver-associated morbidity and mortality[1]. Furthermore, HCC screenings could be stopped, thus reducing follow-up burden and costs. Nevertheless, the reduction in the risk of HCC occurrence in cases of fibrosis regression is not clearly established, and the continuation of ultrasound follow-up should therefore be discussed on a case-by-case basis with gastroenterologists. This not well-known concept of cirrhosis reversibility brings renewed hope to patients and healthcare providers. The reversibility of cirrhosis through alcohol abstinence offers a motivational opportunity for initiating and maintaining long-term alcohol abstinence for patients suffering from alcohol use disorders.

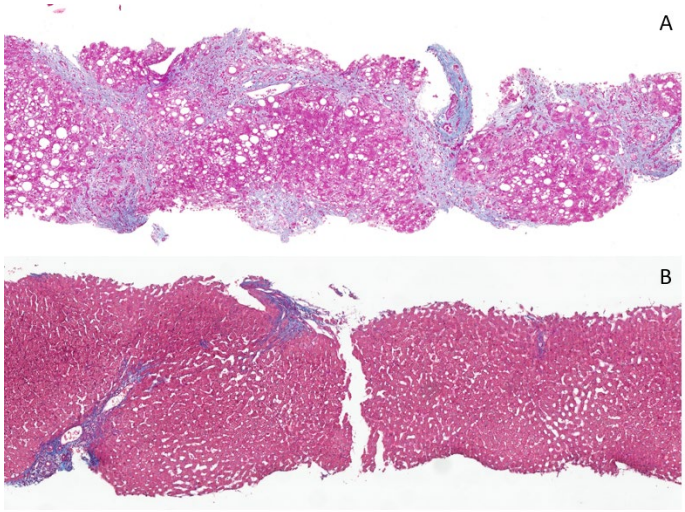

Figure 1,
A. Liver biopsy in 2018, Masson's trichrome stain, grossing x65 : there is an extensive, remodelling fibrosis, with a significant perisinusoidal fibrosis component compatible with an ethylic origin. B. Liver biopsy in 2022, Masson's Trichrome stain, grossing x60 : we can see a significant regression of the fibrosis, with currently only fine interrupted fibrous septa. There is also a disappearance of steatosis which was present in 2018.

P162

Case report: Angioedema in Systemic Lupus Erythematosus: The Role of Anti-C1-Esterase Inhibitor Antibodies in a Rare Manifestation

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Learning objectives: Angioedema in systemic lupus erythematosus (SLE) is rare and can have life-threatening implications. Anti-C1-esterase inhibitor (C1-INH) autoantibodies play a role in SLE-related angioedema. Early recognition and targeted management of this complication is vital.

Case: A 51-year-old female presented with a 4-month history of diarrhea, fatigue, anorexia, weight and hair loss, joint pain and edema. Clinical examination showed hypertension, tachycardia, polyserositis, anemia and acute kidney injury with nephrotic syndrome. After 3 days, the patient developed rapid upper airway angioedema despite adrenalin, steroids and clemastin. During admittion to the ICU for intubation she developed hypoxic cardiac arrest requiring resuscitation and intubation. With elevated ANA, anti-dsDNA, anti-histone and anti-chromatin antibodies, along with hypocomplementemia (C3, C4) and clinical features, we diagnosed SLE. Kidney biopsy confirmed diffuse proliferative lupus nephritis (ISN/RPS Class IV). Despite plasmapheresis, steroids, cyclophosphamide and humane C1-INH (Berinert®) the patient was twice reintubated and tracheostomied due to recurrent angioedema. Anti-C1-INH autoantibodies were 5x upper limit and monoclonal paraprotein was excluded, so acquired angioedema was confirmed as the cause. Treatment included human C1-INH prophylaxis bi-weekly, steroids, hydroxychloroquine, rituximab then belimumab, cyclophosphamide and plasmapheresis. Due to neutropenia and infection, we switched cyclophosphamide to mycophenolat mofetil. The patient improved, renal function partially recovered and angioedema did not recur. Despite ongoing proteinuria, SLE activity has decreased. The patient carries a bradykinin antagonist for emergencies.

Discussion: Acquired angioedema mainly occurs in lymphoproliferative syndromes or monoclonal gammopathy and is associated with anti C1-INH antibodies in 50% of cases. It is a rare, life threatening SLE manifestation, linked to acquired C1-INH deficiency. Unique here is the association with anti-C1-INH autoantibodies, rarely documented in SLE. While hypocomplementemia is common, its association with acquired C1-INH deficiency is poorly understood. The role of anti-C1-INH antibodies in angioedema is unclear, requiring further research into their clinical significance. Prompt recognition and management were crucial for the favorable outcome. This case highlights the importance of vigilance for rare and life-threatening SLE complications.

P163

Case Report: Legionella pneumophila-associated Guillain-Barré Syndrome

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Learning objectives:

- Raise awareness for the occurrence of Guillain-Barré Syndrome (GBS) after atypical pathogenic agents (i.e. Legionella pneumophilia)
- Further understand the pathomechanism of GBS

Case: An 80-year-old female patient was hospitalized with community-acquired pneumonia (CAP) that tested positive for Legionella pneumophila urinary antigen. She was treated with Levofloxacin and transferred to rehabilitation. A stool multiplex PCR analysis for diarrhoea was negative for all tested agents, including Campylobacter jejuni. In the following 5 days, progressive weakness in the lower extremities was observed. A cranial CT scan showed no relevant pathologies. The patient was admitted to the intensive care unit (ICU) due to progressive breathing difficulty. Upon admission, the patient exhibited areflexia, allodynia in all extremities, tetraplegia but unremarkable cranial nerves. A neurological assessment was performed and electromyoneurography showed an F-wave failure in all tested nerves, suggesting GBS. Cerebrospinal fluid was collected for analysis. Based on neurological examination and clinical presentation, the patient was administered immunoglobulins and intubated due to respiratory failure. Tracheal secretion obtained after intubation showed Klebsiella pneumoniae/variicola. Cerebrospinal fluid analysis revealed an anti-ganglioside GD1a-IgG/IgM quotient of 236% (reference <50%), confirming the diagnosis of GBS. She showed only minimal (finger movement) improvement in motor skills. One month later, the patient was transferred to a long-term neurological rehabilitation. A 3-month follow-up revealed recovery of upper extremity motor skills and ongoing recovery in the lower extremities.

Discussion: GBS is an acute neuromuscular weakness often preceded by an acute infection, typically caused by C. jejuni, Epstein-Barr virus or Mycoplasma pneumoniae. In our literature review, only few cases of GBS [1-5] were found to be associated with L. pneumophila. Here we present a case of severe GBS following an L. pneumophila CAP. Although cases are rare [1,2,4] and the patient was adequately treated, she developed the polyradiculoneuropathy two weeks after the infection. No other potential pathogen, including C. jejuni was identified. An acute GBS should be considered even in the absence of typical etiological spectrum of infectious agents.

P164

Cave Canem: A Unique Case of Hemolytic Uremic Syndrome Caused by Capnocytophaga canimorsus Sepsis

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Learning objectives: Distinguish between Hemolytic Uremic Syndrome (HUS) and Thrombotic Thrombocytopenic Purpura (TTP); highlight the significance of detailed patient history, including animal exposure.

Case: A 62-year-old man with ischemic heart disease presented to the ED with fever, left index finger swelling, and gastrointestinal symptoms. Initially, his GP suspected gout and prescribed colchicine 0.5 mg twice daily for 48 hours. However, the patient developed diarrhea and vomiting, leading to his admission the following day. He exhibited signs of sepsis. Laboratory findings showed significant systemic inflammation with a C-reactive protein of 300 mg/L, stage 1 renal insufficiency according to KDIGO criteria, and mild thrombocytopenia. Chest X-ray and abdominal CT were unremarkable. A gastrointestinal infection was suspected, and ceftriaxone and metronidazole were started. His condition deteriorated, progressing to septic shock. Laboratory results showed anemia (Hb 80 g/L), elevated bilirubin (54 µmol/L), LDH (1283 U/L), and low haptoglobin (189 mg/L), suggesting hemolytic anemia. Platelet count was 8 G/L. Schistocytes were found on the blood smear, and a diagnosis of thrombotic microangiopathy (TMA) was made. The patient was treated with Aplacizumab and plasmapheresis. The antibiotic regimen was broadened to piperacillin/tazobactam. ADAMTS13 activity was 22% (N>20%), leading to the diagnosis of HUS. Shiga toxin was negative. Plasmapheresis and Aplacizumab were discontinued. Renal function worsened to anuria, and hemodialysis was initiated. Blood cultures identified Capnocytophaga canimorsus, which was sensitive to amoxicillin-clavulanic acid. Treatment was adjusted, and the patient gradually improved. Post-hoc, a detailed history revealed the patient had been licked by his dog on the injured index finger a week prior, pinpointing the source of infection.

Discussion: Capnocytophaga canimorsus is a slow-growing gram-negative bacterium found in the oral flora of dogs and cats. Infections occur through bites or contact with saliva.(1) Symptoms are often nonspecific, and immunocompromised patients are at higher risk of sepsis.(2) Only 12 cases of TMA have been described in the literature, mostly HUS. This case is the 2nd reported of severe HUS due to Capnocytophaga canimorsus.(3) Although immunocompetent, we suspect that in our patient, colchicine—a mitotic poison with immunomodulatory effects—could have triggered the onset of sepsis and ultimately HUS.

P165

Cold Case Solved: Cold Agglutinin Disease after Mycoplasma pneumoniae Infection

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Learning objective: A rare cause for acute anemia is hemolysis. Hemolysis should be suspected in patients presenting with anemia, elevated bilirubin, low haptoglobin, and elevated LDH. Further investigations, including a detailed patient history and a direct antiglobulin test (DAT), are essential to differentiate between the various causes of hemolysis, particularly to identify autoimmune etiologies. Cold agglutinin disease can be triggered by Mycoplasma pneumoniae.

Case: A 43-year-old man presented to the emergency department with painless jaundice, fatigue, and exertional intolerance

following a respiratory infection 10 days before, which included a productive cough and mild fever. Physical examination revealed mottling of the hands and knees, jaundice, and tenderness in the upper right quadrant of the abdomen with a palpable liver margin 2 cm below the right costal margin. Initial laboratory results showed anemia (hemoglobin 90 g/L) and reticulocytosis (65 G/L). Biochemical analyses indicated significant hemolysis, with undetectable LDH due to sample hemolysis, a haptoglobin level of <0.10 g/L, and a total bilirubin concentration of 128 µmol/L. The DAT was positive (4/4), suggesting autoimmune hemolysis. Further analysis showed positivity for complement C3d and IgM, confirming cold agglutinin disease (CAD). The patient also experienced exertional dyspnea and required supplemental oxygen. A CT scan of the thorax revealed bronchiolitic infiltrates, and PCR from a nasopharyngeal swab tested positive for Mycoplasma pneumoniae. This was identified as the trigger for secondary CAD. The patient received fluids, blood transfusions, and corticosteroid therapy (1 mg/kg prednisolone), along with doxycycline for M. pneumoniae. By discharge, his hemoglobin was stable, and hemolysis parameters had nearly normalized.

Discussion: This case highlights the rare presentation of M. pneumoniae infection triggering CAD, a subtype of autoimmune hemolytic anemia (AIHA). In the context of acute hemolysis, patients present with symptoms due to the destruction of red blood cells, including fatigue and jaundice. Laboratory findings include reticulocytosis, hyperbilirubinemia, elevated LDH, and a positive DAT for anti-C3, usually with a negative result for anti-IgG. It is important to distinguish it from other causes of hemolysis. M. pneumoniae infections are linked to the production of cold agglutinin antibodies in 50-60% of cases, making it a significant cause of secondary CAD.

P166

Culture negative mitral valve endocarditis with Tropheryma whipplei

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Learning objective: Tropheryma whipplei may be the cause of culture-negative endocarditis as the sole manifestation of an acute infection.

Case: An 85-year-old female patient presented to the emergency department with a 2-day history of nausea, chills, inappetence, and intermittent left-sided chest pain. She had been feeling well prior to this episode and denied any previous significant arthralgia, gastrointestinal symptoms or weight loss. Her medical history was positive for hypertension, diabetes mellitus and a provoked pulmonary embolism. Examination revealed a heart murmur, abdominal tenderness, and high inflammatory markers. A CT scan showed splenic infarction and signs of pneumonia, with atelectasis as a differential diagnosis. Blood cultures were obtained and a course of co-amoxicillin was started. Due to the murmur and the splenic infarction, TTE and TEE (Figure 1) was performed, revealing vegetation on the anterior mitral leaflet. With negative initial blood cultures, a search was conducted for causes of culture-negative endocarditis.

PCR of a blood sample was positive for T. whipplei with a high cT value of 35.22. The sample was taken on the third day of antibiotic therapy, which may explain the high cT value. PCR tests from stool and small bowel biopsies were also positive. However, intestinal histology, the gold standard for diagnosing Whipple's disease, showed no invasive behavior of T. whipplei. Based on the detection of T. whipplei in three different sites and the lack of any other explanation, we identified T. whipplei as the cause of endocarditis. The antibiotic regimen was switched to ceftriaxone for three weeks, followed by oral cotrimoxazole for at least one year. The patient responded well to the treatment and after 14 days, the patient was discharged to a nursing home. Follow-up with TTE and PCR testing will guide the therapy duration.

Discussion: T. whipplei infections are rare and usually associated with a slowly progressive disease with gastrointestinal symptoms, arthralgia and weight loss. This case highlights an atypical presentation with a short history and isolated endocarditis. Therefore, T. whipplei should still be considered as a possible cause of culture-negative endocarditis even in the absence of classic symptoms.

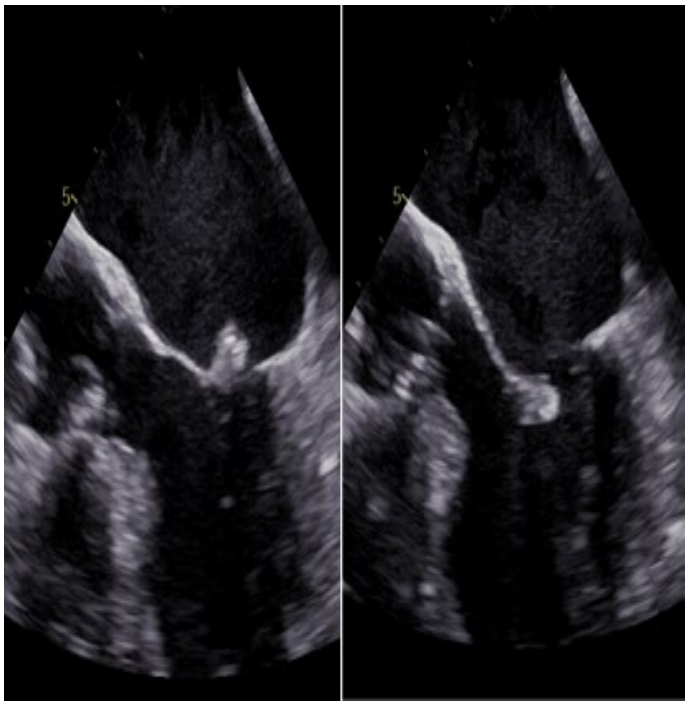

Figure 1 TEE: Vegetation on the anterior mitral leaflet

P167

Diagnosing leptospirosis in a complex clinical presentation

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Learning objectives:

- Recognise the main clinical and epidemiological features of leptospirosis.
- Understand the diagnostic challenges of febrile illnesses with an unclear focus and the importance of an accurate occupational and environmental history.

Case: A 53-year-old man presented to the emergency department with a five-day history of weakness, headache, myalgias, shivering and fever. His past medical history was unremarkable. His social history revealed that he lived on a farm where he had recently buried a dead chicken. He reported no travel or sexual risk factors and no environmental exposures such as tick bites.

On presentation vital signs were stable. Physical examination and chest x-ray were unremarkable. Laboratory findings included mild leukocytosis, elevated C-reactive protein (340.8 mg/L), mild thrombocytopenia, elevated transaminases and creatinine, and hyponatremia. A computed tomography scan performed for recurrent fever, abdominal pain and diarrhoea showed no intra-abdominal infection. Blood and stool cultures were negative. Intravenous co-amoxicillin as an empirical treatment was started. Due to the fact, that the patient had contact with animals serological test for leptospirosis were ordered.

Table 1: Serology revealed elevated IgM titers for Leptospira interrogans (>100 U/mL), suspecting acute LS.			
Leptospira interrogans IgG	6	U/ml	norm: <10U/ml
Leptospira interrogans IgM	>100	U/ml	norm: <15U/ml

Treatment was changed to Doxycycline 200mg daily. The patient showed rapid clinical and laboratory improvement and was discharded on the 8th day.

Discussion: Leptospirosis, caused by the gram-negative spirochete Leptospira interrogans, is a widespread zoonosis that occurs mainly in tropical regions or where hygiene standards are poor. Transmission to humans occurs through urine-contaminated soil and water or direct contact with infected animals, typically rodents or, less commonly, livestock. LS typically presents in two forms:

1. Anicteric Leptospirosis, often mild and unspecific symptoms, self-limiting.

2. Icteric Leptospirosis (Weil's disease), a severe multisystem disease with jaundice, renal failure and pulmonary haemorrhage, mortality rate of 5-10%.

Our patient suffered from the anicteric form. The route of the infection was his contact with a dead chicken on his farm. Early antibiotic therapy with doxycycline, penicillin or cephalosporin is essential in severe cases to prevent complications and in mild cases to reduce the spread of contaminated urine.

P168

EBV-Positive Extranodal NK/T-Cell Lymphoma: A Rare and Aggressive Disease – A Case Report

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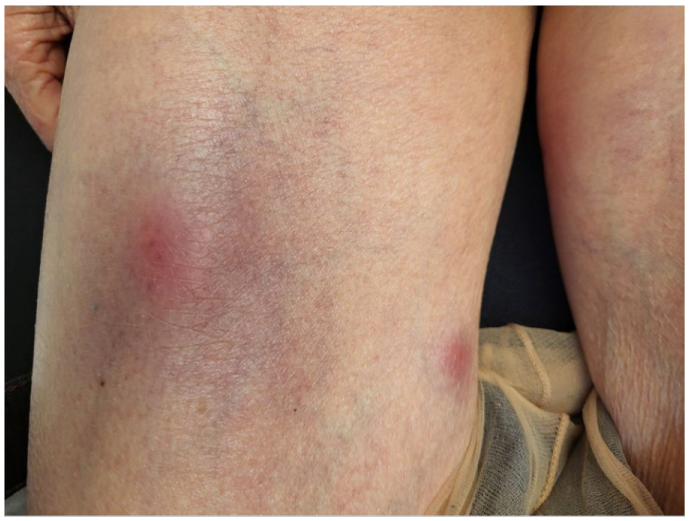
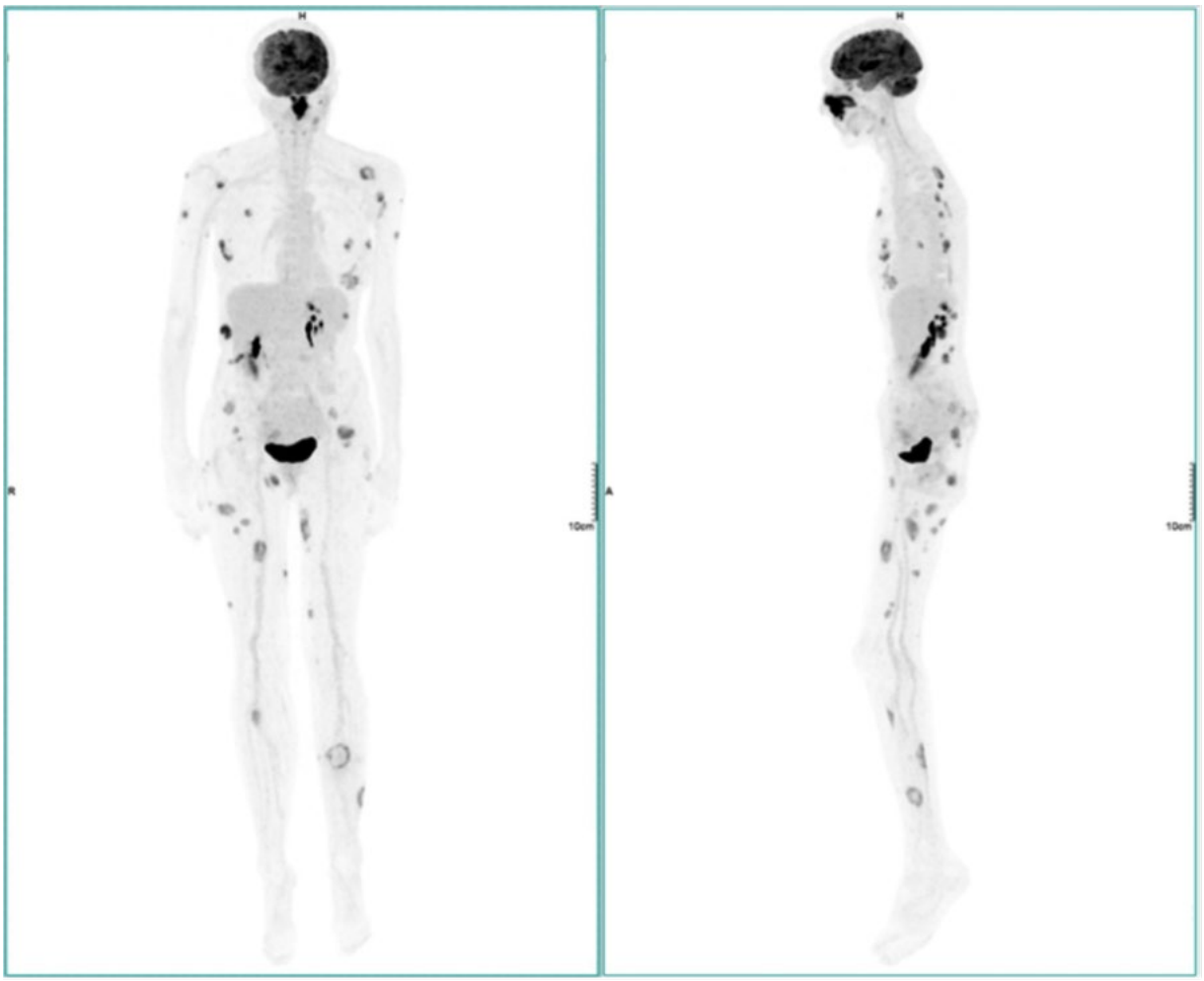
Learning objectives: To understand the clinical presentation and diagnostic approach to rare extranodal natural killer/T-cell lymphoma (ENKTL) and to emphasize the aggressive nature and the importance of prompt diagnosis and staging.

Case: A 75-year-old female presented with a 4-week history of painful, indurated, livid erythematous nodules across the body. The general practitioner referred her to the emergency department for biopsy because of progressive symptoms. Systemic symptoms - additional to the skin lesions - included recurrent fever, fatigue, night sweats, and a 4 kg unintentional weight loss, with a recorded weight of 36 kg. The patient had a family history of BRCA-positive breast cancer but no personal medical history. On examination, multiple indurated papules were observed (Picture 1). Laboratory findings revealed elevated LDH (509 U/L) without other significant abnormalities. PET/CT imaging showed extensive subcutaneous soft tissue infiltrates and a metabolically active nasal lesion without nodal or visceral involvement (Picture 2). Histological analysis of a skin biopsy showed angioinvasive and angiodestructive infiltrates of atypical lymphoid cells. Immunohistochemistry confirmed a γ/δ-T cell phenotype, and EBER in situ hybridization was positive for EBV. The final diagnosis was EBV-positive ENKTL.

Discussion: ENKTL is rare outside East Asia and Central/South America, accounting for 0.2–0.4% of non-Hodgkin lymphomas in the United States and Europe (1). Most patients present with localized disease and symptoms such as nasal obstruction (2). Advanced-stage disease may involve the skin, gastrointestinal tract, lymph nodes, and other organs (3). Our patient presented with stage IV disease, involving the skin. It is associated with a poor prognosis with median survival duration of 10 months. The proposed treatment in stage IV is aggressive chemotherapy (asparaginase, methotrexate, isosfamide, dexamethasone, etoposide) in young patients. In elderly patients, reduced protocols are used with cisplatin/oxaliplatin and gemcitabine and asparaginase. In our case a therapy with oxaliplatin, gemcitabine and asparaginase was chosen. This case underscores the need for prompt diagnosis and treatment in aggressive diseases such as EBV-positive ENKTL. The clinical presentation, the histopathological and immunophenotypic evaluation and staging with PET CT is essential to differentiate and stage the underlining lymphoma and plan the correct therapy.





P169

Fett embolism syndrome with a fatal cardiogenic shock post hip surgery: a case report

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Learning objectives:

- Highlight the significance of fat embolism syndrome (FES) as a rare but life-threatening complication associated with orthopedic trauma and surgical procedures.
- Recognize the diagnostic and therapeutic challenges in managing FES-induced cardiogenic shock and multiorgan failure.

Case presentation: A 77-year-old woman sustained a single femoral neck fracture after a car accident. During minimally invasive hip arthroplasty at the moment of cement application, she developed sudden hypotension, bradycardia, and hypoxia. Transthoracic echocardiography (TTE) revealed acute right heart failure, suggesting pulmonary embolism (PE) or FES (Fig.1 A/B). Thrombolysis was initiated for suspected PE, and she was transferred to the ICU on mechanical ventilation and vasopressors including levosimendan. A subsequent CT scan showed no evidence of PE but revealed signs of pulmonary hypertension and diffuse bilateral infiltrates consistent with acute respiratory distress syndrome (ARDS). Despite aggressive treatment, she progressed to multiorgan failure, including renal and respiratory failure, and died 8 days after presentation.

Discussion: FES is a rare but severe complication with high mortality despite prompt intervention, often mimicking PE or ARDS [1, 4]. Its diagnosis is challenging as the current diagnostic tools are limited, highlighting the need for early biomarkers. In our case, TEE helped identify right ventricular dysfunction, but definitive FES diagnosis was only confirmed post-mortem via autopsy, revealing multiple fat emboli in the central and peripheral pulmonary arteries (Fig. 2), in the coronary arteries, multiple infarctions in the spleen and in the brain with microbleeds. Management of FES-induced shock and organ failure remains challenging, as seen in this case, where thrombolysis, vasopressors, and dialysis failed to prevent deterioration [2]. The systemic inflammatory response and vascular obstruction in FES complicate treatment [4]. Improved early detection and innovative therapies are urgently needed [3].

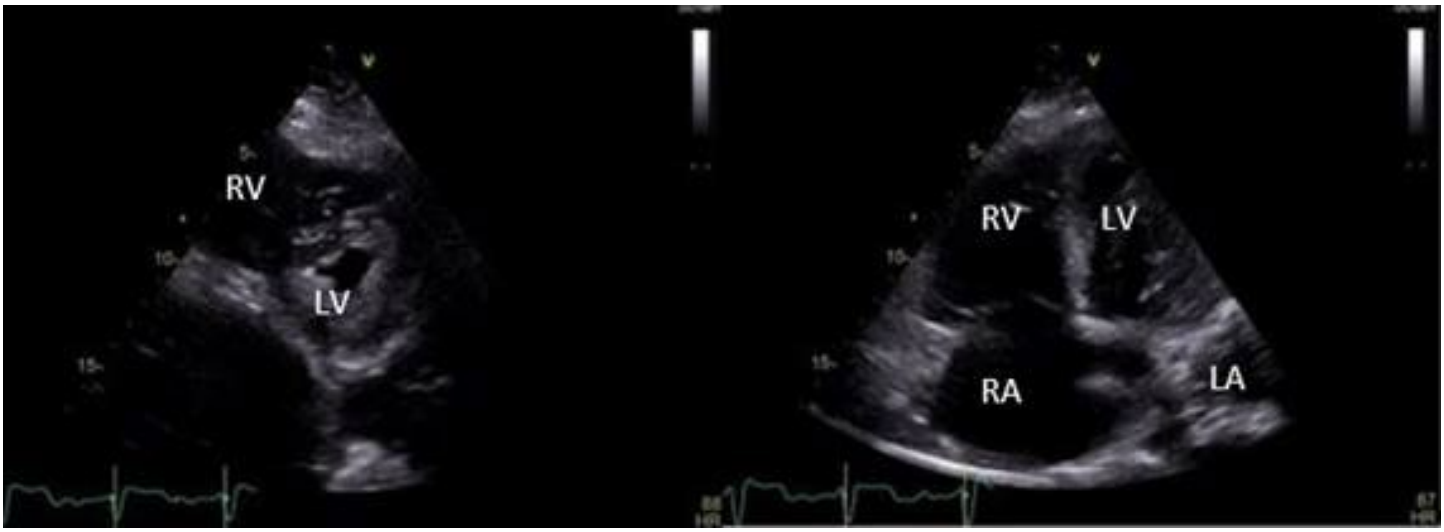

Figure 1A: D-shaping of the right ventricle (arrow) in transthoracic echocardiography.
Figure 1B: Acute right heart strain with dilated right ventricle and atrium (arrows) on transthoracic echocardiography.

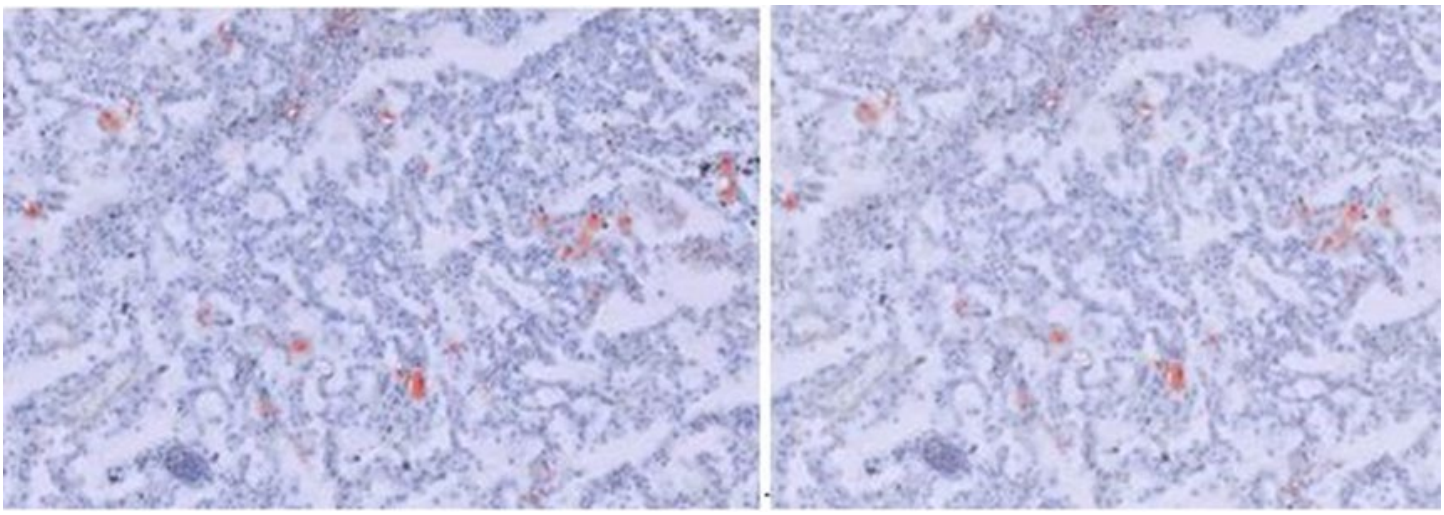

Figure 2: In orange: Fat droplets in the peripheral pulmonary arteries → Fat embolism

P170

Fever, rash and eschar after trekking in Nepal: a case of Scrub Typhus in a returning traveller

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Learning objective: To recognize, diagnose and treat a case of scrub typhus in returning travellers with unexplained fever, skin rash and eschar in the context of relevant epidemiologic exposure.

Case: A 60-year-old woman presented with fever (>40°C), productive cough, and myalgias of four-day duration. She had returned the day before from a three-week stay in southern Nepal, including a multi-day hike in rural areas. She was initially prescribed a six-day course of amoxicillin/clavulanic acid for suspected pneumonia. After three days a maculo-papular rash appeared and after nine days she was hospitalized due to persistent fever and hypotension. Laboratory findings showed mildly elevated transaminases, thrombocytopenia and a mild hemolytic anemia. Oxygen saturation and chest X-ray were normal. She was again prescribed amoxicillin/clavulanic acid and azithromycin for coverage of atypical pneumonia. After admission, skin examination revealed a maculopapular rash sparing the hands, face, and soles, petechiae on both flanks, and an eschar on the chest. On ultrasound moderate splenomegaly was noted. The clinical picture raised a strong suspicion of scrub typhus. Treatment was empirically switched to doxycycline, leading to rapid defervescence and clinical improvement. After the patient was discharged, Orientia tsutsugamushi-specific IgM and IgG returned positive and after four weeks IgG had increased four-fold. Notably, initial serological work-up showed positive Dengue virus IgM. These were retrospectively deemed false positive due to immune activation, supported by a titer decline after four weeks and absence of IgG seroconversion.

Discussion: Scrub typhus is a mite-transmitted infection caused by Orientia tsutsugamushi which is endemic in rural Asia and rarely affect travellers. It typically presents with fever, headache and myalgias, and can progress to organ damage and death if not promptly treated. Rash and eschar are important clues to the diagnosis, which can be supported by positive Orientia-specific IgM and, retrospectively, confirmed by a four-fold increase in Orientia-specific IgG. Orientia-specific PCR is not available in Switzerland. To prevent complications,

treatment should be initiated empirically without waiting for laboratory confirmation. Doxycycline or azithromycin are effective for mild cases, while doxycycline i.v. combined with azithromycin is recommended for severe ones.

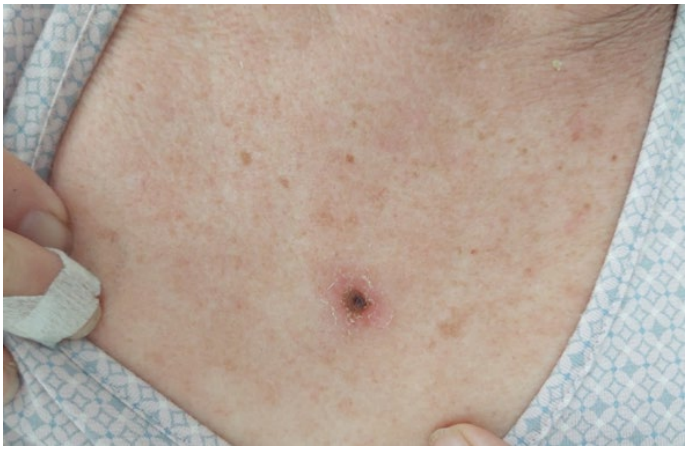

Fig. 1: Eschar lesion

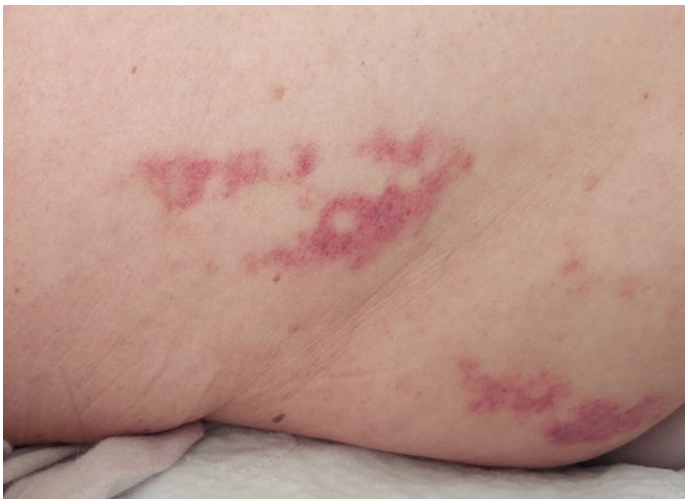

Fig. 2: Petechiae on the right flank.

P171

From Gum to Gut: How Dental Infection Triggered Life-Threatening Liver Abscesses

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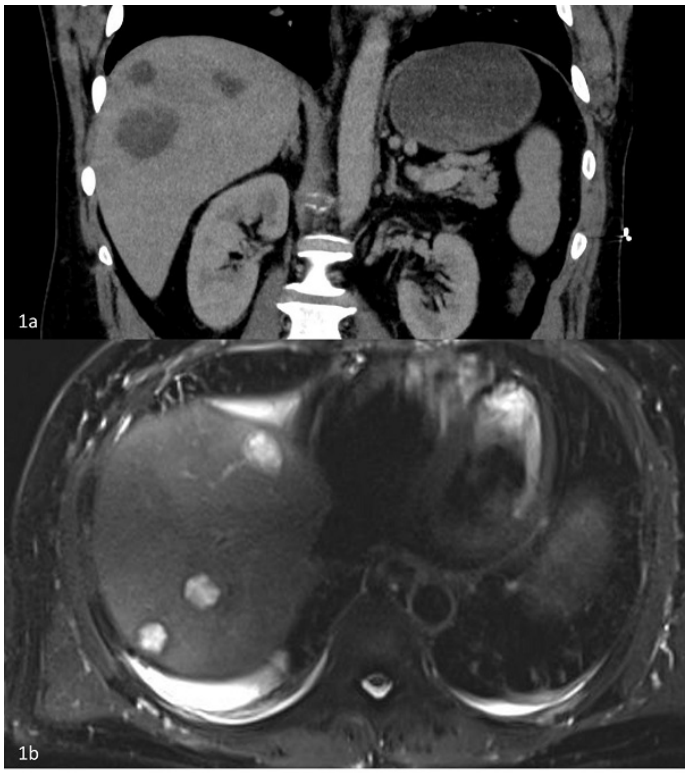
Learning objective:

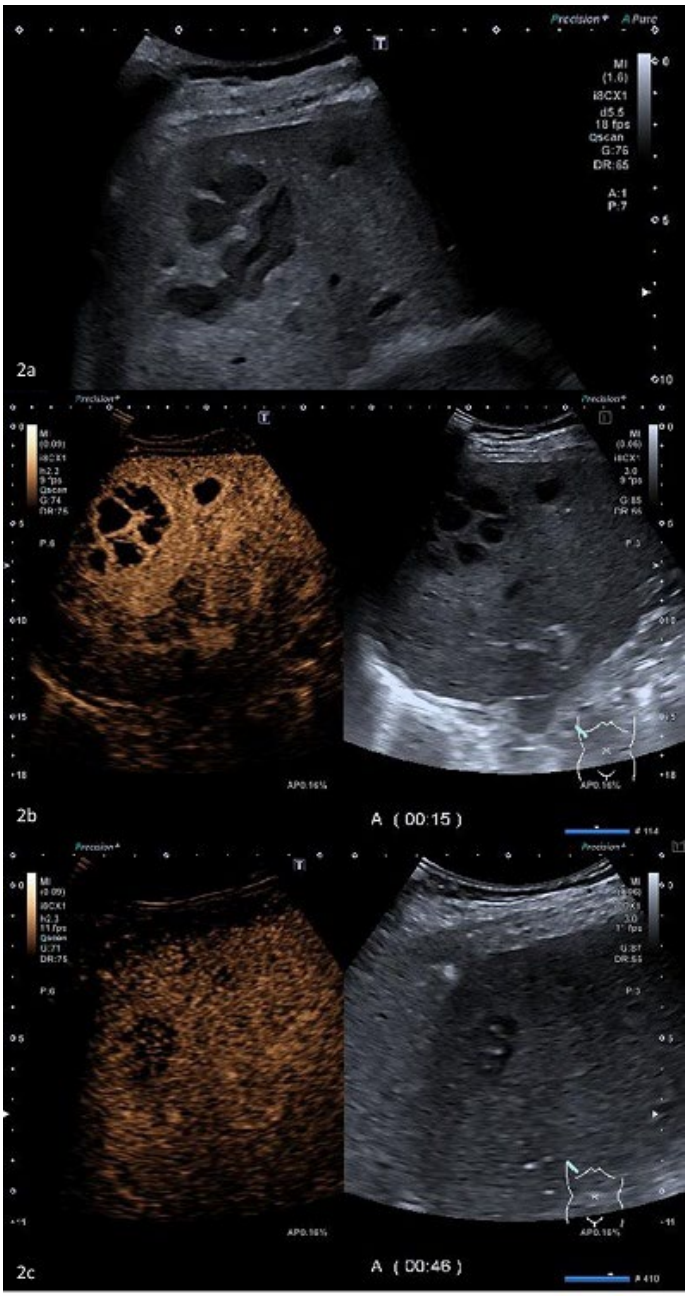
1. Highlighting the clinical spectrum of infections caused by Fusobacterium nucleatum, particularly as a rare cause of liver abscesses and sepsis
2. Understanding possible entry points, especially in severe periodontitis
3. Prevention and follow-up through identification of dental infections

Case: A 57-year-old patient presented with a two-day history of fever of unknown origin and a mild cough without abdominal complaints. A pneumonia was suspected and empirical antibiotics with Amoxicillin-Clavulanate and Clarithromycin were initiated. Despite treatment, the patient's respiratory condition deteriorated, necessitating transfer to the intensive care unit. Thoracic and abdominal computed tomography (CT) revealed multiple hypodense liver lesions. These were identified as liver abscesses using magnetic resonance imaging (figure 1) and contrast-enhanced ultrasound (CEUS; figure 2). Blood cultures revealed gram-negative rods identified as F. nucleatum. Therapy was resistance-guided adjusted to ceftriaxone and metronidazole. A severe, painless periodontitis was identified as the port of entry, confirmed through CT of the face and neck. After showing clinical improvement, the patient was discharged in good general condition, and therapy was switched to oral metronidazole. Regular follow-up with CEUS and infectious disease monitoring was scheduled until complete resolution three months later.

Discussion: F. nucleatum is an anaerobic, gram-negative bacterium and part of the normal oral flora but can, in rare cases, cause severe systemic infections. These infections are often associated with abscess formation, as seen in this case. Periodontitis served as the port of entry, and poor hygiene is a risk factor. A comprehensive dental assessment is an important part in any patient with an unclear infection. Additionally, growing evidence links certain F. nucleatum clades to colorectal cancer in terms of an "oncobacterium". In this case, no evidence of colorectal cancer was found following colonoscopy and histological examination. The case illustrates the value of interdisciplinary diagnostics, systematic evaluation of dental health and regular dental hygiene to prevent systemic infections.



1a) CT abdomen with multiple hypodense lesions
1b) complemented by MRCP



2a) Initial grayscale sonographic findings of the inhomogenous liver lesion
2b) CEUS ultrasound confirmation of liver abscesses
2c) Follow-up CEUS ultrasound after 2 months

P172

Hemophagocytic lymphohistiocytosis in a patient with Adult-onset Still's disease

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Learning objectives: Hemophagocytic lymphohistiocytosis (HLH) is a life-threatening hyperinflammatory state characterized by excessive cytokine release and hemophagocytosis. Sporadic HLH occurs in association with diverse triggers, such as infections, rheumatic diseases and hematologic malignancies. Treatment involves immunosuppression, along with addressing the underlying cause [1].

Case and discussion: A 39-year-old female patient of Eritrean descent presented with a 2-week history of high fevers, arthralgia and myalgia. On physical examination, temperature was 41.1°C and there was mild swelling and tenderness of the right wrist. Laboratory examinations revealed an inflammatory state with hyperferritinemia, hepatocellular damage and negative blood cultures. Imaging showed hepatosplenomegaly. Arthrocentesis of the right wrist revealed an inflammatory effusion with 89% polymorphonuclear cells. Adult-onset Still's disease (AoSD) was suspected and treatment with anti-IL-1 was initiated. However, inflammatory markers and transaminases (peak serum concentrations: ferritin 318'751 ug/L, C-reactive protein 444 mg/L, aspartate aminotransferase 2929 U/L) continued to rise and the patient developed hyperfibrinolysis (fibrinogen <0.4 g/L, D-dimers 72.4 mg/L) as well as pancytopenia. The

histological examination of a cervical lymph node confirmed hemophagocytosis (Figure 1) and ruled out lymphoma. We diagnosed HLH (macrophage activation syndrome) according to the HLH-2004 [2] criteria and started treatment with high-dose corticosteroids and etoposide, which finally resulted in the resolution of her high fevers and diminishing inflammatory markers. Further diagnostics, including a thorough microbiological workup for bacterial, mycobacterial, viral, and parasitic infections, along with additional tests like bone marrow evaluation and autoantibody testing, were negative for infectious, neoplastic, or autoimmune diseases. However, the patient fulfilled the diagnostic Yamaguchi criteria for AoSD [3] and was diagnosed with HLH secondary to AoSD. Treatment with anti-IL-1, etoposide and corticosteroids was continued. Three months after discharge, the patient is well and there is no evidence of local or systemic inflammation.

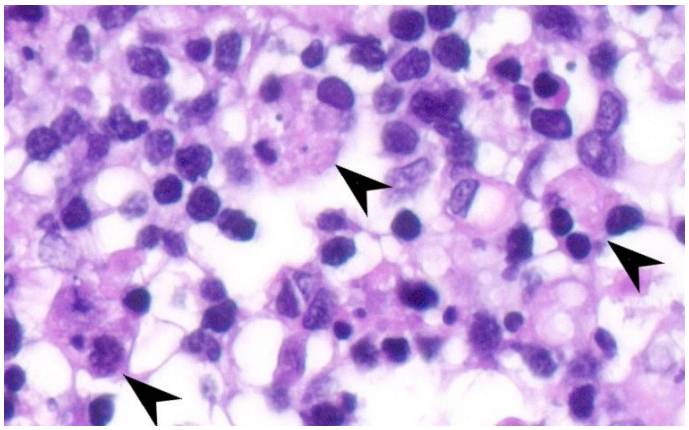

Figure 1: Histology of a lymph node displaying macrophages (arrowheads) with erythrocytes and leukocytes enclosed in their cytoplasm.

P173

Integrated Somatic-Psychiatric Care: Illustrating Unmet Needs in Daily Practice

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Learning objectives: Through three clinical cases encountered on the same day in a psychiatric ward, the authors illustrate the high prevalence of somatic-psychiatric comorbidities (affecting 10-15% of the general population) and highlight the challenges in their management. These cases emphasise the necessity of reinforcing an integrated somatic-psychiatric approach in patient care.

Cases: A 59-year-old woman with schizoaffective disorder was admitted due to behavioural disturbances. She had been bedridden for two years due to progressive walking impairment and had never undergone neurological investigations despite multiple hospitalisations for somatic care. A neurology consultation was requested following progression to tetraparesis. A spinal MRI revealed severe suspended syringomyelia with eccentric spinal compression.

A 56-year-old patient with a history of alcohol dependence and uninvestigated cognitive impairment was transferred from a rehabilitation hospital due to behavioural disorders. Korsakoff's syndrome was diagnosed based on clinical features, thiamine deficiency, and suggestive brain MRI findings. Thiamine supplementation was initiated with several months of delay, leading to a poor outcome.

A 38-year-old patient with paranoid schizophrenia was hospitalised for psychotic decompensation. During hospitalisation, he developed lower limb paresis with gait imbalance, suggestive of bilateral external sciatic popliteal nerve paresis, requiring an ENMG. He initially refused the examination and was later denied access, having been unjustifiably labelled as noncompliant. Consequently, no definitive diagnosis could be established.

Discussion: These three cases illustrate delays in diagnosing and managing somatic comorbidities in psychiatric patients, contributing to excessive morbidity. Several factors contribute to this issue, including the stigmatisation of psychiatric patients and the underestimation of somatic conditions in this population. Since 2015, the Federal Office of Public Health has implemented the "Coordinated Care" project as part of the "Health 2020" strategy, aiming to enhance care coordination for individuals with both mental health disorders and physical illnesses through targeted interventions. These cases illustrate the ongoing need to translate policy into action. Integrated somatic-psychiatric care structures and specific training are essential to address challenges in routine clinical practice.

P174

Leukocytoclastic vasculitis complicating immunosuppressive treatment of Pyoderma gangrenosum

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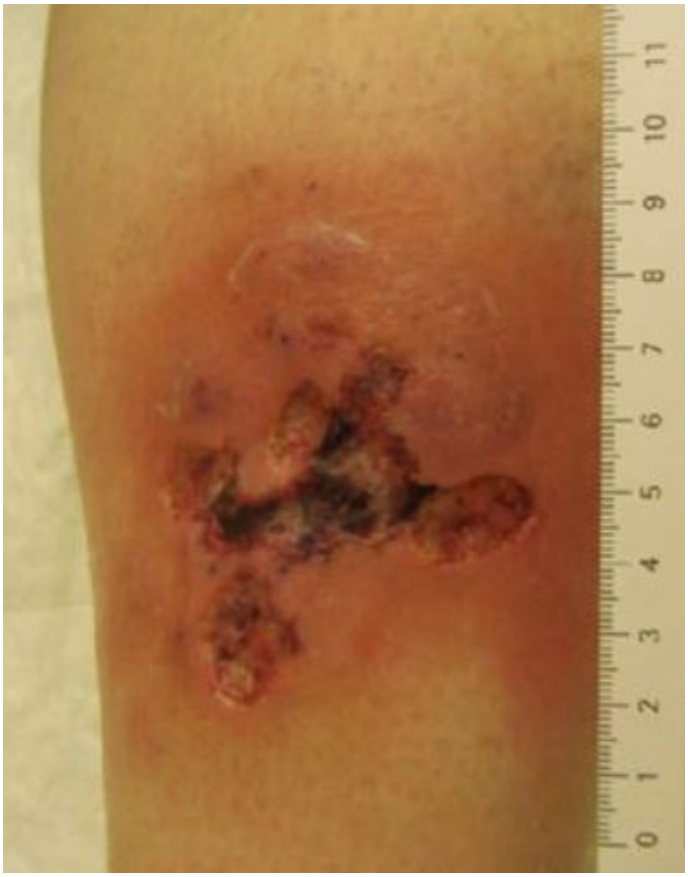
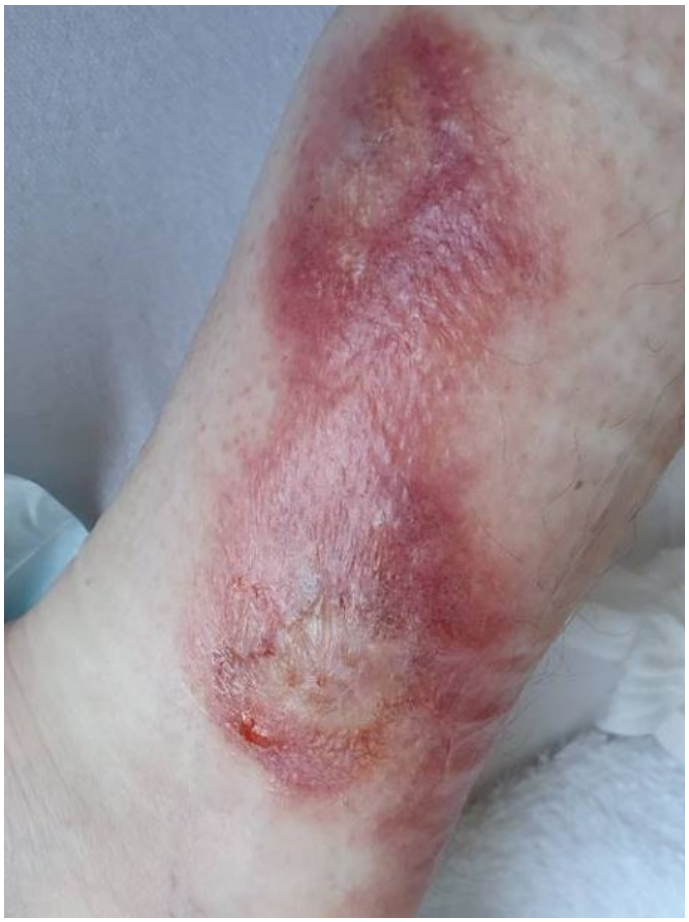
Learning objectives: Correct interpretation and treatment of chronic wounds. Complications of immunosuppressive therapy.

Case: A 44-year-old female patient presented to emergency due to several very painful wounds on both legs. As the wounds were unresponsive to surgical and conservative treatment, a skin biopsy was performed, showing nonspecific findings thus the diagnosis of Pyoderma gangrenosum was made. Treatment with local and systemic steroids was unsuccessful, therefore an immunosuppressive therapy with Adalimumab was initiated. The local situation slowly improved, but, despite the intensive systemic and local treatment, it took the wounds 9 months to close. Surprisingly, the patient complained about new lesions on her legs one year after the start of therapy. The new lesions rapidly progressed within the first 48 hours. Another skin biopsy was performed and surprisingly enough, a leukocytoclastic vasculitis was diagnosed; a rare but known complication of an immunosuppressive treatment with Adalimumab.

Discussion: Pyoderma gangrenosum is a rare, not yet fully understood skin disease that is very painful and can be difficult to treat. The etiology spans from autoimmune diseases to minor

traumata or idiopathic. Treatment usually consists in pain management, wound care and topical steroid or calcineurin inhibitor treatment. In difficult cases, systemic immunosuppression with oral steroid or calcineurin-inhibitor is indicated. Biologicals such as TNF-alpha-inhibitors are used in refractory cases of pyoderma gangrenosum. In our case, TNF-alpha blockade did clearly improve pyoderma gangrenosum however the patient suffered from several infectious complications. Furthermore, drug induced leukocytoclastic vasculitis was developed, a rare but known complication of TNF-alpha inhibition.





P175

Limbs and Glucose out of control

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Learning objectives: Hemichorea is a rare but rather specific neurologic manifestation in patients with nonketotic hyperglycemia. It is characterized by involuntary, flinging movements, localized to one body side. Knowledge of this unusual neurologic presentation is helpful to avoid unnecessary investigations. Symptoms are completely reversible with improved glucose control.

Case: A 69-year-old man presented to the emergency room due to polyuria, polydipsia and a weight loss of 10kg within two weeks. A week prior to presentation, his wife observed the abrupt onset of irregular, large amplitude flinging movements, affecting both his right arm and leg. These movements were non-suppressible and remained localized to the right side (Figure 1). The clinical neurological findings were consistent with hemichorea of the right extremities. Laboratory analysis showed marked hyperglycemia with a plasma glucose of 50.7 mmol/L, an elevated serum osmolarity (317 mmol/kg), and a glycated hemoglobin of 13.6 %. The arterial blood gas analysis revealed no significant acidosis, a normal pCO2 and low-normal bicarbonate. New onset type 2 diabetes mellitus presenting with nonketotic hyperglycemia was diagnosed. The treatment of the marked hyperglycemic state consisted of fluid resuscitation and of continuous intravenous insulin infusion. A computed tomography of the head showed no acute cranial hemorrhage or ischemic demarcation but revealed a hyperdense area in the left caudate nucleus and putamen - a localization that correlates with the patient´s clinical presentation and that, according to previous case reports, is highly specific for nonketotic hyperglycemic hemichorea. We excluded carefully other potential etiologies of acute-onset hemichorea including inflammatory, autoimmune, infectious, structural or drug-induced causes. During episodes of choreiform movements, the electroencephalogram did not reveal any epileptiform activity. With progressively improved glucose control, the hemichorea completely resolved within a few days.

Discussion: This case highlights the importance of recognizing nonketotic hyperglycemic hemichorea as a rare neurologic presentation of new onset diabetes or poorly controlled hypergylcemia in patients with known diabetes. Early identification is crucial to avoid unnecessary investigations as symptoms are typically fully reversible with appropriate glycemic control.

Figure 1: Hemichoreic movements of the right extremities

P176

Non-classical congenital adrenal hyperplasia and pregnancy

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Learning objektive: Non-classical congenital adrenal hyperplasia (NCCAH) and its pitfalls.

Case: 27-year-old patient with biochemical diagnosis of NCCAH (spontaneous 17-OH-Progesteron (17-OHP) of 76.9 nmol/L) presents in the 19th week of her pregnancy in our clinic. Hydrocortisone was discontinued during the gynecological consultation due to the genetic findings of heterozygote mutation. After further investigation of her medical dossier, it was concluded that the patient had a compound heterozygote variant and hydrocortisone was promptly restarted.

Discussion: Congenital Adrenal Hyperplasia (CAH) includes a family of autosomal recessive disorders characterized by impaired cortisol synthesis due to a deficiency in steroidogenic enzymes required for cortisol production, resulting in glucocorticoid and sometimes mineralocorticoid deficiency and adrenal male hormone excess. CAH is divided into a classical or simple virilizing form, presenting with salt-wasting and a non-classical, less severe form usually without salt wasting. Symptoms of NCCAH are hirsutism, acne, androgenic alopecia, anovulation, menstrual dysfunction and infertility mainly due to adrenal male hormone excess. Diagnostics include a baseline measurement of 17 OHP, where levels above 6 nmol/L prompt further evaluation with a stimulation test. Genetic testing is used when biochemical results are borderline or in genetic counseling. Hydrocortisone is typically used as therapy to reduce ACTH drive thereby reducing adrenal male hormones and to replace the insufficient cortisol production in CAH. However, due to the need for multiple daily administration of hydrocortisone, some patients prefer administration of prednisolone. Dexamethasone is not recommended anymore. In severe hirsutism with acne, oral contraceptives and antiandrogens are also used. In the case of pregnancy, if the fetus is at risk for classical CAH, dexamethasone, which crosses the placental barrier is used prenatally to prevent masculinization of the genitalia in a female infant. Otherwise, hydrocortisone should be prioritized. At the time of conception, the hydrocortisone dose should be increased to 20–25 mg/day and dose modifications are carried out every 6–8 weeks with the aim of keeping testosterone levels at the upper normal level. Most patients are compound heterozygous and they tend to have more severe hormonal imbalances than heterozygotes. This is why thorough genetic testing had a particular significance in our case.

P177

Not always Bell's palsy: a rare cause of peripheral facial paresis

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Learning objectives: Peripheral facial nerve palsy is usually idiopathic. Specific causes should be considered in patients with additional cranial nerve abnormalities or systemic symptoms.

Case presentation: A 63-year-old male presented to the emergency room (ER) with acute unilateral peripheral facial paresis, six weeks after an airway infection resulting in persistent bilateral hearing impairment. Steroid therapy was started for suspected Bell's palsy. Three weeks later, the patient returned to the ER reporting headache, nausea, vomiting, dark stool colour, fatigue, and a loss of 10% of his body weight. A Computed Tomography of the head, thorax and abdomen for suspected malignancy was unremarkable. Lumbar puncture revealed lymphocytic pleocytosis (59 cells/µl). Cerebrospinal fluid (CSF) Multiplex Polymerase Chain Reaction (PCR) and serum antibodies for Lyme disease, tick-borne encephalitis and syphilis were negative. A Human Immunodeficiency Virus (HIV) screening test was positive and the diagnosis of HIV was confirmed by PCR. Cranial Magnetic Resonance Imaging showed diffuse dural thickening, while CSF and peripheral blood Fluorescence Activated Cell Sorter (FACS) analysis revealed a clonal B-cell population. Gastroscopy performed for the gastrointestinal symptoms showed an atypical gastric ulcer. The histological diagnosis of a high-grade B-cell lymphoma with Ki67>99% was confirmed in the bone marrow and the gastric biopsy. Identification of the oncogene MYC:IGH on Fluorescence In Situ Hybridization, indicative of an unbalanced translocation t(8;14), resulted in the final diagnosis of Burkitt's lymphoma with lymphomatous meningitis in a patient with HIV.

Discussion: The pattern of peripheral facial paresis following viral infection led to the diagnosis of Bell's palsy, the most common acute mono-neuropathy (1). This case demonstrates premature closure and emphasizes the role of a thorough clinical history and physical examination in preventing it. Neoplastic meningitis affects cranial nerves in up to 40% of patients, most commonly the oculomotor, facial and cochlear nerves (2). While stapedius weakness can cause hyperacusis in Bell's palsy, hearing loss warrants further investigation (3). Our patient had no evidence of cochlear nerve involvement: audiometry revealed bilateral combined conductive and sensorineural hearing impairment, and tympanometry showed fluid in the middle ear, suggestive of presbycusis complicated by an upper airway infection.

P178

Occurrence of Gitelman's pseudo syndrome in a patient on proton pump inhibitor and thiazide

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Learning objectives:

- Recognize the clinical presentation and diagnostic challenges of drug-induced Gitelman's pseudosyndrome.
- Highlight the importance of a precise medical history in patients with fluid and electrolyte disorders.
- Emphasize the complexity of hypomagnesemia in patients on PPIs and thiazides.

Case presentation: A 63-year-old man with hypertension, hypercholesterolemia, and prediabetes was regularly treated with hydrochlorothiazide and esomeprazole for 10 years. presented to the ED because of mild lower limb cramps and paresthesia during a flu-like syndrome. Physical examination showed diffuse hyperreflexia. Blood tests revealed severe hypomagnesemia 0.44mmol/l (0.59<N<0.83). Ionized calcemia was 0.85 mmol/l (1.15<N<1.29), and kaliemia was 2.7 mmol/l (3.6<N>4.6) with normal renal function. Vitamin D was 36 nmol/l (N>75) with paradoxal normal PTH. Venous blood gas analysis showed metabolic alkalosis. Urine chemistry showed hypocalciuria with hypermagnesiuria and hyperchloruria. In the ED, the patient received ionic supplementation, considering a mixed electrolyte disorder. Faced with such a presentation, we suspected a combination of thiazide and PPI thiazide use induced Gitelman's pseudo syndrome. After the withdrawal of both medications, electrolyte levels improved.

Discussion: This case illustrates the complexity of electrolyte disturbances in patients on PPIs and thiazides. While hypomagnesemia and hypokalemia suggest tubulopathy, the patient's long-term PPI use pointed to PPI-induced hypomagnesemia. Elevated urinary magnesium indicated a renal loss, likely due to the thiazide. The association of hypokalemia with hypomagnesemia/hypocalciuria was a key indicator of Gitelman's pseudosyndrome. Hypomagnesemia suppresses PTH secretion by activating calcium-sensing receptors (1,2). This case emphasizes the importance of a detailed medication history and thorough investigation of unexplained electrolyte imbalances. The interplay between thiazides and PPIs may mask thiazidic-induced hypercalcemia (3). Although electrolyte disorders induced by PPIs and thiazides are well known, their synergistic effects remain underexplored. Given the widespread use of these drugs, further research into their interactions is needed.

P179

Oropouche Virus Infection After Travelling to Cuba in June 2024

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Learning objectives: Oropouche virus is an emerging arbovirus transmitted to humans through mosquito bites. It is endemic in South America, with recent outbreaks reported in Cuba, suggesting an expanding geographical range. The clinical diagnosis of Oropouche fever is challenging due to its nonspecific presentation and overlaps with dengue, zika, and chikungunya. We present the first documented case of Oropouche virus disease in Switzerland, involving a 75-year-old male returning from Santiago de Cuba in June 2024.

Case report: A previously healthy 75-year-old male patient with unremarkable past medical history presented to our emergency department with severe headaches, retro bulbar eye pain, orthostatic dizziness, nausea and fatigue over the last

three days. These symptoms began immediately after his return from a three-week trip to Cuba. He had experienced weakness, transient fever, and vomiting a week earlier during his vacation. Apart from a mildly slower cognition and legs covered with mosquito bites, the patient's physical examination was unremarkable. Laboratory work-up revealed thrombocytopenia (73 $10E^3$/µl), mild alanine transaminase elevation (91 U/L), and lymphopenia (0.85 $10E^3$/µl). Cerebrospinal fluid (CSF) analysis showed mild pleocytosis with elevated mononuclear (25/µl) and polynuclear (11/µl) cells. Antibiotic therapy with amoxicillin and ceftriaxone was initiated with suspicion of a bacterial meningitis but was discontinued after bacterial infection was ruled out. The serologies for dengue, zika, and chikungunya viruses were negative. Oropouche virus PCR was positive in both blood and CSF. The patient gradually improved after a neurological rehabilitation within few weeks.

Discussion: This case underscores the critical role of travel history in diagnosing febrile illnesses and highlights the emerging presence of the Oropouche virus in the Caribbean (1). Notably, as seen in our patient, up to 60% of cases exhibit a biphasic course, with symptom recurrence occurring within 7–14 days. However, only a minority of patients develop neurological complications, such as meningoencephalitis, following the initial febrile phase (2).

P180

Painful Hyponatremia

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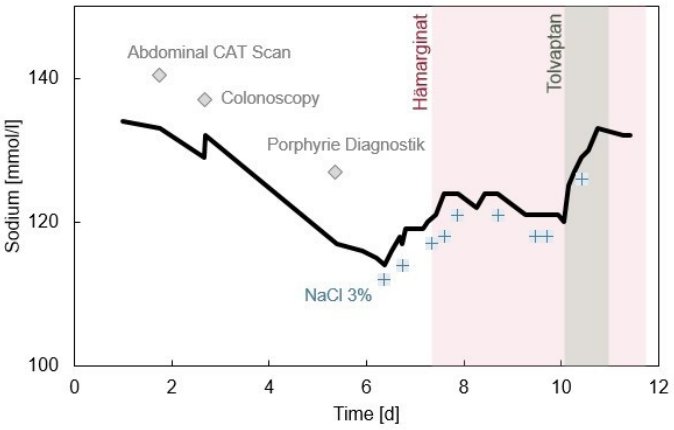
Learning objective: Hyponatremia is a frequent finding in hospital settings. Its etiology can often be determined through further laboratory investigations, with Syndrome of Inappropriate Antidiuretic Hormone Secretion (SIADH) being the most common etiology. However, in cases resistant to standard therapy, rare etiologies must be considered, which may not be covered in conventional diagnostic algorithms (e.g., UpToDate).

Case: A 35-year-old woman presented with a one-week history of lower abdominal pain, diarrhoea and emesis. Despite symptomatic treatment of a suspected gastroenteritis, her condition did not improve. Computer tomography only revealed fecal impaction without further pathological findings. A colonoscopy was unremarkable. The patient exhibited hypertension, tachycardia and diaphoresis, likely secondary to the abdominal pain in an otherwise unremarkable medical history. Given the lack of clinical improvement, repeated laboratory analyses were performed, revealing acute severe hyponatremia with an SIADH pattern. Neither fluid restriction nor hypertonic saline infusion normalized the sodium levels. The combination of abdominal pain, tachycardia and hyponatremia prompted a porphyria urine screen, yielding a positive result. Following this diagnosis, the previously administered porphyrinogenic medication (metamizole) was discontinued and a targeted treatment with hemin was initiated alongside a carbohydrate-rich diet. This therapeutic approach led to a rapid symptom resolution. Due to the persistence of hyponatremia, a short-term therapy with tolvaptan was initiated. The patient was discharged in good condition after 12 days and referred to an outpatient porphyria clinic.

Discussion: In most cases, the cause of hyponatremia can be identified and managed using standard diagnostic algorithms. Acute porphyria attacks are known to precipitate hyponatremia with an SIADH pattern (1). However, due to the rarity of porphyria, it is frequently overlooked as a differential diagnosis. Reevaluating the patient's clinical history and symptoms is essential to identify rare etiologies requiring tailored therapeutic approaches. Treatment of porphyria attacks includes the discontinuation of triggering medications, ensuring a carbohydrate-rich nutrition and heme therapy (2). Hyponatremia can be managed with hypertonic sodium solutions and, in cases of insufficient response, adjunctive therapy with tolvaptan (3).



P181

Pancreatico-pleural fistula: A case report

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Learning objectives: Pancreatic fistula is a rare complication of pancreatic pseudocyst. It happens in patient after acute or chronic pancreatitis. Pleural fistula is one of the rarest fistulas but can be a life threating situation because of the respiratory damage it can cause.

Case: The patient came to the hospital for weakness and cough since 3 weeks and new exertional dyspnea for some days. The diagnostic was made by thoracic computed tomography scan that showed complete atelectasis of the left lung and pleural puncture that revealed high concentration of amylase and lipase. The patient underwent a partial pancreatectomy, splenectomy and thoracic lavage. After that the fever and the general state improved after the surgery. The patient was able to leave the hospital in the month after.

Discussion: Consider a broader differential diagnosis when the clinical feature of your patient doesn't evolve in the right direction.

P182

Pancytopenia due to severe folic acid and vitamin B12 deficiencies

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Learning objective: Initial evaluation of pancytopenia and low reticulocyte count. The risk of malnutrition in patients with psychiatric disorders.

Case: A 69-year-old patient with a 12-day history of fatigue and dizziness was referred to the emergency department. He had a history of catatonic schizophrenia, treated with clozapine since 1988. Physical examination revealed pale skin without bleeding stigmata. Lab results showed pancytopenia with severe anemia, macrocytosis, thrombocytopenia, and neutropenia. Reticulocyte count was inappropriately low, while LDH was extremely and bilirubin slightly elevated. Combined with brownish urine, hemoglobinuria, and bilirubinuria, these findings were consistent with intramedullary hemolysis. The peripheral blood smear showed anisocytosis and poikilocytosis with macroovalocytes and hypersegmented neutrophils. Vitamin B12 was low, folic acid undetectable, and homocysteine strongly elevated. The diagnosis was megaloblastic anemia due to severe folic acid and B12 deficiency. The patient's unbalanced diet was identified as the likely cause. Treatment included erythrocyte transfusion and supplementation of folic acid and vitamin B12. Follow-up showed normalization of blood counts.

Discussion: In cases of pancytopenia with hyporegenerative, macrocytic anemia and intramedullary hemolysis, a severe deficiency in vitamin B12 and folic acid should always be considered. A significant increase in homocysteine level is indicative of a metabolically active intracellular deficiency of vitamin B12 and/or folic acid. A microscopic blood count is important to support the diagnosis of megaloblastic anemia due to vitamin B12 and/or folic acid deficiency. Alternatively, the blood smear may provide clues for further differential diagnoses of non-megaloblastic, macrocytic anemia. Especially myelodysplastic syndrome and acute myeloid leukemia can have overlapping features. This case highlights the risk of malnutrition in patients with psychiatric disorders and the importance of investigating it. Treatment of megaloblastic anemia involves addressing the underlying cause. In this case, correcting the deficiencies with appropriate vitamin supplementation and nutritional counseling.

Table 1: Laboratory analysis on admission. Reference values in brackets	
Hemoglobin (139–165 g/l)	56 g/l
MCV (80-100 fl)	104 fl
Leucocytes (3.0 – 9.6 G/l)	1 G/l
Neutrophils (1.4 – 8.0 G/l)	0.74 G/l
Platelet count (150-400 G/l)	24 G/l
Reticulocytes 0.3%	0.3%
Bilirubin (<20 µmol/l)	23.7 µmol/l
LDH (<220 U/l)	5017 U/l
Haptoglobin (0.14-2.58 g/l)	<0.08 g/l
Ferritin (22-275 µg/l)	762 µg/l
Direct antiglobulin test	Negative
Folic Acid (7.0-45.2 nmol/l)	<3.4 nmol/l
Vitamin B12 (138-652 pmol/l)	106 pmol/l
Homocysteine (5.1-15.4 µmol/l)	138 µmol/l

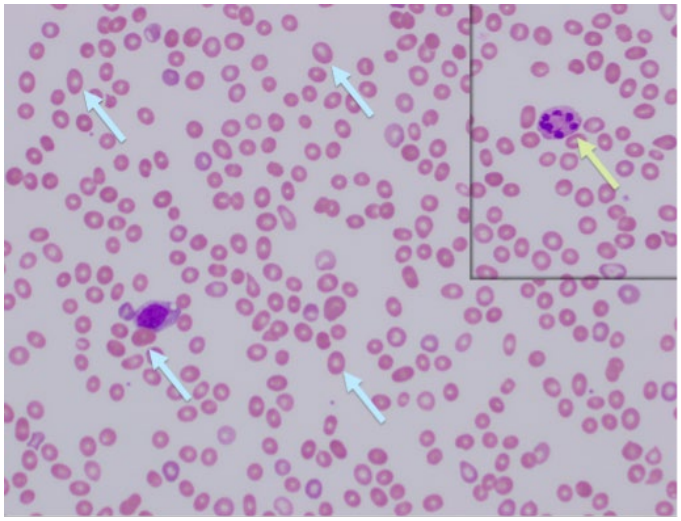

Figure 1: Peripheral blood smear (hematoxylin & eosin) shows anisocytosis and poikilocystosis with macrovalocytes (blue arrows), hypersegmented neutrophils (green arrow) and thrombocytopenia

P183

Paraneoplastic Syndrome with Severe Systemic Inflammation and Unilateral Leg Swelling in a Patient with Myelodysplastic Syndrome - Role of Interleukin Inhibition and Early Allogeneic Transplantation: A Case Report

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Learning objectives: Our case highlights the diagnostic challenges in the management of MDS with immune-related symptoms, which should be high on the differential diagnosis for patients with MDS and features of inflammatory syndromes, particularly when symptoms fail to respond to antibiotic or antifungal therapies. In cases of steroid-resistant, persistent, and severe inflammation, escalation of anti-inflammatory therapy should be considered. Agents with short half-lives are especially well-suited for a therapeutic trial in such situations.

Case: We report on a patient with a 11-year history of myeloproliferative neoplasm (MPN), which had progressed to a myelodysplastic syndrome five months prior to admission. The patient presented with the sudden onset of an inflammatory syndrome characterized by unilateral leg swelling, high fever, bilateral pulmonary infiltrates, and severely elevated inflammatory markers. He did not respond to high-dose steroids but showed a dramatic improvement following treatment with an IL-1 antagonist (anakinra). Fevers resolved, inflammatory parameters decreased, and the edema regressed rapidly, resulting in a weight loss of 17kg within 5 days without additional diuretic treatment. The patient ultimately received an allogeneic hematopoietic stem cell transplantation, resulting in complete remission.

Discussion: Myelodysplastic syndromes (MDS) are clonal bone marrow disorders that typically present with bone marrow failure, but can also manifest with rare paraneoplastic phenomena. Paraneoplastic syndromes, which often involve inflammatory or autoimmune processes, can complicate the diagnosis and are

associated with increased release of cytokines such as interleukin 1 (IL-1) and interleukin 6 (IL-6,), which drive systemic inflammation and may indicate the progression of MDS or transformation to aggressive leukemia. Case reports describing this paraneoplastic phenomenon are scarce and almost all patients showed high mortality because of aggressive course and delayed diagnosis. This case illustrates the diagnostic challenges of paraneoplastic phenomena associated with MDS and underscores the importance of clinical reasoning and, in some cases when the diagnosis is uncertain, conducting a hypothesis-based therapeutic trial to see if it has the desired effect. Such therapeutic trials have the potential to confirm or exclude a diagnosis, especially when diagnostic tools alone do not provide clarity.

P184

Persistent inflammation in patients with intravascular devices

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Learning objective: In patients with intravascular foreign devices with fever and unexplained inflammation, infective endocarditis (IE) / vascular (endo-)graft infections (VGEI) should be considered.

Case: A 66-year-old man presented with progressive fatigue, exertional dyspnea since few months, and new-onset hypotension and vertigo for two weeks. Clinical findings were signs of congestive heart failure, petechiae on the lower extremities and a splinter hemorrhage . CRP was elevated. His medical history is notable for a prosthetic aortic valve and ascending aortic graft 20 years ago. Six months ago he was treated with oral antibiotics for 10 days due to a respiratory tract infection; symptoms resolved but CRP remained elevated (>40 mg/L). All sequentially drawn blood cultures showed growth of Enterococcus durans. The patient was started on amoxicillin / ceftriaxone. Transesophageal echocardiography (TEE) revealed severe mitral regurgitation and a 1.2 cm vegetation. A PET-CT scan showed a nonspecific uptake of the aortic valve and graft. Due to a favourable clinical response and rapid vegetation regression on follow-up TEE, the patient was switched to penicillin / ceftriaxone in an outpatient antibiotic treatment (OPAT) program for six weeks, and then transitioned to oral amoxicillin for another six weeks during which CRP levels normalized. A final PET-CT scan demonstrated unchanged uptake. Blood cultures remained negative at follow-up up to 4 weeks, and the patient remained without any symptoms.

Conclusion: In patients with prosthetic heart valves / intravascular grafts presenting with fever and persistent inflammation, IE / VGEI has to be considered. Diagnosis is based on clinical suspicion, microbiological samples (including serial blood cultures) and cardiac imaging. PET-CT may be considered but interpretation remains challenging. To date, only a few case reports of E.durans IE / VGEI have been reported. In VGEI enterococci are common, but E.durans is rarely associated with human infections, and its clinical significance remains unclear. The optimal duration of antimicrobial therapy for VGEI remains undefined. In general, surgical debridement and 3–6 month of antibiotics are recommended. If surgery is unfeasible, lifelong suppression therapy may be necessary. PET-CT has become a valuable diagnostic tool, offering high sensitivity but low specificity, leading to incidental findings influencing clinical decision-making in suspected VGEI.

P185

Pneumonia and exudative pericarditis due to an emerging zoonotic disease in Switzerland

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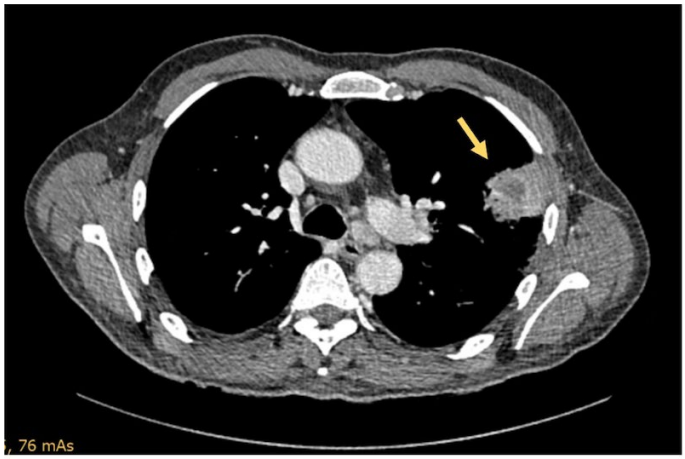
Learning objectives: Tularemia is caused by Francisella tularensis, a fine gram-negative rod. Consider tularemia in cases of pneumonia that do not respond to empiric antibiotic therapy and a suggestive medical history, such as ranging the woods, gardening, contact with (rodent) animals, or tick bites, as well as in potentially malignant pulmonary findings that, based on the history and clinical presentation, are more consistent with an infectious disease.

Case: In a 64-year-old patient who was admitted to our emergency department due to a febrile inflammatory condition, a computed tomography (CT) scan revealed a 3.5 cm in diameter, centrally necrotizing round lesion in the left upper lobe of the lung, accompanied of mediastinal lymphadenopathy. After an unsuccessful treatment attempt with Co-Amoxicillin, we expanded the diagnostics due to the abnormal CT findings to include serology for F. tularensis, which initially showed a positive result and demonstrated a more than 3x increase in a follow-up test. During the course, the patient complained of position-dependent chest pain, with newly developed right bundle branch block and PQ segment depressions on the electrocardiogram (ECG). A transthoracic echocardiography revealed a pericardial effusion, leading to the strong suspicion of a tularemie-associated acute exudative pericarditis, which was treated with ibuprofen and colchicine. Due to case reports of reinfection after Doxycycline monotherapy, we decided to administer a combination therapy of Tobramycin 3.5mg/kg per day intravenously for 7 days and Doxycycline 2 x 100mg per day for 14 days, which resulted in clinical and laboratory improvement, the resolution of the pericardial effusion and a reduction of the pulmonary lesion. A final CT scan of the chest is still pending at this time.



CT Scan showing the pulmonary lesion

Discussion: Given the increasing incidence of tularemia cases in Switzerland over the past 10 years and the potentially severe

course of the disease, the clinical picture of tularemia should be familiar in emergency departments and general practice. In about 1/3 of the cases, a clear source of infection cannot be identified, so in the presence of appropriate clinical findings, testing for Francisella tularensis should be considered even with a non-suggestive medical history. In our case, the conspicuous pulmonary findings that did not respond to empirical antibiotic therapy, rather than the medical history, led to further testing.

P186

Pulmonary lesions in Inflammatory Bowel Diseases: Is there a culprit? The disease or the treatments? Two cases reported

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Learning objectives: Interstitial lung disease (ILD) can occasionally occur in the context of inflammatory bowel disease (IBD), either as a direct manifestation of the disease, a side effect of treatment, or as a result of an infection. Distinguishing between these potential causes is challenging, as their clinical and radiological presentations often overlap, requiring careful evaluation and consideration to guide therapy

Case 1: A 27-year-old female patient, known for ulcerative colitis, treated with anti-TNF, was evaluated for dyspnoea. The CT-scan showed multiples nodules and condensations. A broad infectious study, including a broncho-alveolar lavage, was negative. The nodule's histology indicated a mixed inflammatory infiltrate, predominantly with T-cells. The patient was put on systemic steroids and her TNF-antagonist treatment was stopped. Six weeks later, both her symptoms and the pulmonary lesions had disappeared.

Case 2: A 21-year-old female patient, known for an untreated Crohn's disease, was hospitalised for a flare. During the stay, she complained of chest pain. The CT-scan showed a subpleural nodule. The infectious investigations were negative. The histology confirmed that the nodule was a granuloma, with no evidence of a mycobacterium infection. We then concluded that this lesion was a consequence of the active disease.

Discussion: Differentiating between the causes of pulmonary lesions in IBD patients, particularly those on immunosuppressive therapy, can be challenging. Infection must be ruled out first, with a focus on atypical mycobacteria and tuberculosis. When infection is excluded, the timing of TNF inhibitor exposure and the presence of other signs of extra-intestinal disease involvement may provide clues to distinguish between a granulomatous reaction due to anti-TNF therapy and pulmonary manifestations of active IBD. However, this distinction is not always clear-cut, and a thorough evaluation is necessary for accurate diagnosis and management.

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Pylephlebitis with a liver abscess caused by asymptomatic sigmoid diverticulitis

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Learning objective(s): Pylephlebitis, defined as infective thrombophlebitis of the portal vein, represents a rare complication of abdominal infections in the drainage area of the portal vein. Due to its sporadic occurrence, controlled study-based data is lacking for treatment guidelines. This case report presents a possible clinical presentation of a pylephlebitis caused by asymptomatic sigmoid diverticulitis and describes a structured approach to its treatment.

Case: A 60-year-old man was admitted to the emergency department with a 2-week history of fever, unintentional weight loss and progressive epigastric pain. Laboratory tests revealed elevated inflammatory markers. Initial computed tomography (CT) imaging revealed three significant findings: a suspicious focal lesion in liver segment II, extensive bilateral intrahepatic portal vein thrombosis (Figure 1), and features consistent with mild sigmoid diverticulitis. The segment II lesion exhibited in subsequent magnetic resonance imaging fluid-signal characteristics with peripheral contrast enhancement and central diffusion restriction, suggestive of an abscess formation (Figure 2). A chest CT performed for staging purposes showed no evidence of primary or metastatic malignancy. Based on the clinical presentation and radiological findings, a diagnosis of pylephlebitis with associated liver abscess was established, likely secondary to clinically indolent sigmoid diverticulitis. Following the beginning of broad-spectrum antibiotic therapy, the symptoms resolved rapidly. Antibiotic therapy was continued on an outpatient basis until the liver abscess resolved on follow-up imaging. Oral anticoagulation with phenprocoumon was also started and continued until resolution of the pylephlebitis on follow-up imaging.

Discussion: Pylephlebitis has been reported as a complication of various intraabdominal infections. This case is unique in its presentation, as the primary infection source was determined to be an asymptomatic sigmoid diverticulitis. Even though the diverticulitis was asymptomatic, it is crucial to treat the primary cause of the pylephlebitis and the liver abscess as part of an effective and structured treatment plan.

Figure 1:

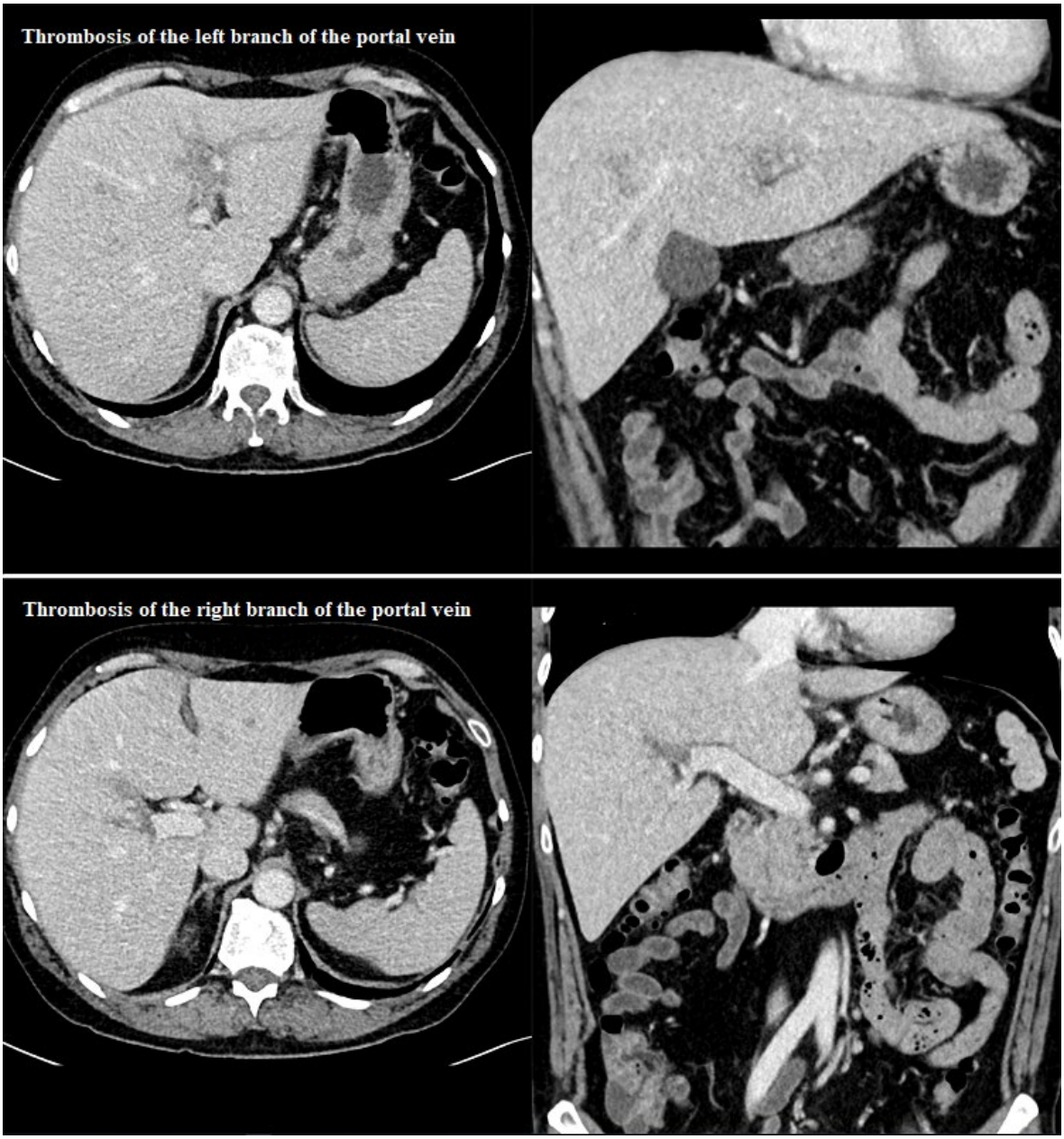
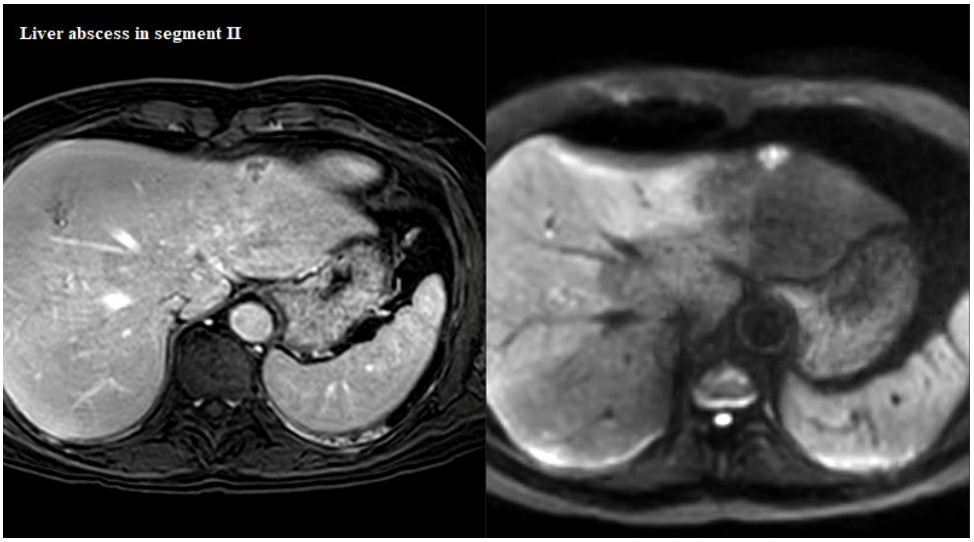


Figure 2:



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Pyoderma Gangrenosum in a Patient Using Cocaine

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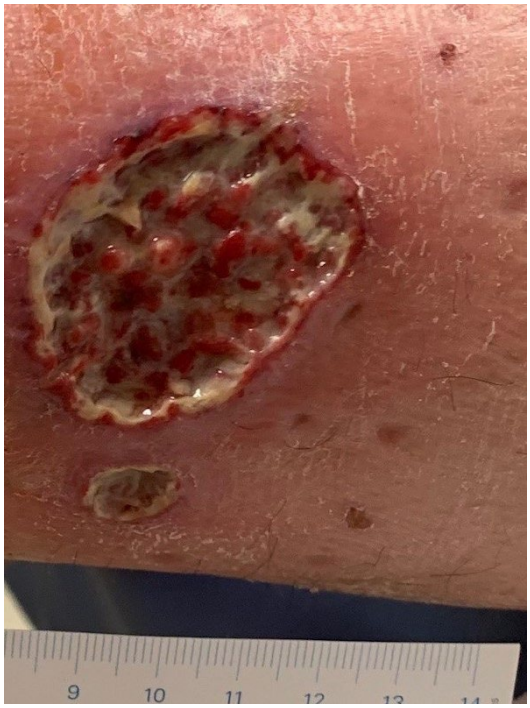
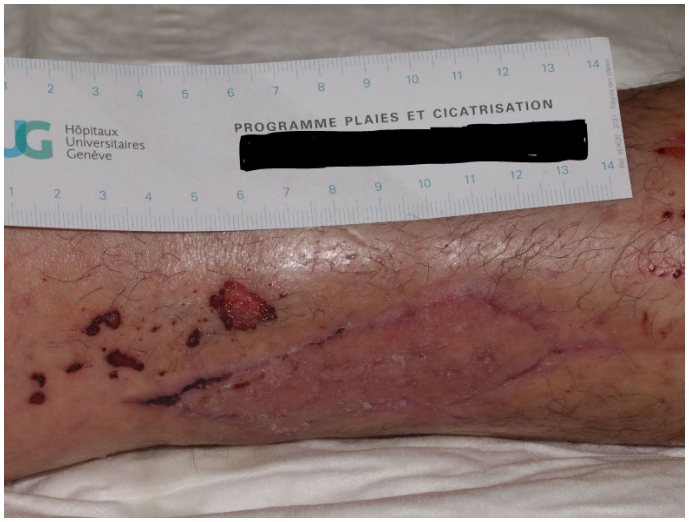
Learning objectives: Pyoderma Gangrenosum (PG) is a rare inflammatory dermatological disorder associated with painful, ulcerative lesions. Case reports have suggested that the use of cocaine contaminated with levamisole, an anthelmintic that increases the psychotropic effects of cocaine, can induce PG (1, 2). By presenting a case of PG in a patient consuming cocaine we aim to improve awareness for this rare condition among clinicians in primary care and hospital settings, where dermatological disorders are frequent. This case further highlights cocaine use as a potential inducing agent for the development of PG.

Case: The patient was a 41-year-old man that presented at our emergency room with ulcerative skin lesions on the lower and upper limbs. He first noticed the lesions about six weeks ago and had undergone oral antibiotic treatment without improvement, with the appearance of new lesions. His medical history was relevant for cocaine consumption (once per month). Clinical exam revealed ulcerative lesions on the upper and lower limbs with a granular aspect, well-defined borders, purple halo and peripheral cribriform scarring, as shown in Figure 1. Histological findings were compatible with superinfected PG and secondary necrotising vasculitis. Radiological and laboratory workup was insignificant for systemic inflammatory disorders or lymphoproliferative disease. The patient was hospitalised and received a seven-day intravenous antibiotic regimen adapted to bacterial swabs, daily wound dressing and systemic ciclosporine treatment. After initial improvement, the lesion on the left lower limb worsened, necessitating wound debridement, further intravenous antibiotic treatment and eventually skin grafting. The patient fully recovered with a good aesthetic outcome as shown in Figure 2.

Discussion: PG should be considered in all ulcerative skin lesions with unusual appearance, especially if more frequent causes, like ischemic, vascular, or infectious origins are unlikely. Clinicians should be able to recognise typical lesions and seek specialist advice to ensure appropriate management. Diseases associated with PG include inflammatory bowel disease and hematologic malignancies, but a thorough medical history, including substance abuse, is necessary to identify cocaine contaminated with levamisole as a potential trigger for PG.

The patient consented to this case being presented and published including photos.





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Rare case of unusual headaches due to pituitary apoplexy in a 42-year-old woman diagnosed at the emergency

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Learning objectives: Pituitary apoplexy(PA) is a rare neuroendocrine emergency caused by sudden hemorrhage or infarction of the pituitary gland, occuring in the context of a pre-existing pituitary adenoma. Clinical presentation includes headaches, visual disturbances, and signs of acute pituitary insufficiency. We report the case of a 42-year-old woman who presented to the emergency with unusual headaches, rapidly diagnosed as pituitary apoplexy.

Case: A 42-year-old woman consulted with left-sided hemicranial and retro-orbital headaches, majored by eye movement, progressive, and unresponsive to levels 1-2 analgesics. She also reported photophonophobia, nausea, and vomiting. There was no trauma, prior history of migraines or similar headaches episodes. On examination, the patient appeared generally unwell, with left-sided headaches rated 8/10 and a fever of 38°C. Neurological examination was unremarkable. Percussion of the left frontal cranial area was painful. Laboratory tests revealed inflammation, with a white blood cell count of 15.7x10^9/L and C-reactive protein (CRP) at 56 mg/L. To rule out thrombophlebitis due to prior suspicion of sinusitis, a computed tomography (CT) venography was performed, which revealed no signs of sinusitis or thrombosis but identified a sellar lesion prompting

the need fordedicated imaging. In the absence of complications related to sinusitis on CT, the diagnosis was reconsidered, and PA was suspected. An emergency magnetic resonance imaging (MRI) scan confirmed hemorrhagic PA in a pre-existing macroadenoma (13x21 mm), with mass effect on the left cavernous sinus and optic chiasma, correlating with the patient's symptoms. A lumbar puncture revealed erythrocytes (513 M/L), supporting the diagnosis.Secondary tests revealed insuffiency in corticotropic(ACTH 14 ng/L) and thyrotropic(TSH 0.115 mUI/L) hormones, along with central diabetes insipidus, a rare complication of pituitary apoplexy. Hormonal replacement therapy was promptly initiated. Consultations with neurosurgery and ophthalmology determined that surgery was not required, and close follow-up recommended.

Conclusion: This case underscores the importance of reconsidering the diagnosis and recognizing PA in patients with atypical headache as a diagnosis we should not miss. The CT scan suggested the diagnosis, but brain MRI and hormonal testing were essential for confirmation. Management involves urgent hormonal replacement therapy, neurosurgical and ophtalmologic evaluation.

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Reflex anuria as a rare cause of acute kidney failure

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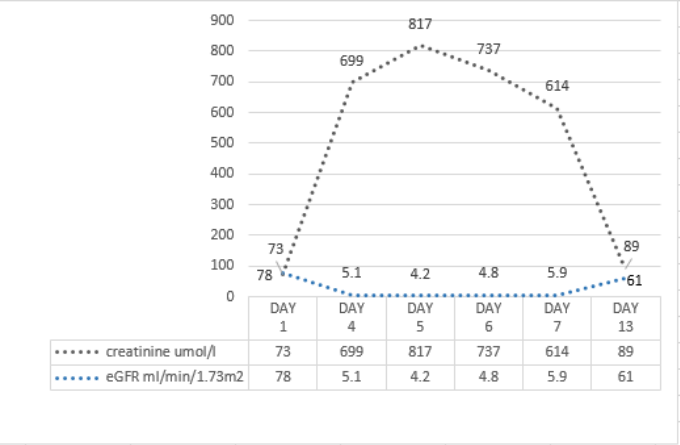
Learning objectives: Anuria as a rare cause of acute kidney failure.

Case: A 60-year old female patient presented at the emergency room with suspected pneumonia, confirmed in the chest computed tomography, in the context of known COPD and sarcoidosis. She received amoxicillin/clavulan acid and corticosteroid treatment. At home she had suffered of self limiting heavy left – sided flank pain. At day four of the treatment the laboratory tests revealed a kidney failure with an increase in creatinine levels from 73 umol/l (eGFR: 78 ml/min/1.73m^2) to 699 umol/l (eGFR: 5.1ml/min/1.73m^2) and oliguria. Clinical, laboratory and sonographic evaluation excluded pre- and postrenal cause. The urine test showed hematuria with dysmorphic erythrocytes. By suspected antibiotic - induced interstitial nephritis or possible rapid progressive glomerulonephrits the patient received once i.v. methylprednisolone (250 mg/die). The kidney biopsy was normal. The complements C3,C4 and ANCA were negative. As the diuresis and metabolic homeostasis were preserved she wasn't placed on dialysis. The kidney function restored spontaneously within 9 days.

Discussion: The rapid and severe temporary decline in renal function and oliguria in the absence of other identifiable causes was consistent with reflex anuria (RA). Reflex anuria (RA) is rare and is defined as cessation of urine output from both kidneys due to irritation or trauma to one kidney or its ureter, or severely painful stimuli to other organs. The mechanism has two possible etiologies: neuromuscular, secondary to renorenal or uretrorenal reflex. Parenchymal injury leads to intrarenal arteriolar spasm and ureteral spasm causing reflex renal arteriolar vasoconstriction. An other mechanism suggests ureteric edema causing obstruction and anuria. RA is a diagnosis of exclusion, only being considered after exclusion of all other differential diagnosis. Treatment plan should be directed toward the mechanisms. Abnormalities of the autonomic nerve system and congenital urogenital malformations incline people to RA [1,2,3]. Here the RA may have been triggered by acute severe flank pain before admission (possibly related to the passage of a kidney stone), although the urinary findings were not typical, and no nephrolithiasis was detected. RA is a diagnosis of exclusion and should be considered after ruling out all other potential causes. The treatment plan should focus on addressing the underlying mechanisms.



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Reversible acute heart failure as a result of thyrotoxicosis in a patient with unknown Graves`disease

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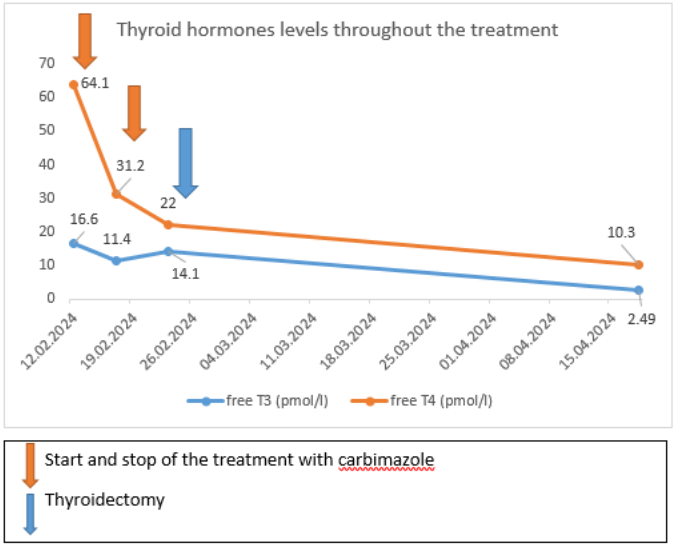
Learning objective: Thyrotoxicosis can affect multiple organ systems. We report a case of a young female patient with previously undiagnosed Graves` disease presenting with an acute heart failure due to tachycardia-induced cardiomyopathy.

Case: A 43-year-old, previously healthy female presented to our emergency department with sudden-onset dyspnoe and diarrhea for several weeks. Clinical examination was significant for a fast and irregular heart beat, bilateral crackles on the basis of the lungs and a diffuse abdominal discomfort. The thyroid gland was enlarged with no palpable nodules. Electrocardiogram revealed a previously undiagnosed atrial fibrillation with a rate of 159/min. Laboratory results revealed an elevated NTproBNP (1894 ng/l). The thyroid-stimulating hormone (TSH) was not detectable and the free thyroid hormones were significantly increased (fT3 16,6 pmol/l, fT4 >64 pmol/l). Echocardiography revealed a reduced left ventricular ejection fraction (LVEF) and moderate to severe mitral and tricuspidal rerurgitation. Ultrasound was significant for an enlarged thyroid gland with a volume of 33 mL and no visible nodules. TSH-receptor antibodies were positive. Hence, thyrotoxicosis due to Graves' disease was confirmed, presenting with atrial fibrillation and tachycardia-induced cardiomyopathy, resulting in acute heart failure. The patient was admitted to the medical ward and started on intravenous diuretic therapy, oral anticoagulation and a guideline-directed medical therapy of heart failure. At the same time, a therapy with carbimazole was started. On the third

day of the treatment with carbimazole, the patient developed neutropenia. We therefore decided to stop the treatment after eight days. A thyroidectomy was performed 17 days after the initial hospital admission and substitution therapy with levothyroxin was started. At the follow-up 5 months after hospital discharge, an echocardiography showed a normal LVEF and only minimal mitral regurgitation. ECG revealed no episodes of atrial fibrillation.

Discussion: Thyrotoxicosis is a rare cause of heart failure. The most common etiology of the thyrotoxicosis is Graves' disease. With appropriate treatment, the thyrotoxicosis-induced cardiomyopathy can be fully reversible. It is therefore crucial to consider thyroid disease in patients presenting with a first episode of heart failure, especially in previously healthy, young individuals.



Graph 1: Thyroid hormones levels throughout the treatment

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Scurvy from 'Perfect' Eating: The Consequences of Overly Restrictive Diets

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Learning objectives: Recognize the clinical presentation of scurvy; consider nutritional deficiencies in unexplained bleeding disorders; emphasize the importance of thorough history-taking.

Case: A 55-year-old patient was admitted for severe anemia and lower limb hematomas that developed spontaneously 3 weeks prior to admission. Laboratory results showed anemia (Hb 6.7 g/dL), inflammation (CRP 85 mg/L), and normal CPK levels. The patient had well-controlled Crohn's disease treated with azathioprine and no history of trauma. Physical examination revealed lower limb edema and ecchymosis but no muscle weakness or other hemorrhagic signs. Hematologic tests showed normal platelet count, prothrombin time, and coagulation factor levels. A gastroscopy and abdominal CT scan revealed no active bleeding. Azathioprine was discontinued due to a suspected drug side effect; MRI reassessment confirmed hemorrhagic aponeurotic infiltration without muscle tears. A closer examination revealed follicular purpura. A detailed dietary history showed the patient had consumed only five foods, without fruits or vegetables, for over a year to manage Crohn's disease symptoms. Vitamin C levels, measured on day five after resuming a normal diet, were low (18 µmol/L; N: 17-85), leading to a diagnosis of scurvy. Normal coagulation studies ruled out acquired von Willebrand disease. Vitamin C was supplemented (1000 mg/day for five days, then 500 mg twice daily for one month). Hemoglobin normalized, and the hematomas resolved. Azathioprine was reintroduced after one month without complications. At follow-up, the patient remained well.

Discussion: This case highlights the importance of considering nutritional deficiencies in patients with unexplained bleeding and anemia. Scurvy, often overlooked in developed countries, can present with severe hemorrhagic manifestations and mimic other hematologic or musculoskeletal disorders. A thorough dietary history is crucial in identifying at-risk patients, particularly those with chronic illnesses affecting food intake. Prompt vitamin C supplementation leads to rapid symptom resolution, reinforcing the need for early recognition and treatment.(1) This case underscores the continued relevance of scurvy and the importance of comprehensive clinical evaluation in diagnosis.(2)

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Secondary Capillary Leak Syndrome as a Complication of Sepsis in an Immunosuppressed Patient: A Case Report

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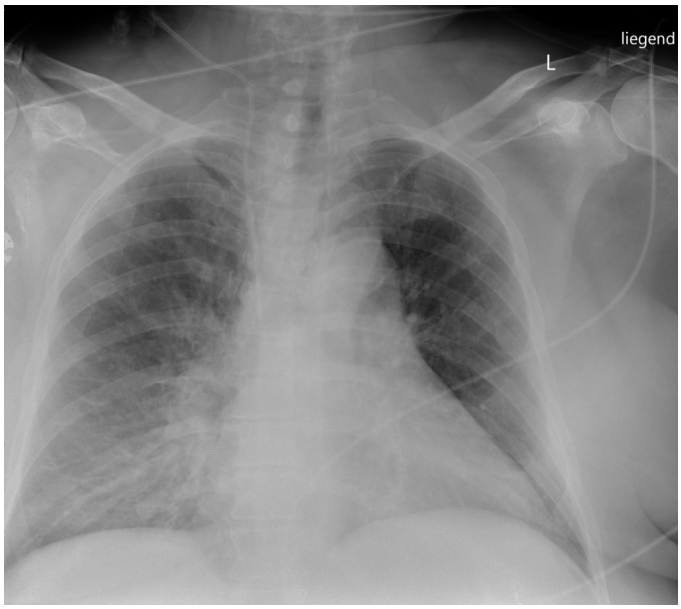
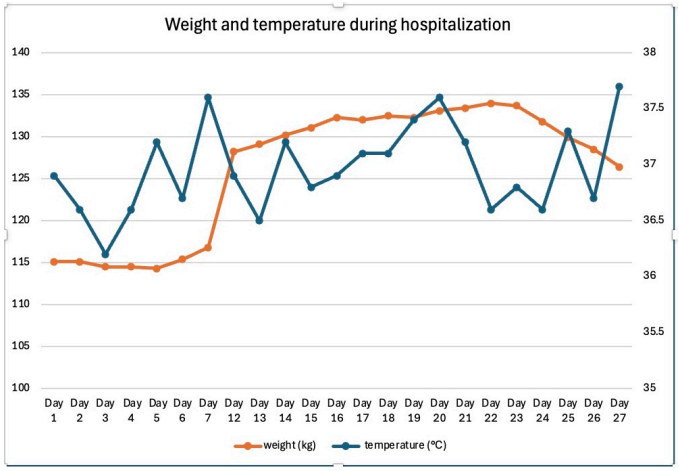
Learning objectives: Chronic lymphocytic leukemia (CLL) increases susceptibility to recurrent infections, which can exacerbate endothelial dysfunction and trigger Secondary Capillary Leak Syndrome (SCLS). Certain therapies, such as monoclonal antibodies, immune checkpoint inhibitors, and tyrosine kinase inhibitors, may further aggravate endothelial dysfunction, increasing the risk of SCLS.

Case: A 61-year-old female with relapsed CLL treated with acalabrutinib presented with herpes zoster neuralgia, diarrhea, vomiting, and lower leg edema. Laboratory findings included macrocytic anemia, mild neutrophilia, marked lymphopenia, elevated CRP, and hypoosmolar hyponatremia. Skin examination revealed regressing, dry eczematous changes without blisters. Over time, the patient developed a generalized maculopapular rash and productive cough. The skin changes were interpreted as a drug-induced exanthem. Imaging revealed small infiltrates in the right lung. Legionella and pneumococcal antigens in urine were negative. The patient deteriorated into febrile sepsis caused by Staphylococcus aureus bacteremia, accompanied by generalized edema, severe hypoalbuminemia, and multiorgan dysfunction consistent with SCLS. The syndrome manifested as significant fluid extravasation, a weight gain of 19 kg, and widespread edema. Echocardiography showed severe mitral valve insufficiency without vegetations, and imaging ruled out venous congestion, confirming systemic fluid redistribution. Management included cautious fluid resuscitation, norepinephrine for hemodynamic support, and broad-spectrum antibiotics (cefepime and vancomycin). Corticosteroids and diuretics were added, and acalabrutinib was temporarily withheld. Potential entry points for Staphylococcus aureus bacteremia included herpes zoster lesions, exanthem, or stasis dermatitis. A bone marrow biopsy post-infection showed well-controlled CLL with reactive changes.

Discussion: CLL can rarely facilitate SCLS through paraneoplastic mechanisms, infections, or treatment-related factors. This case highlights SCLS driven by systemic inflammation, compromising endothelial integrity and causing protein-rich fluid leakage. This led to intravascular hypovolemia, extravascular edema, and hypoperfusion. Timely recognition and a multidisciplinary approach were essential for stabilizing the patient and preventing complications.





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Segmental arterial mediolysis with multiple kidney infarctions: A case report

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Learning objectives:

To recognize segmental arterial mediolysis (SAM) as a rare but significant cause of arterial infarctions in unexplained vascular events.

To know basic SAM management.

Case: A 56-year-old previously healthy male was referred for evaluation of suspected multiple right-sided renal infarctions, which were demonstrated on computed tomography (CT) due to acute severe abdominal pain in the right flank region (Fig. 1). The only laboratory abnormality was a mild elevation in lactate dehydrogenase and leucocytosis. CT imaging revealed a plaque-like lesion with stenosis in the right renal artery. Given the unclear etiology, anticoagulation with dalteparin and atorvastatin was started. The patient subsequently developed new left-sided abdominal pain, and follow-up CT revealed new left renal infarctions, along with irregular long-stretch wall thickening in both renal arteries and the right external iliac artery. Suspected systemic vasculitis prompted the escalation of therapy with pulse methylprednisolone, which was discontinued after 3 days due to a lack of evidence of vasculitis, as indicated by negative laboratory tests and normal CT-angiography of the abdomen. Further evaluation including duplex sonography (Fig. 2) led to the diagnosis of SAM. In the absence of atrial

fibrillation, anticoagulation was replaced by secondary prophylaxis with aspirin 100 mg/d, in addition to optimizing cardiovascular risk factors.

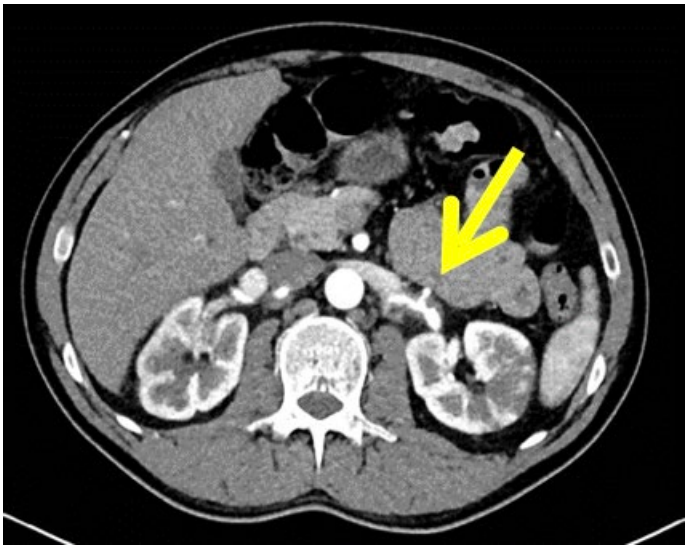

Fig. 1 CT scan showing SAM in the left renal artery

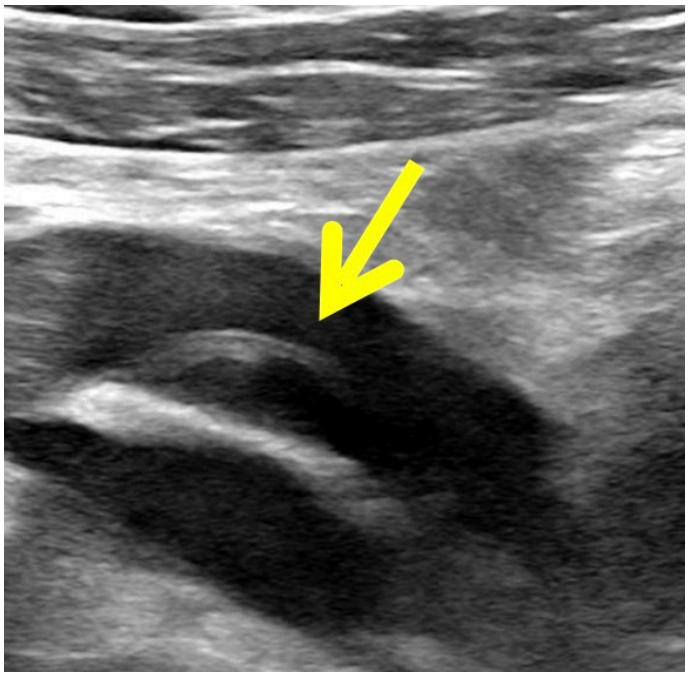

Fig. 2 Sonography of the right iliac artery, arrow marking the focal rupture of the intima/media complex

Discussion: SAM is a rare, non-atherosclerotic, non-inflammatory arteriopathy characterized by dissecting aneurysms resulting from the lysis of the outer media of the arterial wall. Its pathophysiology remains unclear, although repeated vasoconstrictor stimuli have been associated with the histological finding of medial lysis in vessel walls, which is the hallmark of SAM. Diagnosing SAM is difficult due to the lack of specific biomarkers, with CT imaging being crucial for identifying typical arterial changes. SAM may present similarly to small- to medium-sized vasculitides and fibromuscular dysplasia. The acute phase of SAM carries a high mortality rate, but the long-term natural history of the disease seems favorable. The management of SAM is poorly understood. Antiplatelet therapy may be considered to reduce the risk of thrombotic complications, alongside blood pressure control.

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Severe post-artesunate delayed hemolysis in a patient with complicated malaria tropica with septic shock

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Learning objectives: Post-artesunate delayed hemolysis may mimic a febrile infection and require blood transfusions, especially with a high parasite load. Preexisting post-Covid syndrome may intensify following severe malaria.

Case: A 54-year-old Austrian man with a history of severe post-Covid syndrome presented with fever, arthralgia and headache two weeks after returning from Guinea. The clinical examination revealed abdominal tenderness, icterus, hypotension and tachycardia. A diagnosis of septic shock was made with severe liver-, kidney- and circulatory dysfunction as well as a deranged coagulation and a high LDH. Plasmodium falciparum was found in the blood smear, with a very high parasite load of 17%. In addition to hemodynamic stabilization in the intensive care unit, intravenous artesunate was started, which drastically reduced parasitaemia. A switch to Artemether/Lumefantrine was possible on day 3 with a parasite load of ≤ 1%. No more parasites were detectable from day 5 on. However fever, tachycardia, headache and severe muscle pain persisted. Although kidney-, liver- and inflammation parameters rapidly improved, the LDH increased again from day 9 on with new progressive anemia (55 g/l). After ruling out other infections or a relapse of malaria, the changes could be attributed to post-artesunate delayed hemolysis. Two red blood cell concentrates were administered on day 15. Subsequently, hemolysis stabilized, LDH decreased, fever subsided and the patient could be transferred to rehabilitation services.

Discussion: We illustrate a case of post-artesunate delayed hemolysis in complicated malaria. Treatment with artesunate leads to the death of malaria parasites, which then are selectively removed from erythrocytes in the spleen. The purged erythrocytes (also known as `pitted´ or `once-infected´ erythrocytes) return to the circulation with a shortened life span due to deformation and residual parasitic antigens. The simultaneous destruction of erythrocytes can consequently lead to massive delayed hemolysis 7-21 days after treatment, especially with high parasitaemia. This event often requires blood transfusion. It is therefore advisable to determine hemoglobin and hemolysis parameters on days 7, 14, 21 and 28 after artesunate therapy. Prolonged muscle pain out of proportion, in this patient with a history of severe post-Covid syndrome, is likely to represent rebound post-Covid syndrome as has previously been shown for other inflammatory conditions.

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Shiitake Happens: When Mushrooms Turn Into Rashes!

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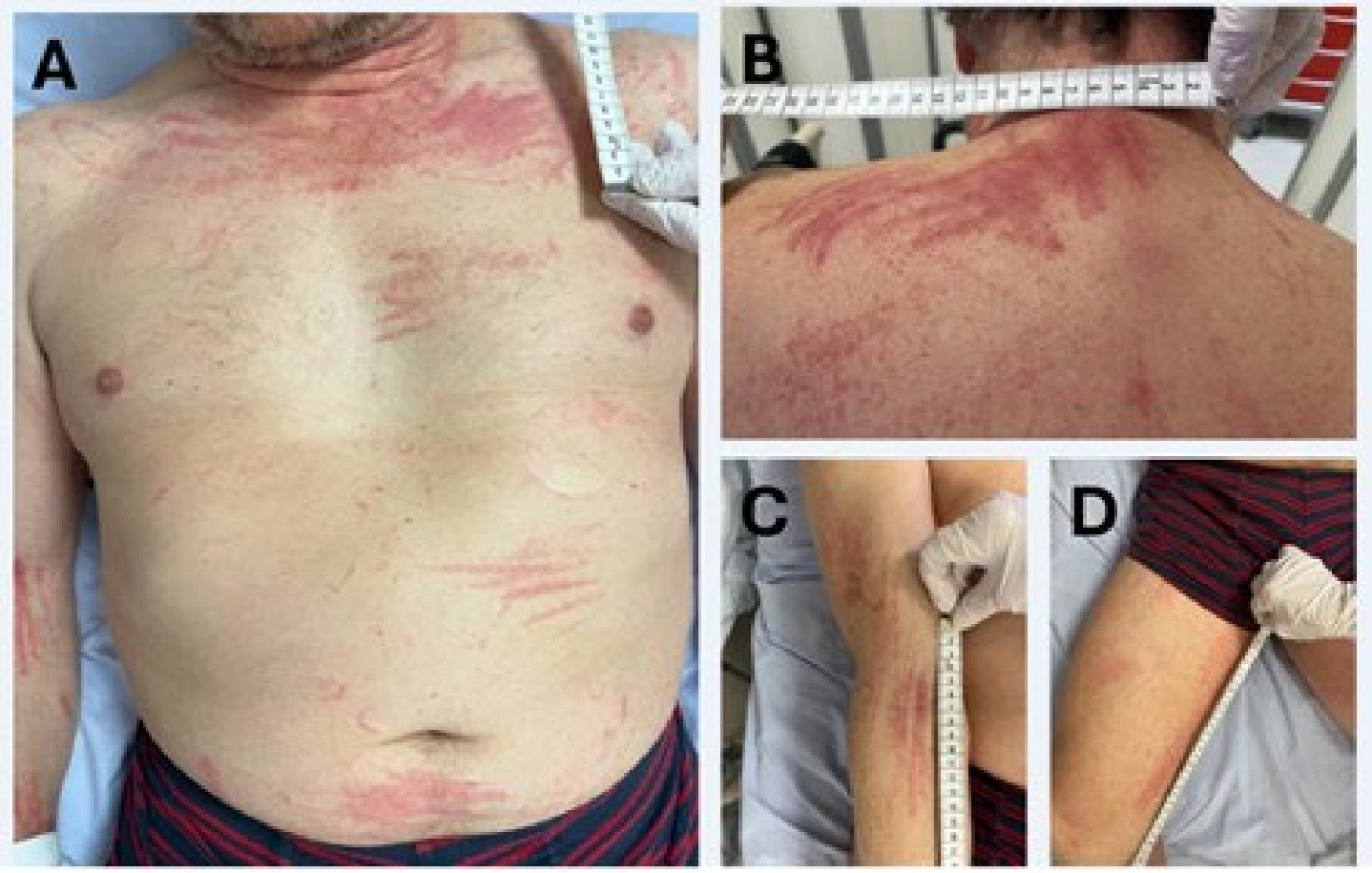
Learning objectives: Recognise the whip-like erythematous lesions typical of Shiitake-dermatitis; recognize the importance of a detailed dietary history for diagnosis

Case: A 54-year-old man presented to the emergency department with erythematous skin lesions that had progressed over the past 24 hours despite treatment with cetirizine. The lesions began as small papules on his hands and forearms, developed into blisters on his left shoulder, and later formed whip-like linear streaks on his trunk, back, neck, scalp, and face. The lesions were not itchy and did not affect the palms or mucous membranes. The patient had no allergies, recent infections, medication changes, or new exposures to chemicals, detergents, or foods. Laboratory tests showed mild hypereosinophilia—a dermatological examination led to the suspicion of shiitake-induced flagellate dermatitis. Upon further questioning, the patient reported consuming undercooked shiitake mushrooms 2 days before the onset of the rash. The patient was treated with antihistamines and topical corticosteroids, leading to complete resolution of the lesions.

Discussion: Shiitake-induced flagellate dermatitis is a rare but increasingly recognized condition associated with consuming raw or undercooked shiitake mushrooms (Lentinula edodes).(1) Its characteristic whiplash-like erythematous papules are pathognomonic, and the condition often resolves spontaneously within days to weeks. In some cases, the rash can reappear with repeated consumption of shiitake mushrooms.(2) The cause of the dermatitis is thought to be a hypersensitivity reaction to lentinan, a heat-labile polysaccharide found in shiitake mushrooms. The Koebner phenomenon, triggered by scratching, may also play a role in the linear distribution of the lesions.(3) Flagellate dermatitis has also been associated with chemotherapy agents, such as bleomycin, systemic diseases like dermatomyositis, Adult-Onset Still's Disease, and systemic-onset juvenile idiopathic arthritis. A few cases of flagellate dermatitis have been reported in association with parvovirus B-19 infection, Chikungunya fever, and Mycoplasma pneumoniae. Although the context can infer the cause, it is imperative to systematically look for fungal consumption in patients with this type of lesion.



P197

Shock due to a severe metformin-associated lactic acidosis during Ramadan

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Learning objectives: To be familiar with the common antidiabetic medications, their combination-preparations, dosages and contraindications. To raise the awareness of potential complications in patients from diverse sociocultural backgrounds in an increasingly multicultural society.

Case: The 69-year-old patient's referral to the emergency department by the rescue services occurred because of hypotension, bradycardia, tachypnea and fluctuating vigilance. There had been a deterioration in general condition for 3 days, with nausea and vomiting since the previous day. The patient, who originated from Kosovo, was celebrating Ramadan and therefore has been fasting for some days. From his previous medical history, coronary heart disease, hypertension and type II diabetes mellitus were known. His ongoing medication included, in addition to an antiplatelet agent, a statin, an ACE-inhibitor, 2x 1000mg of metformin and a combination preparation of sitagliptin and metformin (Janumet®) at 2x 10/1000mg.

We objectified a severe acute kidney injury KDIGO grade III as well as a severe lactic acidosis with a pH of6.59 and a lactate level of 17.2 mmol/l. A computed tomography (CT) scan of the thorax and abdomen showed no acute pulmonary, abdominal or vascular pathologies. Due to the vasoplegic effect of lactic acidosis, intensive volume substitution and high doses of catecholamines (norepinephrine up to 200 µg/min, epinephrine up to 10 µg/min) and other antihypotensive agents such as Empressin up to 0.04 IE were necessary. Additionally, in the case of respiratory exhaustion and decreasing vigilance, intubation and mechanical ventilation were necessary. The patient was then transferred to the tertiary care center for further treatment. There, a metformin level of 33.4 mg/l was measured (therapeutic range 0.1-0.3 mg/l, toxic >5 mg/l). Hemodialysis was used to reduce the metformin level and stabilize the circulation.

Discussion: We witnessed a striking example of the rare but potentially fatal metformin-associated lactic acidosis. The overdose of metformin which probably was given for some time, became clinically evident during Ramadan, when presumably reduced food and fluid intake led to further deterioration of the kidney function. Whether this severe course would have occurred under adequate dosing of metformin cannot be answered. However, this case powerfully illustrates the sociocultural challenges in clinical medicine.

P198

Spermatic Vein Thrombosis after Vasectomy: A Rare Cause of Inguinal Pain

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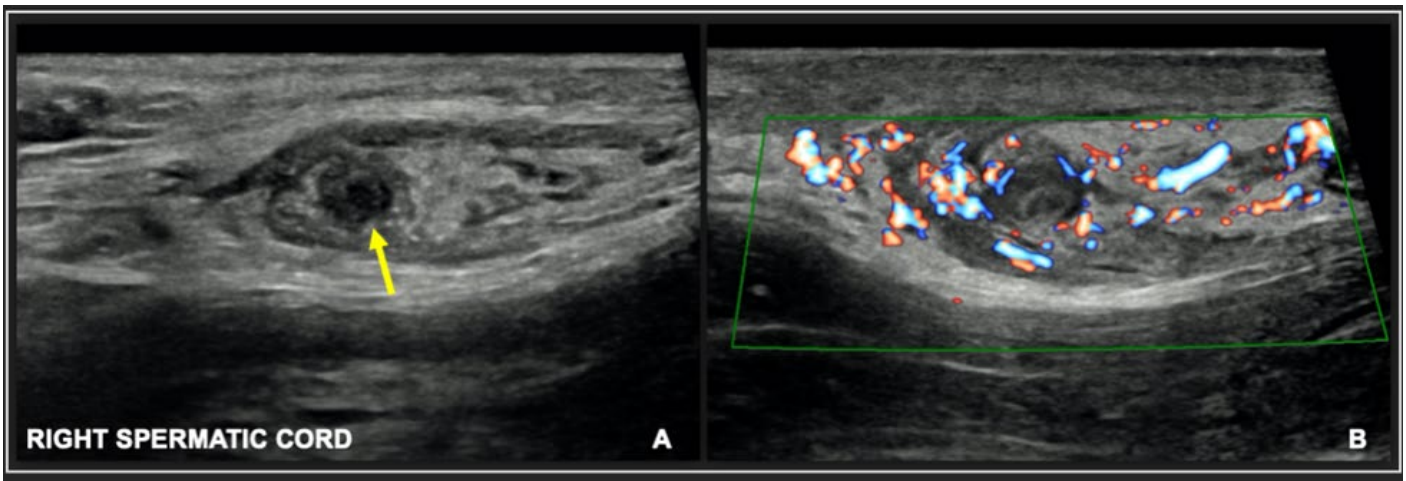
Learning objectives: To recognize spermatic vein thrombosis as a potential cause of acute inguinal or testicular pain following urological surgery.

To differentiate spermatic vein thrombosis from other common etiologies, such as incarcerated inguinal hernia, to ensure timely and appropriate management.

Case: A 50-year-old man presented with severe right inguinal and testicular pain that started after an intense weightlifting session. Six weeks prior, he had undergone a testicular-approach vasectomy. Examination revealed a tender, partially non-reducible inguinoscrotal swelling, decreased bowel sounds, and no fever. Laboratory tests showed mild leukocytosis (12.7×10^9/L) and normal C-reactive protein. Arterial blood gas was normal (lactate 0.9 mmol/L). Testicular ultrasound demonstrated a swollen spermatic cord with findings consistent with thrombosis of the right spermatic vein, but preserved intratesticular vascularization. Based on these findings, enoxaparin (1 mg/kg twice daily) was initiated for one month, combined with nonsteroidal anti-inflammatory drugs. At one-month follow-up, the patient reported complete resolution of pain and swelling. He had resumed sexual activity without pain and had no urinary complaints. A repeat ultrasound showed normal-sized, homogeneous testicles with fully patent veins bilaterally, suggesting resolution of the spermatic vein thrombosis. Given the favorable evolution, no further angiological or urological follow-up was deemed necessary and enoxaparin was discontinued.

Discussion: Spermatic vein thrombosis is an uncommon yet significant complication following vasectomy and is frequently mistaken for an incarcerated inguinal hernia due to overlapping clinical features. Prompt diagnosis relies on a thorough history, physical examination, and confirmatory imaging such as Doppler ultrasound. In equivocal cases, computed tomography can offer a detailed view of the thrombus and help identify alternative causes, including early malignancy. Currently, there are no established guidelines for the management of spermatic vein thrombosis. Many authors advocate a conservative strategy as first-line therapy, which may include analgesics and anti-inflammatory drugs until symptom resolution. Some recommend 30 days of heparin, and rapid relief of symptoms using apixaban has also been reported. Heightened awareness of this rare entity can lead to improved patient outcomes through targeted therapy and close follow-up.



Grey scale ultrasonography showing an enlarged edematous spermatic cord, a non-compressible right spermatic vein (yellow arrow) with an increased diameter and an echogenic thrombus (A) and no flow in Doppler mode (B). No collection was present in the spermatic cord.

P199

Successful conservative management of Complete Pneumothorax with Mediastinal Shift: A Case Report

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Learning objective: Can we conservatively treat a complete primary spontaneous pneumothorax with mediastinal shift?

Case: A 34-years-old men with no past medical history presented to the emergency department for sudden chest pain and dyspnea. On physical examination, he was afebrile, normotensive (120/90 mmHg) with normal heart rate (97 beats/minute) and a pulse oxygen saturation of 94% on room air. The Chest X-ray revealed a complete right-sided pneumothorax with mediastinal shift (Figure 1). A chest drain was offered to the patient, who refused interventional care. The patient was judged having his complete capacity of discernment and he was discharged to home with scheduled follow-up. Follow-up X-rays showed a progressive, spontaneous re-expansion of the affected lung.

Discussion: Primary spontaneous pneumothorax (PSP) is a common condition primarily affecting young men, characterized by the presence of air in the pleural cavity without underlying trauma or respiratory pathology. Diagnosis relies on chest radiography, lung ultrasonography or thoracic CT-scan. Complete pneumothorax is defined by a complete separation along the axillary line. More than 2 cm displacement at the hilum defines a moderate to large pneumothorax. The management of complete PSP has long been debated, but recent studies have provided new insight. Three main approaches are currently considered for stable patients without respiratory distress: Conservative treatment with analgesics, needle aspiration and intercostal chest tube. A recent randomized controlled trial compared these approaches, demonstrating that conservative management is non-inferior to interventional management, with a lower risk of serious adverse events. To our knowledge, this is the first report of PSP with mediastinal shift treated successfully with conservative approach.

P200

Sydenham's Chorea in a female Adolescent: A Case Report

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Learning objective: To identify Sydenham's Chorea as a differential diagnosis in children and young adults presenting with choreiform movements

Case: A 17-year-old female presented with involuntary choreiform movements of the extremities, tongue, facial dyskinesia, dysarthria, and intermittent oculomotor movements, worsening over the past two months. She also exhibited regressive behavioral changes. Five weeks prior, she underwent wisdom tooth extraction complicated by a local infection, treated with Amoxicillin/Clavulanate. On examination, she showed uncontrollable choreiform movements, hyperreflexia, and restlessness. Neurological investigations, including lumbar puncture, were normal. Antistreptolysin O (ASLO) and Antistreptodornase were mildly elevated. Both antineuronal antibodies in blood and cerebrospinal fluid were negative. Magnetic Resonance Imaging (MRI) revealed multiple diffusion restrictions in the white matter of the fronto-parietal regions. Given the history of a possible streptococcal infection and clinical features, Sydenham's Chorea (SC) was suspected. She was treated with high-dose intravenous corticosteroids for five days, followed by intravenous immunoglobulins for five days after limited improvement. Symptoms gradually resolved, and within three months, the patient fully recovered with Tiaprid (dopamine antagonist).

Discussion: SC is a rare post-streptococcal movement disorder, most common in children (5–15 years) and often associated with rheumatic fever. It presents with involuntary movements, hyperreflexia, and neuropsychiatric symptoms due to autoimmune basal ganglia dysfunction. SC is now less common due to improved healthcare, with most cases being post-infectious. Diagnosis is challenging as no definitive tests exist, and an elevated ASLO titer lacks specificity. Differential diagnoses, such

as Pediatric Autoimmune Neuropsychiatric Disorders Associated with Streptococcal Infections (PANDAS), should be considered, particularly with personality changes. The prognosis is generally good, with most patients recovering within months. This case is notable for the patient's atypical age and delayed symptom onset. The microinfarcts observed in her MRI have not been previously reported in SC.

Biomarker	Result	Reference range
CRP	7	<5mg/l
Leucocytes	6.6	4.2 – 10.8 G/l
TSH	0.38	0.27 – 4.20 mU/l
Rapid Immunoassay Group A Streprococcal Antigen	negative	negative
Antistreptodornase titre	**671 U/ml**	<200 U/ml
Antineuronal Antibody	negative	negative
Antineuronal Antibody (liquor)	negative	negative

Tab. 1 Laboratory findings indicating exposure to streptococcal infection

P201

The danger of drinking tea: a case report

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Learning objective: Hypokaliämia is a rare but life threatening cause of paralysis. Differential diagnosis is broad, so vigorious and rapid assessment is of utmost importance. Taking a precise medical history is often the essential key for diagnosis.

Case: A 33-year-old male was carried to the emergency ward by his brothers, since the muscle soreness he experienced the evening before the presentation had turned into paralysis of his extremities. The patient was otherwise healthy and did not take any medication but had a history of consuming 1–2 g marijuana daily. On admission, clinical examination showed proximally accentuated muscle weakness and slightly reduced deep tendon reflexes with no other pathologic findings in the neurological examination. The cardiac, pulmonary and abdominal examination did not show any abnormalities and his vital signs were normal. Blood test revealed low serum potassium levels of 2.0 mmol/l. The electrocardiogram showed flattened T-waves, detection of U-waves and TU-fusion. Thorough interview disclosed the cause of the hypokalaemia: the patient consumed 1-2 liters of tea containing liquorice root leading to pseudohyperaldosteronism inducing the electrolyte disorder. The patient received intravenous potassium and magnesium replacement, and his symptoms resolved entirely shortly after.

Discussion: The liquorice root contains glycyrrhizin, which is converted to glycyrrhizic acid in the intestine. Glycyrrhizic acid then blocks 11β-hydroxysteroid dehydrogenase 2, an enzyme essential to break down hormone-active cortisol into its inactive form cortisone. Overconsumption of liquorice therefore leads to an increased level of cortisol, which, in higher concentrations, acts similarly to aldosterone on mineralocorticoid receptors. This usually leads to fluid retention, hypertension and hypokalaemia. In this case, only hypokalaemia was detectable. The low potassium level leads to hyperpolarisation of the cell membrane therefore inhibiting neuromuscular transmission. Moderate intake of liquorice generally does not impose any danger. In this case, though, the patient increased the risk of developing pseudohyperaldosteronism by not only drinking up to 2 litres of liquorice tea a day but also letting the tea bags seep for hours and squeezing them thoroughly before consumption.

P202

The Intersection of TSS and DRESS: Diagnostic Complexity in a Rare Clinical Presentation

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Learning objectives:

1. Recognize the clinical presentation and diagnostic challenges of generalized exanthema with systemic symptoms.
2. Differentiate between Drug Reaction with Eosinophilia and Systemic Symptoms (DRESS) and toxic shock syndrome (TSS).
3. Highlight the importance of multidisciplinary approaches in managing rare and complex cases.

Case presentation: An 18-year-old female with no significant past medical history presented with fever and a pruritic generalized rash sparing the face, following gastrointestinal symptoms after consuming raw fish. Additional symptoms included odynodysphagia and fatigue. The patient had taken NSAIDs for fever, and pristinamycin was initiated the day before admission following a primary care consultation. On examination, she exhibited a diffuse erythematous rash and pharyngitis without hypotension or shock. Laboratory findings revealed lymphopenia, mild eosinophilia, elevated inflammatory markers, mild renal dysfunction, and discrete hepatic enzyme elevation. Infectious workup excluded acute infections, including EBV, CMV, HHV-6, and other viral and bacterial pathogens. A throat swab identified methicillin-sensitive Staphylococcus aureus (MSSA) carrying the TSST-1 toxin gene. By day 4, desquamation in the chest area was noted. Differential diagnoses included DRESS syndrome due to temporal NSAID use, TSS, and para-viral exanthema. The patient improved spontaneously without specific treatment and was discharged with plans for outpatient follow-up, including TCR Vβ repertoire analysis to confirm TSS.

Discussion: This case illustrates the diagnostic complexity of febrile exanthema with systemic inflammation. DRESS and TSS share overlapping features, yet their pathophysiology and diagnostic criteria differ. TSS is based on clinical features and the presence of toxin-producing S. aureus, while DRESS requires hallmark findings like eosinophilia, lymphadenopathy, and systemic organ dysfunction. The TCR repertoire analysis revealed an increased γδ CD3+ lymphocyte population but did not confirm TSS. The conflicting role of γδ CD3+ lymphocytes in sepsis

adds complexity, as they are linked to both protective effects in sepsis[1] and eosinophilia-mediated allergic reactions[2]. This case emphasizes the importance of multidisciplinary collaboration and advanced diagnostics in rare and ambiguous presentations. Vigilance and tailored follow-up strategies are crucial to ensuring optimal outcomes in such complex cases.

P203

The Mystery of Eosinophilia: A Rare Case of Toxocariasis with Cardiac Involvement

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Learning objectives: To recognize a case of cardiac toxocariasis in a patient presenting with thoracic discomfort, elevated troponin levels, and marked eosinophilia.

Case: A 46-year-old Swiss female with chronic kidney disease due to recurrent pyelonephritis presented to the emergency department with mild chest pain, which started a few hours earlier, along with fatigue over the past week. She denied any further symptoms or being on any regular medication. Laboratory findings revealed marked eosinophilia (11.3 G/L) and elevated hs-troponin I levels (9000 ng/l). ECG, transthoracic echocardiogram, cardiac MRI and coronary angiography were unremarkable, particularly without signs of peri-/myocarditis, vasculitis or coronary artery disease. A bone marrow biopsy revealed a marked increase in eosinophilic granulocytes compatible with a hypereosinophilic syndrome. Due to the persistent troponin elevation and suspected organ damage, cyclophosphamide and high-dose glucocorticoids were initiated in analogy to the treatment of an eosinophilic granulomatosis with polyangiitis. A week later, the serological work-up for infectious causes came back positive for Toxocara canis (EIA 2.88 OD, cutoff 0.5 OD), suggesting cardiac toxocariasis. Therapy was switched to a 4-week course of albendazole and glucocorticoids, resulting in complete resolution of symptoms, eosinophilia, and troponin levels. Due to the high clinical suspicion, favorable treatment response, and the risks of complications and sampling error for the procedure, a heart biopsy was avoided.

Discussion: Toxocariasis is most prevalent in tropical and subtropical regions, but occurs globally. Most infections are asymptomatic, but the eosinophilic inflammation caused by larval migration can lead to severe organ damage, including rare but potentially life-threatening cardiac manifestations, such as peri-/myocarditis, arrhythmias, or heart failure. Diagnosis is challenging, with key findings including eosinophilia, elevated IgE levels, and positive Toxocara serology. Cardiac imaging may reveal inflammation, and biopsy can confirm eosinophilic myocarditis, but is rarely performed in clinical practice. Treatment with corticosteroids (to suppress eosinophilic inflammation) and albendazole (against Toxocara) is effective, but early recognition is essential to prevent irreversible damage. This highlights the importance of considering Toxocara infection in patients with unexplained cardiac symptoms and eosinophilia.

P204

Thinking around the mosquito corner: Leptospirosis as a souvenir from Colombia

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Learning objectives: Travelers returning from tropical regions presenting with fever are a diagnostic challenge. In addition to classic tropical diseases such as malaria, dengue fever, and typhoid fever, numerous other infections can be potential causes. Activities involving water contact may indicate a leptospirosis infection, which is transmitted through contact with water, soil, or food contaminated with the urine of infected animals.

Case: We present a 46-year-old male referred by his general practitioner with sudden onset of malaise, high fever, muscle pain, and headache, persisting for six days. Symptoms began six days after his return from a two-week trip to Colombia, where he went trekking in remote areas of the Lost City and Tayrona National Park, including bathing in rivers. During the trip he was healthy. On admission, he had fever (39.1°C) and reduced general condition. Hematogram showed normal leukocyte count of 8,600/µL, with 85% neutrophils, including 20% band neutrophils, and thrombocytopenia of 107,000/µL. The CRP was 226 mg/L, the GPT was elevated to 77 U/L, and the GFR slightly reduced with 65 mL/min. Malaria and HIV tests were negative. Empiric ceftriaxone treatment led to steady improvement, with normalization of blood count and CRP dropping to 28 mg/L within six days, though transaminase levels rose to 423 U/L. The patient was discharged after one week and shortly thereafter serology from admission day revealed a marginally elevated IgM for Leptospira interrogans (16 U/L, normal <15 U/L) with negative IgG. Eight days after hospital discharge, the patient returned for follow-up in an asymptomatic condition. At that time, CRP had normalized, but GPT remained elevated at 321 U/L, and IgM for Leptospira interrogans had increased to 97 U/L. Six weeks later GPT was still elevated at 116 U/L, and IgM for Leptospira interrogans remained positive at 32 U/L. IgG seroconversion was not observed up to two months after illness onset.

Discussion: Our patient exhibited the typical presentation of leptospirosis, characterized by the sudden onset of high fever, malaise, hepatitis and renal failure following potential water exposure. The significant increase in Leptospira interrogans IgM over time supports a recently acquired infection. In a minority of patients, IgG antibody formation fails, in our patient, antibiotic treatment may have inhibited its production. Early PCR on blood or urine could have served as an alternative diagnostic tool.

P205

Thinking around the stroke corner: How Cabergoline cured a supposed recurrent transient ischaemic attack

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Learning objectives: Prolactinoma is the most prevalent pituitary tumor and is benign in the vast majority of cases. However, in rare instances, a metastasizing manifestation is possible.

Case: A 41-year-old male patient while laying bricks in a bent-forward position, he suddenly experienced a cramp-like sensation in his right hand, followed by a rising tingling sensation in his right arm, right shoulder and finally the right side of his face, accompanied by a drooping right corner of his mouth and mild dysarthria. The symptoms disappeared within 5 minutes. Clinically were no focal neurological symptoms, corresponding to a National Institutes of Health Stroke Scale Score (NIHSS score) of 0 points. A radiological stroke work-up showed no evidence of vascular desease, but did reveal a large infiltrating mass on the pituitary gland and a potentially malignant leptomeningeal enhancement in the left central sulcus. A lumbar puncture revealed no significant abnormalities. An electroencephalogram (EEG) was performed for possible epilepsy, without corresponding findings. The radiological diagnosis of a macroprolactinoma was confirmed by massively elevated prolactin (9700 ug/l) levels in the blood and treatment with Cabergoline was initiated. Despite a normal EEG, Lamotrigin was prescribed, as structural epilepsy could not be completely ruled out. Two weeks later, the symptoms recurred. The subsequent magnetic resonance imaging (MRI) showed an increase in the central sulcus, whereas the macroprolactinoma continued to decrease in size. Positron emission tomography (PET) showed no evidence of a primary tumor, thus, a brain biopsy was recommended. Further MRIs were performed for biopsy planning, which showed that not only the macroprolactinoma but also the lesion on the central sulcus had reduced in size. Thereupon, the biopsy was not performed, which proved to be the absolutely correct decision, as the patient remained symptom-free and both cerebral findings were continuously size-regressive.

Discussion: Multifocal Prolactinoma are very seldom, the exact incidence is not well established. However, pituitary carcinomas represent 0.1-0.2% of all adenohypophyseal tumors, most of them are either prolactinomas or ACTH-positive adenomas. Cases such as this demonstrate the importance of modern imaging. Pathophysiologically, the increased intracranial pressure due to posture and exertion combined with a large tumor mass may be the cause of the neurological symptoms.

P206

"Toxic Shock" due to Self-medication with Amlodipine: A Case Report

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Learning objectives: Prevalence of adverse drug reactions (ADRs) due to self-medication range from 1.3% in the general population (1) to 26.7% in the elderly (2). Intoxication with calcium channel blockers (CCB) like amlodipine is a leading cause of cardiovascular medication overdose (3). CCB intoxication can result in shock due to peripheral vasodilation and bradyarrhythmia and is associated with high mortality rates of almost 50% (4). Self-medication can also occur in an in-patient setting. If intoxication is suspected, liquid chromatography/mass spectrometry (LC-MS) is helpful to identify the causative agent.

Case: A 58-year-old male was referred to our hospital due to persistent hypotension. His medical history was remarkable for hypertensive cardiomyopathy, type 2 diabetes, obesity (WHO grade 1), obstructive sleep apnea syndrome and shock probably due to increased intake of antihypertensive drugs 3 weeks prior. His current medical treatment included metformin, insulin glargine, rosuvastatin/ezetimibe, levothyroxine, mirtazapine and pregabalin. Symptoms consisted of weakness, dizziness, and nausea. Initial blood pressure was 92/52 mmHg, heart rate was 71 beats per minute and oxygen saturation of 92% breathing ambient air. Clinical examination revealed pronounced jugular venous distension. Four days after admission the patient presented with new onset of sinus bradycardia, increasing hypotension and peripheral edema. Eventually, he developed shock with acute kidney injury grade III and was transferred to the intensive care unit. During hospitalization the patient behaved conspicuously regarding his medication (e.g. hiding pills) and he was convinced that pharmacological treatment was crucial for his well-being. After detection of amlodipine in blood by LC-MS amlodipine concentration in serum of 80.9 ng/mL was confirmed, although it had been officially discontinued for at least 30 days. Treatment with vasopressors and positive inotropic agents as well as supervised medication use lead to a stabilization.

Discussion: This case highlights a severe ADR due to self-medication in an in-patient setting. Diagnosis of CCB intoxication might be challenging, however, when diagnostic or therapeutic approaches fail to explain the clinical picture of hypotension and the patient demonstrates a divergent understanding of his illness or medication, intoxication should be considered. LC-MS is a valuable tool for identifying unknown substances if intoxication is suspected.

P207

Tuberculous Tenosynovitis with Rice Bodies in a Non-Endemic Area: a case report

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Learning objectives:

Rice body arthritis or tenosynovitis is a rare condition characterized by the deposition of rice-like fibrinous structures in the joint fluid or tendon sheath

The differential diagnosis includes rheumatologic and infectious causes, as well as microtrauma or idiopathic

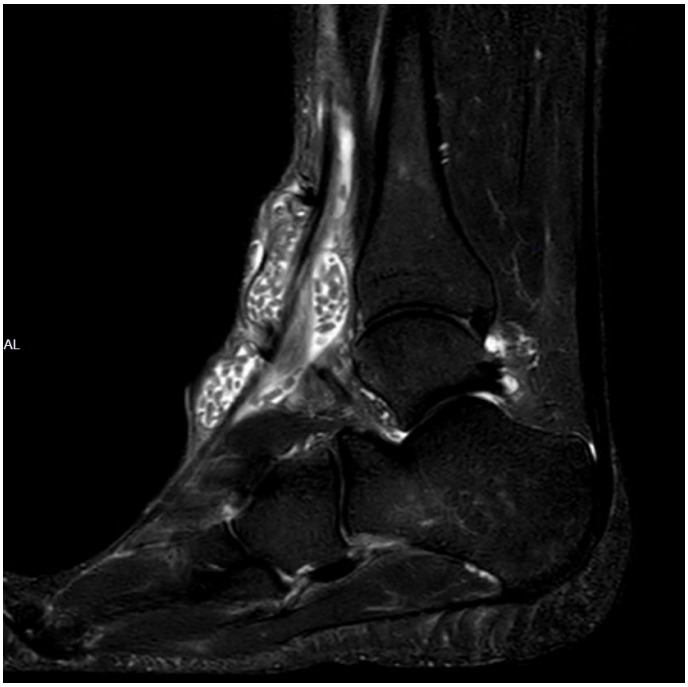
Rice body synovitis can be a rare extrapulmonary manifestation of tuberculosis

In our case report we describe an isolated rice body tenosynovitis of the tibialis anterior and extensor digitorum longus tendons. We point out that a tuberculous etiology should be considered even in non-endemic regions and in the absence of known exposure history

Case report: A 49-year-old immunocompent patient presented with a chronically progressive, atraumatic and painless swelling of the left ankle that had persisted for one year. MRI imaging

revealed a tenosynovitis of the tibialis anterior and extensor digitorum longus tendons with numerous rice bodies (fig. 1). The patient's medical history was unremarkable for underlying infectious or rheumatologic diseases. Mycobacterium tuberculosis was detected in the synovial fluid obtained through tendon sheath aspiration. The diagnosis of tuberculous rice body tenosynovitis was established. Following surgery (fig. 2), an appropriate tuberculosis treatment regimen was administered for a total duration of nine months. One year after therapy, the patient remained relapse-free and completely asymptomatic. No exposure and no route of transmission of the disease to the patient was identified.

Discussion: Rice body arthritis or tenosynovitis is a rare condition with rice-like fibrinous structures in the joint fluid or tendon sheath. Clinically, it presents with pain, swelling and restricted movement. The characteristic rice bodies can be detected using ultrasound and MRI imaging. The exact pathophysiology remains unclear. It is believed that chronic inflammation and synovial hypertrophy lead to fibrinous deposits, which eventually encapsulate due to microinfarctions. Possible underlying causes include chronic inflammatory conditions as well as recurrent microtraumas. Depending on the prevalence of the diseases and their endemic region, infectious diseases are the main causes of rice body tenosynovitis. A thorough rheumatologic and infectious disease workup is essential for confirming the diagnosis. Treatment is determined by the underlying etiology and includes both surgical intervention and targeted medical therapy.



P208

Unmasking Tubulointerstitial Nephritis and Uveitis Syndrome: A Rare Cause of Kidney Failure in an Elderly Patient

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Learning objectives:

Most cases of tubulointerstitial nephritis and uveitis syndrome (TINU syndrome) occur in adolescents and young women, but have also been reported in older adults

Consider TINU syndrome as a rare cause of tubulointerstitial nephritis and acute kidney failure

Establish the diagnosis by recognizing the association between uveitis and tubulointerstitial nephritis in the absence of other systemic diseases

Timely diagnosis by early kidney biopsy is essential to establish diagnosis and facilitate adequate treatment

Case: A 66-year-old woman was referred for subacute kidney failure, presenting with periumbilical and epigastric pain, weight loss, nausea and fatigue. One week prior to presentation, she had been diagnosed with uveitis. Clinical examination revealed epigastric tenderness. Laboratory results showed worsening kidney function, first noticed four weeks earlier (creatinine 314 µmol/l, eGFR 13 ml/min/1,73 m²), tubular proteinuria of 660 mg/d, and normoglycemic glucosuria, suggesting Fanconi syndrome. Autoantibody testing revealed a positive antinuclear antibody (ANA) titer of 1:320, but specific autoantibodies were negative. Renal biopsy confirmed tubulointerstitial nephritis (TIN). Considering the preceding diagnosis of uveitis and after excluding other causes of TIN, the diagnosis of TINU syndrome was established. Uveitis had already resolved under topical steroid therapy. Following the diagnosis of TIN, prednisolone (1 mg/kg) was started, in combination with mycophenolate mofetil (2x500 mg/d) as steroid sparing agent, and was quickly tapered. At follow-up, kidney function had markedly improved and fanconi syndrome resolved.

Discussion: TINU syndrome is a rare condition, characterized by tubulointerstitial nephritis in temporal association with uveitis, and can be diagnosed after excluding other causes of TIN. It typically affects young women, although, as in this case, it can present in older patients. The pathophysiology is thought to be immune-mediated, but it remains unclear and specific laboratory markers are lacking. Differentiating TINU from other conditions such as sarcoidosis or Sjögren's disease can be challenging, as these share common features. In our patient, there was no evidence of other systemic diseases. Immunosuppressive therapy, commonly with steroids, is effective in most cases, and prognosis is generally favorable. Mycophenolate seems to be effective in treating TINU syndrome.

P209

Vaccine breakthrough infection with tick-borne encephalitis virus

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Learning objective: In cases of encephalitis symptoms and regular exposure to ticks in tick-borne encephalitis (TBE) risk areas (throughout Switzerland except in the Ticino) a potential TBE virus infection due to a vaccine breakthrough should still be considered, even with full immunization against the TBE virus, although Lyme disease is the more frequent infection.

Case: A 62-year-old man presented to our emergency department with headaches, confusion and high fever. He had a history of migraine with aura and Lyme disease 1-2 years earlier without neurological sequelae. The patient was an orienteer, regularly exposed to ticks in TBE risk areas, and had received primary immunization and booster shots (4 years ago) against TBE. Laboratory tests showed lymphopenia and pleocytosis in the cerebrospinal fluid (CSF), with significantly elevated total protein (Table 1). Serum antibodies against Borrelia burgdorferi immunoglobulin M and G (including a positive IgM and IgG immunoblot result), TBE (IgM and IgG) and the West Nile virus (IgG) were detected (Table 2). Initially, neuroborreliosis was suspected based on his current TBE vaccination status despite a lack of intrathecal antibody response, and treatment with doxycycline was started. Following some improvement in symptoms and discharge from the hospital, the patient presented again two weeks after the initial consultation due to the sudden onset of aphasia. Consequently, a secondary suspicion of TBE led to a second lumbar puncture, which showed a significantly elevated intrathecal production of TBE specific antibodies. The diagnosis of acute TBE due to vaccine breakthrough was confirmed with a pathological TBE antibody index (IgG) of 15.36 (normal <1.5, Table 2) and a remarkable increase in TBE IgM and IgG serum antibody concentrations.

Discussion: Both TBE and neuroborreliosis may present with encephalitis, though encephalitis is less common in neuroborreliosis than in TBE. Although the typical erythema migrans, a pathognomonic sign of early Lyme disease, was absent in the present patient, neuroborreliosis was initially suspected and treated. Vaccine breakthrough infections in fully immunized individuals have been described in 1.7–7.4% of TBE cases. The serological testing also showed positive results for antibodies against the West Nile virus, which, given the unremarkable travel history, is more likely a serological cross-reaction within the flavivirus family, to which TBE and West Nile viruses belong.

Sample	Parameter	Value	Reference Range
Blood	CRP	24 mg/l	< 5
	Leukocytes	11'430/µl	3'000 – 9'600
	Neutrophils	10'440/µl	1'400 – 8'000
	Lymphocytes	580/µl	1'070 – 3'120
CSF	Cell count	244/µl	< 5
	Polymorphonuclear cells	186/µl	
	Mononuclear cells	58/µl	
	Lactate	2.7 mmol/l	< 2.1
	Total protein	845 mg/l	< 450

Table 1 Blood and CSF Examination

	Time	Serum	CSF	Antibody Index
TBE	Week 0	Positive (IgM, 1.9 index) Positive (IgG, 10'509 U/ml)	Positive (IgM) Positive (IgG)	N/A
	Week 3	Positive (IgM, 5513 index) Positive (IgG, 1'994'576 U/ml)	Positive (IgM) Positive (IgG)	15.36 (IgG)
B. burgdorferi (ELISA)	Week 0	Positive (IgM) Positive (IgG)	Positive (IgM) Positive (IgG)	0.8 (IgM) 1 (IgG)
	Week 3	Positive (IgM) Positive (IgG)	Positive (IgM) Positive (IgG)	0.27 (IgM) 0.7 (IgG)
West-Nile Virus	Week 3	Negative (IgM, 0.3 index) Positive (IgG, 2.4 index)	N/A	N/A

Table 2 Serology Tests

P210

Vanishing Bile Duct Syndrome as a Paraneoplastic Manifestation of Classical Hodgkin Lymphoma: Clinical Clues, Diagnostic Steps, and Therapeutic Hurdles

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Learning objectives:

- Explore the clinical presentation, diagnostic pathway, and management challenges of VBDS in context of malignancies.
- Recognize Vanishing Bile Duct Syndrome (VBDS) as a rare paraneoplastic manifestation of Hodgkin lymphoma (HL).

Case: A 41-year-old male presented with fatigue, pruritus, nausea, and rapidly progressive jaundice. Lab results showed cholestatic hepatitis with fast rising bilirubin. Autoimmune serology (IgG4, ANA, ANCA, SMA, LKM-1) and infectious workup (HIV, HBV, HCV, EBV, CMV) were negative. MRCP excluded extrahepatic obstruction. Subsequent liver biopsy confirmed intrahepatic bile duct loss consistent with VBDS. Transient elastography showed normal liver stiffness. Subsequent to suspect lymph nodes identified in MRCP, a PET-CT revealed metabolically active retroperitoneal lymphadenopathy without liver activity or supra-diaphragmatic involvement. Lymph node histology revealed lymphocyte-rich classical HL. Severe pruritus and cholestasis partially improved with high-dose corticosteroids, but bilirubin rebounded upon tapering. Symptomatic management with ursodeoxycholic acid, cholestyramine, and bezafibrate provided partial relief. Due to impaired bilirubin clearance, only reduced chemotherapy (cyclophosphamide, vincristine) could be administered. Additional steroid pulses showed no significant effect on bilirubin levels. Consequently, curative radiotherapy (ISRT with 18x2Gy) in addition to antibody therapy (Brentuximab) was prioritized, achieving a complete metabolic response of HL and significant bilirubin reduction. Despite this promising therapeutic success, close liver function monitoring continues, and further treatment depends on hepatic recovery.

Discussion: VBDS is a rare, often fatal paraneoplastic syndrome with a poorly understood pathogenesis, likely involving immune-mediated bile duct injury (1;2). It is linked to infections, ischemia, autoimmune diseases, drug reactions, and malignancy-related humoral factors, including HL (1;2). This case highlights the early detection and monitoring of cholestatic hepatitis, later confirmed as VBDS secondary to HL. Outcomes of VBDS in HL vary widely, from complete recovery to fatal progression mostly due to liver failure and sepsis. (1;2) To date, this patient has shown no permanent liver damage. Early recognition of VBDS in unexplained cholestatic liver diseases is vital. A multidisciplinary approach is essential to balance HL treatment and hepatic recovery.

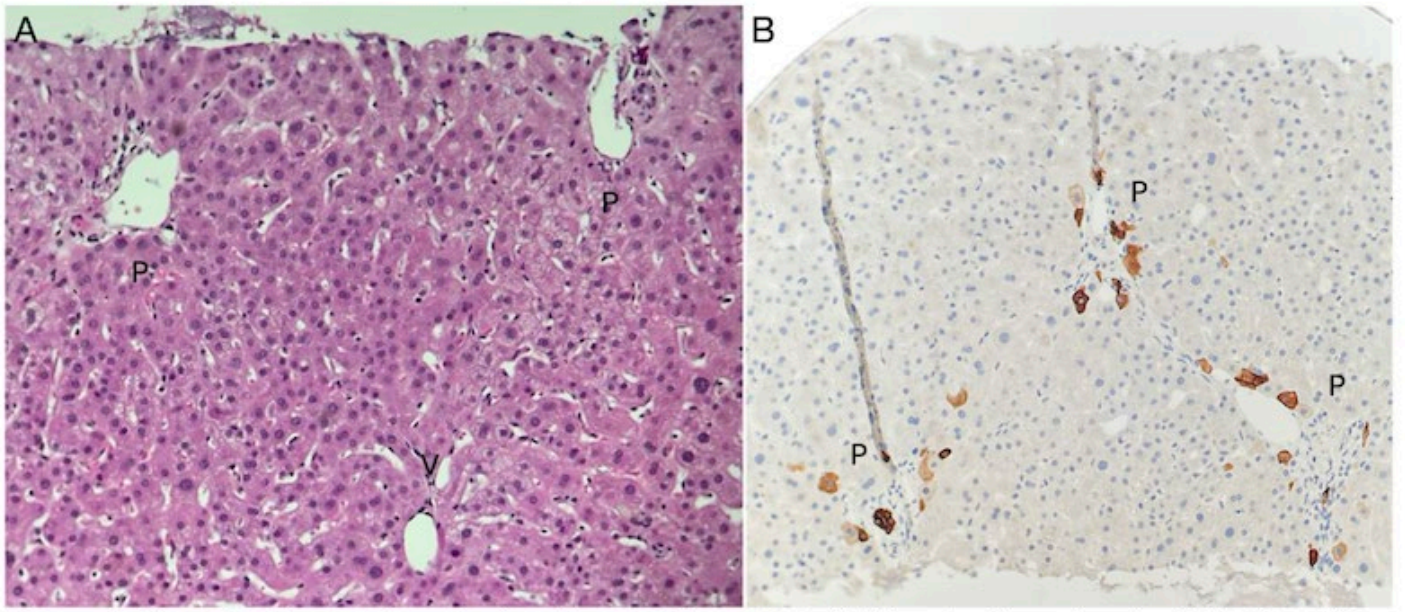
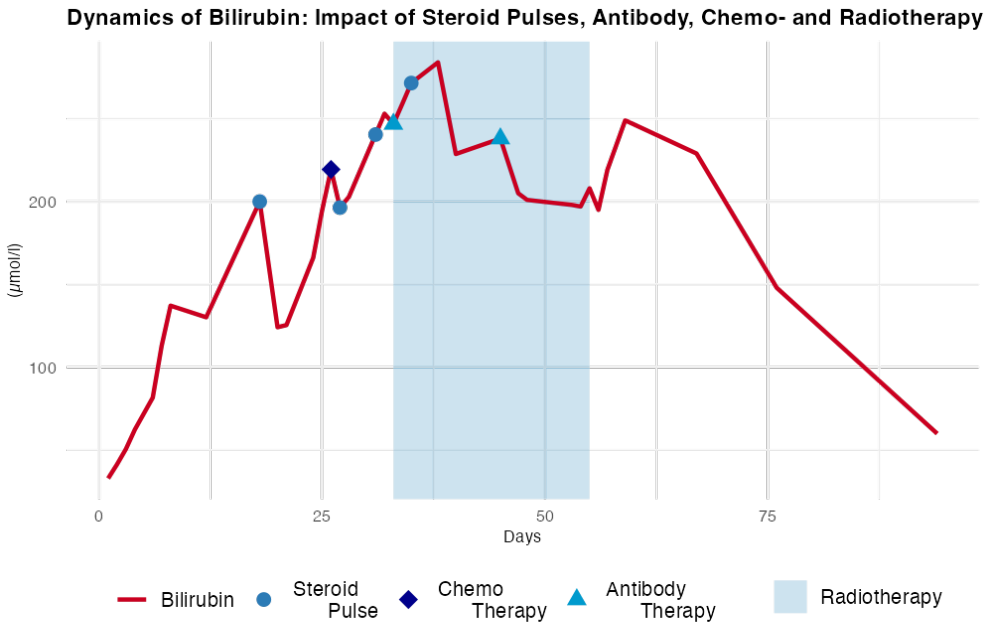


Figure 1: Histological images from the liver biopsy of the patient. (A) Hematoxylin and eosin (HE) stain of liver parenchyma showing two portal fields (P) and a central vein (V). One portal field exhibits a loss of ducts. (B) Immunohistochemistry stain for CK7 confirming the loss of ducts in two portal fields (top and right), with a remaining duct in another portal field (left), along with hepatocyte ductal metaplasia associated with chronic cholestasis.



Graph 1: bilirubin levels (µmol/L) over time in relation to treatment interventions, including steroid pulses (1g methylprednisolone or prednisolone with varying taper durations), reduced chemotherapy (cyclophosphamide, vincristine, adapted for impaired bilirubin clearance), antibody therapy (50mg Brentuximab targeting CD30), and radiotherapy (VMAT-ISRT:18x2Gy).

P211

Weakness and myalgia: A Case of Immune-Mediated Necrotizing Myopathy

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Learning objectives: Persistent myalgia after a viral infection should prompt consideration of myositis. Muscle strength assessment should include neck and trunk muscles. Early muscle biopsy – ideally before anti-inflammatory therapy – is key for subtype classification. CK normalization alone is insufficient to assess treatment response; clinical evaluation is essential. In corticosteroid-refractory IMNM, early escalation to stronger immunosuppressants is crucial.

Case report: A 67-year-old female presented with generalized weakness, dyspnea, and persistent myalgia three weeks after rhinosinusitis symptoms. She had returned from Tunisia two days before symptom onset without prior vaccinations. Medical history included smoking, cured breast cancer five years ago, a Warthin tumor, and a thyroid nodule. Examination revealed weakness in the neck extensors and proximal limb muscles (MRC 3–4), preserved distal strength, significant myalgia, and muscle swelling. CK levels were markedly elevated (peak: 5371 U/L), with moderate transaminase elevation but no systemic inflammation. A latent COVID-19 infection was detected. Myositis-specific antibodies were negative except for nonspecific ANA and anti-PL-12 antibodies. Electromyography showed myopathic changes, and MRI revealed pronounced edema in the left deltoid. Muscle biopsy confirmed IMNM with fiber necrosis and strong MHC-1 upregulation, though interpretation was limited by ongoing corticosteroid therapy. Malignancy and infection screenings were unremarkable. Initial oral corticosteroids led to transient improvement, but relapse required intravenous therapy, stabilizing CK levels without clinical benefit. The patient developed dysphagia, dysarthria, and organ involvement, with cardiac MRI revealing myocardial involvement and pulmonary function tests showing reduced inspiratory strength. Therapy was escalated to IVIG and mycophenolate mofetil. Supportive measures included analgesics, psychotropic medication, and structured rehabilitation. The patient has since shown gradual improvement.

Discussion: Myositis is a heterogeneous group of inflammatory muscle diseases. IMNM, increasingly recognized for its aggressive course, is associated with anti-SRP and anti-HMGCR antibodies, the latter frequently linked to statin use. If present, antibody titers often correlate with disease activity. Seronegative IMNM is more frequently associated with malignancies, warranting long-term cancer screening (1).

P212

Assessment of a Clinical Large Language Model for General Internal Medicine Queries

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Introduction: The evaluation of large language models (LLMs) in healthcare is crucial to assess their clinical reliability and safety. The aim of this study is to assess the performance of Meditron3-70B (open source medical LLM) across several axes as evaluated by general internal medicine professionals (GIM).

Methods: Between Sept-Dec 2024, GIM professionals from Lausanne University Hospital made a coordinated evaluation of Meditron3-70B on the MOOVE (Massive Open Online Validation and Evaluation) platform. Each participant created challenging queries and assessed the answers to both their own questions and a random selection from their colleagues. Responses were assessed emphasizing key challenges such as alignment with medical guidelines, logical reasoning, fairness, and harmlessness. Evaluation scores were assigned using a 5-point Likert scale (5 as best score, >3 rated as positive). Additionally, SG and FC conducted a semantic analysis of the dataset, working collaboratively to identify (1) the five most frequent medical topics addressed in the queries and (2) the primary focus of the queries.

Results: 16 GIM professionals (38% female) participated in the study: 6 attending physicians, 6 senior and 4 junior residents. They developed 225 original questions and performed 526 reviews, 96% of the query answers were evaluated by at least three participants. The LLM achieved a median score of 4/5 across all evaluation criteria. Percentage of positively rated responses was highest for communication (94%) and clarity (92%), while relevance and completeness (62%), and harmlessness (74%) represented areas for improvement. Semantic analysis revealed the five most frequently addressed medical topics were Internal Medicine (27% of the queries), Hematology (11%) and Pneumology (10%). Questions primarily focused on therapeutics (35%), diagnosis (30%) and "workup" (13%).

Conclusion: Preliminary results underscore LLM's potential to enhancing decision-making in GIM through coherent and clear responses. Still, improvements in relevance and harmlessness are required to support broader and safer clinical adoption. Low completeness was likely limited as the assessment was performed on single-turn conversation. Multiturn assessments could improve future versions. Feedback from these evaluations will be integrated into Meditron3-70B to further improve the model. This will help ensure better alignment with local and international medical guidelines, while limiting harmlessness.

P213

Chatbots in primary care medicine in 2025: the conflAnce chatbot

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Introduction: The rapid advancement of large language models (chatbots) has significantly contributed to their widespread adoption. However, their use in the medical and healthcare sectors remains limited due to concerns regarding sensitive data handling, and adherence to legal and regulatory frameworks. Chatbots could however prove beneficial in providing 24/7 access to information (if verified), thus decreasing the gap in information between physicians and patients and between two consultations.

Methods: The conflAnce chatbot, developed by the Geneva University Hospitals, provides general information in primary care medicine, and is mainly focused on the most frequently occuring chronic conditions. This provides accessible and simplified information to patients, and could potentially decrease their potential frustration or misdiagnosis while awaiting a visit with their primary care physicians. After having developed a first chatbot on post-covid[1], the conflAnce chatbot can help patients access verified information 24/7 for all the major chronic conditions, promoting patient empowerment and reducing misinformation. This conflAnce chatbot is based on the knowledge base of the Division of Primary Care Medicine at the Geneva University Hospitals (https://www.hug.ch/medecine-premier-recours/strategies-medecine-premier-recours) using a technique called retrieval-augmented-generation. This technique, along with specific guardrails, ensures that the chatbot remains within its scope and that the information provided is based on the established documents of the Division of Primary Care Medicine. These documents (>60 different conditions), encompass the most frequently encountered diseases in primary care and have been transformed into a simplified language for patients and the general population.

Results: As the chatbot is being launched, evaluating the matching rate (correct answer), the groundedness (metric evaluating if the answer originated from the knowledge base), the similarity or consistency in answers are all important metrics to consider. Additional elements to consider are the medical responsibility, legal and certification frameworks, led by a steering committee for the conflAnce project[2] .

Conclusion: Future results will show whether the chatbot has been useful for patients and healthcare professionals, and if such tools using artificial intelligence can help patients in their care pathway.

P214

Clinical Decision Support Systems: Optimizing Laboratory Workflow Efficiency

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Introduction: The unjustified repetition of laboratory tests, despite their critical role in medical diagnostics, leads to resource overuse, redundant testing, and unnecessary costs for healthcare systems. This practice overloads laboratories and exposes patients to repetitive examinations with potentially adverse consequences. To address this issue, we developed a feature integrated into the electronic health record (EHR) system that displays the date and the most recent result of a test at the time of prescription. To assess the impact of this development, we compared prescription volumes before and after its implementation.

Method: We conducted a retrospective study at CHUV to assess the impact of the new feature on the average number of laboratory tests prescribed per hospital stay, both before and after its implementation (introduced on March 8, 2023). Data were collected over a two-year period, from March 2022 to March 2024. A comparative analysis was conducted across various hospital departments and the types of laboratory tests prescribed. Hospital tests for hygiene and SARS-COV-2 were not included, nor were tests ordered on the day of the alert. Due to the non-normal distribution of analyses during hospital stays, we compared the two periods using non-parametric tests. Our focus was on internal medicine, and we compared the results to those from the rest of the hospital.

Results: In total, we analyzed more than 4 million (4,066,043) tests across all hospital departments. As with all clinical services, the internal medicine department experienced a slight decrease in laboratory test volume per stay after the implementation of the clinical decision support tool. Additionally, this significant reduction was observed in the categories Clinical Chemistry and Hematology, but not in the Microbiology category.

Conclusion: Our feature significantly reduced the number of laboratory tests prescribed and performed. Although it does not replace the teaching of best practices or the necessary efforts toward rationalization, this clinical decision tool represents a promising tool for enhancing the quality, safety, and efficiency of care.

Tab. 1 Comparison of the average test volumes measured over the length of stay before and after implementation in the internal medicine department

	Before the intervention (mean ± Std. dev)	After the intervention (mean ± Std. dev)	p-value (Wilcoxon)
All the hospital	30.73 ± 77.83	29.62 ± 75.51	0.000
Internal Medicine	65.52 ± 101.20	62.52 ± 91.12	0.011

Tab. 2. Comparison of the average test volume measured over the length of stay before and after implementation in the Internal Medicine Department, by category.

	Before the intervention (mean ± Std. dev)	After the intervention (mean ± Std. dev)	p-value (Wilcoxon)
Clinical Chemistry	42.02 ± 69.23	40.79 ± 66.67	0.019
Hematology	10.99 ± 19.11	10.47 ± 20.49	0.000
Microbiology	3.27 ± 5.29	3.29 ± 5.50	0.354

P216

Representing medical concepts with pictographs for doctor-patient communication

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Introduction: In healthcare, language barriers negatively affect the quality of care delivery as well as patient understanding and satisfaction. In this context, we have developed PictoDr, a French to pictographs translation system for doctor-patient dialogs. It translates utterances into sequences of UMLS (Unified Medical Language System) concepts which are then transposed into a language independent sequence of pictographs. In this study we focus on the understandability of illustrations of medical concepts, particularly 1) the impact of sequential representation with multiple pictographs, and 2) the influence of different cultural and linguistic backgrounds. We evaluate a set of pictographs with participants from China (CN) and the United Kingdom (UK).

Methods: The evaluation included 32 medical concepts (symptoms, diseases, therapies): 16 illustrated either by a single or by a sequence of pictographs (see Fig. 1), the remainder illustrated by a single pictograph. Evaluations were carried out in online forms with pictographs or sequences presented in a sentence context, e.g. “Do you have <PICTO>?”. Participants were asked to write the corresponding meaning in their own language. We recruited 10 participants through the Prolific crowdsourcing platform, requiring English as primary language, and 10 Chinese participants.

Results: Responses from participants were annotated as "incorrect", "correct" or "related meaning" (more specific or generic). Results are detailed in Table 1. Overall, the pictographs were easier to understand for the UK than for the CN participants (50% vs 37% correct). Regarding single vs sequences, UK participants favour single pictographs (54% vs 46% correct), whereas CN participants show no preference (both 36%). Responses annotated with “related meaning” represent one quarter of CN responses, suggesting that the pictographs may not be precise enough. Analysis of individual items shows that the same concepts were problematic for both participant groups, e.g. “tuberculosis”.

Conclusion: Results highlight the difficulty of illustrating medical concepts, although obtaining close to 2/3 "correct" or "related meaning" responses is promising. Further investigation with other participant groups is necessary to identify the causes of incorrect responses.

Figure 1. Examples of concepts (“stabbing pain”, “left shoulder pain”) illustrated by a sequence or single pictograph

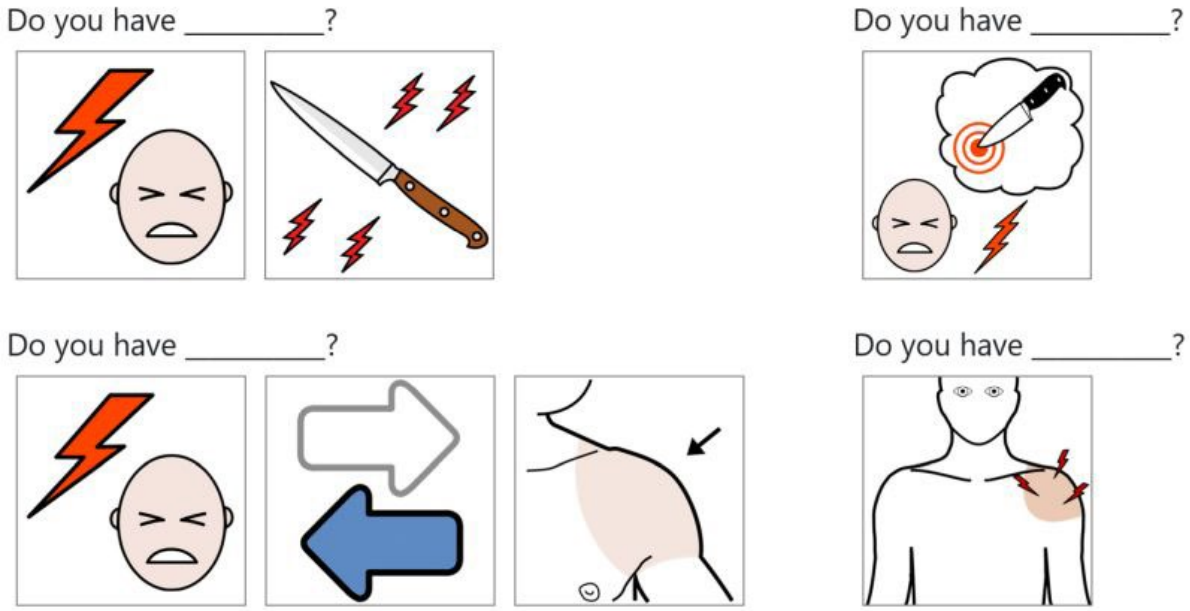

Table 1. Results of the evaluation for the two participant groups

			UK		CN	
		annotation	#	%	#	%
single vs sequence (2 x 16 items, 5 responses each)	single	incorrect	23	29%	34	43%
		correct	43	54%	29	36%
		related meaning	14	18%	17	21%
	sequence	incorrect	28	35%	30	38%
		correct	37	46%	29	36%
		related meaning	15	19%	21	26%
single (16 items, 10 responses each)		incorrect	55	34%	58	36%
		correct	81	51%	60	38%
		related meaning	24	15%	41	26%
combined (32 items, 10 responses each)		incorrect	106	33%	122	38%
		correct	161	50%	118	37%
		related meaning	53	17%	79	25%

P217

Telemedical care at home using telemonitoring for hypertensive patients with blood pressure fluctuations at home

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Introduction: Remote telemonitoring is becoming increasingly important in primary and secondary prevention. In combination with virtual communication options, hypertensive patients can be cared for at home and treated immediately in the event of changes in blood pressure values. The aim was to investigate the extent to which telemedical care in cooperation with the family doctor leads to a stabilization of blood pressure values and influences patient safety.

Methodology: From January to June 2023, the blood pressure values of 20 hypertensive patients with known blood pressure fluctuations were monitored 24/7 at home by a telemedicine center. At the beginning, the GP defined the limit values and any interventions in an action protocol. Patients were contacted and treatment adjusted if their blood pressure exceeded or fell below the threshold values. The study was analyzed using blood pressure values and Patient Reported Outcome Measurements.

Results: The average blood pressure reduced significantly from 135/84mmHg to 129/80mmHg within 6 months. The number of times the limit value was exceeded fell significantly by 70%: systolic from 64 to 19 times per month and diastolic from 81 to 24. A total of 129 telephone calls were made due to blood pressure values that were too high or too low: 37 times the reserve medication was recommended, 6 times the GP and 3 times the emergency room. 55% of patients rated the perceived safety with the highest score. Overall satisfaction was rated 8-10 out of a maximum of 10 points. 100% of patients would recommend telemonitoring to others.

Conclusion: Telemonitoring combined with telemedical care can be a profitable addition to traditional (GP) medical care in the healthcare system. Remote monitoring of blood pressure values leads to fewer derailments and increases the perceived safety of hypertensive patients. A decisive factor for the success of telemonitoring is the close cooperation of the parties involved.

Keywords: hypertension, telemedicine, telemonitoring, Hospital@Home, safety

P218

Use, Knowledge, and Perception of Large Language Models in Clinical Practice: A Cross-Sectional Mixed-Methods Survey among Physicians in Switzerland

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Introduction: Large language model-based tools (LLMs) offer significant potential for clinical practice but also raise concerns regarding output accuracy, patient safety, and data security.1,2 This study aimed to assess Swiss physicians' use, knowledge, and perception of LLMs and identify associated factors.

Methods: An anonymous online survey was distributed via 34 medical societies in Switzerland from 25 April 2024 to 1 October 2024. The primary outcome was frequent use of LLMs, defined as at least weekly use. The key secondary outcome was higher knowledge regarding LLMs, defined as a score above the median in an 11-item knowledge test. Qualitative analysis used an iterative inductive thematic approach to explore physicians' perceptions of LLM-related opportunities and risks.

Results: Among 685 participants who completed the survey (response rate 29%), 225 (33%) reported frequent use of LLMs. Notably, 390 (56.9%) had used an LLM for medical purposes at least once, but only 25 (3.6%) had used a specific medical LLM. The median knowledge test score was 6 points (IQR 4-8 points). Multivariable analysis showed that younger age, male gender, and research activity were significantly associated with frequent use and higher knowledge of LLMs. Only 42 participants (6%) reported the availability of workplace guidelines for LLM use. Qualitative analysis identified administrative support, analytical assistance, and access to information as key opportunities. The main risks identified were declining clinical skills, poor output quality, and legal or ethical concerns.

Conclusion: Younger age and male gender were associated with higher adoption and knowledge of LLMs among Swiss physicians. The study revealed a gap between the widespread use of LLMs and the availability of workplace guidelines. Strikingly, very few physicians reported using specific medical LLMs. To address knowledge disparities, facilitate LLM use in clinical practice, and minimize potential risks, easily accessible educational resources and regularly updated clinical guidelines are warranted.

Figure 1: (A) Comparison of frequency of general and medical use with dichotomization into frequent (at least weekly) and infrequent (less than weekly) users. (B) Comparison of models used for general and medical use.

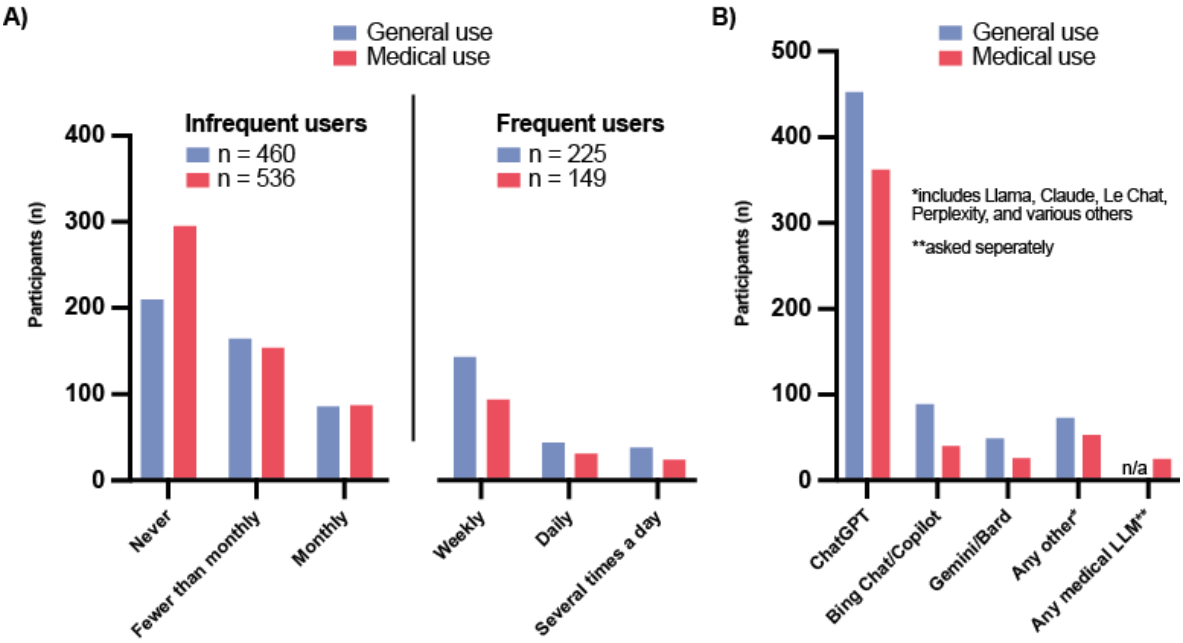
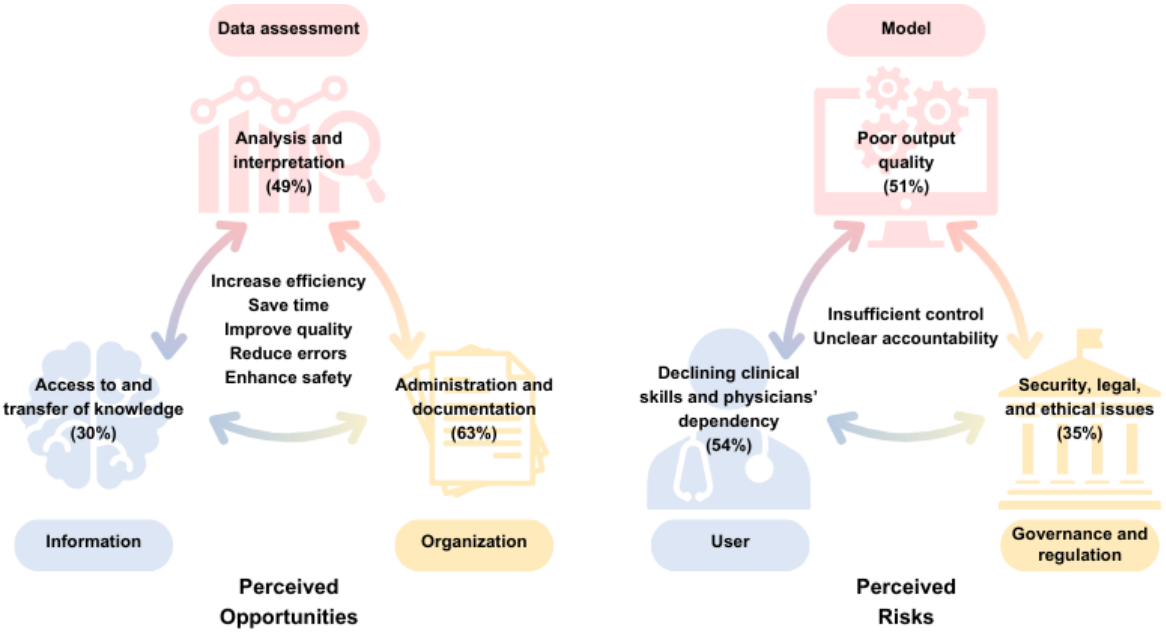


Figure 2:

Opportunities and risks of LLMs as perceived by physicians. Main themes were derived from free text responses by iterative inductive thematic analysis.



P219

Comparing Vitamin D determination methods in systemic lupus erythematosus

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Introduction: Vitamin D deficiency is well documented in patients with systemic lupus erythematosus (SLE). While liquid chromatography-mass spectrometry (LC-MS) is the reference method for Vitamin D determination, antibody-based methods such as electrochemiluminescence immunoassay (ECLIA) assays are often preferably used due to cost and work efficiency. SLE is characterized by the production of autoantibodies. Based on clinical observations we suspected an interference of endogenous antibodies present in SLE plasma with antibody-based methods. This study aimed at systematically comparing Vitamin D measurements by LC-MS and ECLIA in SLE plasma samples.

Methods: Vitamin D measurements were performed in plasma samples from 34 patients of the Swiss SLE Cohort Study (SSCS) across three different time points (n = 102) comparing ECLIA from Roche Diagnostics and LC-MS. A subset of samples was re-measured after prior treatment with heterophilic blocking reagent (HBR) tubes. Enzyme-Linked Immunosorbent Assay (ELISA) was used to test for interfering antibodies against mouse and rabbit IgG.

Results: There was no systematic error between determination methods. A relevant deviation defined as a difference greater than 30% was observed in 10.2 % of the investigated samples. All outliers had higher values in the ECLIA compared to LC-MS. Outliers derived from different patients and were not stable over time. Treatment with HBR left the outliers' values unchanged. A substantial number of SLE samples contained anti-mouse antibodies. The ECLIA contains rabbit-derived antibodies, but presence of anti-rabbit IgG antibodies did not relate to falsely high measurements in ECLIA. Overall, we could reproduce findings on low Vitamin D levels in SLE patients, which were more pronounced during winter months. Patients taking supplementation, cortisone or immunosuppressants had higher Vitamin D levels than patients without. Vitamin D levels did not correlate with disease activity. Regarding these findings there was no difference between both measuring methods.

Conclusion: LC-MS and ECLIA measurements in SLE patients deviated in a relevant manner with higher Vitamin D levels in the ECLIA, but less frequent than expected. There was no evidence for suspected heterophilic antibodies to cause this discrepancy. However, while the cause remains unclear, it needs to be acknowledged that there is a relevant number of deviating measurements in SLE patients potentially influencing treatment decisions.

P220

Metabolomic Profiling of Plasma-derived Extracellular Vesicles in prediction of drug metabolism phenotype

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Introduction: Optimal drug dosing is crucial for treatment efficacy and safety, given the significant interindividual variability of drug-related enzyme metabolism, particularly Cytochrome P450s (CYP450). Current methods to predict drug metabolism phenotype have limitations (Bosilkovska M, et al), excluding vulnerable patients and retrospective biobank studies. Plasma-derived Extracellular Vesicles (EVs) have recently demonstrated promising results as a source of biomarkers based on mRNA evidence (Achour, Gosselin, et al.; Achour, Al-Majdoub, et al.). In this study, we used metabolomics analysis on EVs to investigate their potential in predicting drug exposure.

Methods: Six ml of whole blood from 42 healthy donors was processed within 2 hours via 3 centrifugation steps. Plasmas from 6 donors were pooled together reaching a final volume of 10 ml (n = 7). EVs were isolated using Seize Exclusion Chromatography (QEV10, Izon). Collected fractions were characterized for total protein concentration (Micro BCA), EVs (LAMP2), and lipoproteins (APOC3 and APOB100) using commercially available ELISA Kits. Metabolomics profiling analysis was performed using LC-HRMS and metabolite identification using LC-HRMS/MS.

Results: EV metabolome revealed significant enrichment compared to whole plasma metabolomics analysis, with over 4,200 unique metabolic features detected in EVs. Many of them correlated positively with LAMP2, suggesting EV-associated metabolites, primarily lipids, organic acids, organoheterocyclic compounds and benzenoids. Some have shown to potentially originate from hepatic tissue, liver, and bile, as well as being CYP450 substrate or product.

Conclusions: Metabolomic analysis of EVs components reveals promising potential for drug exposure prediction. Unlike traditional whole plasma metabolomic approaches, EVs analysis shows enhanced metabolic feature/metabolite enrichment and improved detection of metabolites, particularly from drug-metabolizing organs, such as the liver. This innovative approach could significantly advance pharmacological research by offering more precise insights into drug metabolism.

P221

Pharmacokinetic variability of tacrolimus in renal transplant patients: role of digestive microbiota, metabolome, CYP3As, P-gp and other intrinsic factors

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Introduction: Tacrolimus is a calcineurin inhibitor administered to prevent graft rejection in renal transplantation[1]. This treatment has a high inter-individual pharmacokinetic variability, which can lead to side effects or graft rejection. 40% of this variability is explained by genetic polymorphisms in hepatic cytochrome P450 3A5 (CYP3A5)[2]. Other factors such as serum

albumin, hematocrit level, age, sex, weight and P-gp expression level are also a source of variability in tacrolimus response[3–5]. Plus, microbiota could also be an important factor in therapeutic variability of this molecule[6]. Finally, endogenous urinary and plasma metabolites could contribute to the prediction of adequate tacrolimus doses[7].

Methods: An observational study was carried out in 30 renal transplant patients taking tacrolimus. Eligible patients were contacted by their physicians, and two sessions were held at 3-month intervals. At each visit, stool, urine and blood samples were collected for microbiological (stool), metabolomic (blood and urine) and genetic (blood) analyses. In addition, the Geneva phenotyping cocktail was administered to patients to measure CYP3A and P-gp phenotype by capillary blood sampling at 2h, 3h and 6h after cocktail ingestion.

Results: A significant positive Pearson correlation with a coefficient of 0.47 (p-value of 0.0066 at the 95% confidence level) was obtained between patients' necessary tacrolimus doses and their OH-midazolam/midazolam metabolic ratios relative to CYP3A. Female patients required significantly higher tacrolimus doses than males in both sessions. No correlation or significant difference in tacrolimus doses was found according to P-gp phenotypes and genotypes. Following previous research[6], the association between Faecalibacterium prausnitzii abundance and tacrolimus doses was examined, but no correlation was found. A significant difference of microbiota diversity was observed according to the type of donor i.e. living vs brainstem death donor. Endogenous metabolites likely to correlate with tacrolimus pharmacokinetic parameters are cortisol, acetyl-arginine, phosphoethanolamine and 1-methylguanosine[7].

Conclusions: 47% of tacrolimus variability could be explained by CYP3A phenotype. Endogenous metabolites revealed by non-targeted metabolomics will be explored and complete the analysis of this variability.

P222

Prospective COhort of MEdical residenTs to assess health and career paths in general internal medicine: the COMET study

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Introduction: While general internal medicine (GIM) is a key specialty in the healthcare system, data on factors affecting GIM residents' somatic and psychological health and career paths are lacking. We thus established a Swiss multicentric cohort of GIM residents in 2024, the COMET study, to prospectively assess their psychosomatic health, job satisfaction, work-life balance and career paths. Here, we describe the study and present the preliminary findings.

Methods: The COMET study, is an ongoing prospective cohort with the aim of recruiting GIM residents working in ambulatory or hospitals settings from all main regions of Switzerland. Local ethics committees approved the study. Participant GIM residents answered validated questionnaires on somatic and psychologic health, similarly to those used in a well-established population-based cohort, the CoLaus|PsyCoLaus Study. In addition, questionnaires on factors affecting postgraduate and pull-and-push factors for pursuing a GIM career were completed. Follow-up will take place annually for at least 4 years. We present baseline characteristics of the participants from the first recruitment centers.

Results: Out of 9 recruitment centers, 216 GIM residents were recruited from September 2024 to January 2025 (mean age 29 ± 2.7 years) (Table 1). 78.7 % of the participants had a medical degree obtained in Switzerland and were engaged in postgraduate training for 3.5 ± 1.98 years (thereof 2.64 ± 1.66 years in GIM). Residents were working a mean of 50.1 ± 9.9 hours/week and taking care a median number of 8 patients per day. GIM was the primary goal as a specialty for 64.4% of residents (Table 2). 18.1% of residents had a negative opinion on their current work-life balance. Only 3.7% of the participants reported a high intention to quit direct patient care within five years.

Conclusion: The COMET study paves the way to better understanding the health of young doctors and to explaining pull-and-push factors for pursuing a career in GIM. Based on preliminary data, one fifth of residents considered having a poor work-life balance, whereas less than 5% were thinking about quitting direct patient care in the coming years.

Table 1: General demographic data of the cohort expressed as number of participants (%)

Gender	**Female**	**130 (60.2)**
	Male	75 (34.7)
	Other	1 (0.5)
	No answer	10 (4.6)
Relationship status	In a relationship	112 (51.9)
	Single	59 (27.3)
	Married	31 (14.4)
	Divorced/separated	2 (1)
	No answer	12 (5.4)
Mother's education	University	94 (43.5)
	Apprenticeship	45 (20.8)
	Superior school	43 (19.9)
	Obligatory school	20(9.3)
	Other	4 (1.9)
	No answer	10 (4.6)
Father's education	University	116 (53.7)
	Apprenticeship	37 (17.1)
	Superior school	33 (15.3)
	Obligatory school	17 (7.9)
	Other	3 (1.3)
	No answer	10 (4.6)
Educational debt	No	201 (93.1)
	Yes	5 (2.3)
	No answer	10 (4.6)

Table 2. Participants' professional characteristics by gender. Results are expressed as number of participants (%). Comparisons between women and men performed using chi-square for categorical variables

	Total	Women	Men	
	No 215	No 130	No 75	P value
Country of graduation				
Switzerland	78.7	82.3	82.7	1
Other	16.7	17.7	17.3	1
Academic title				
None	72.2	76.2	74.7	0.94
MD	22.2	23.8	22.7	0.98
PhD	0.5	0	1.3	0.36
Specialty currently aimed for (first 5)				
General internal medicine	64.4	67.7	68	1
Emergency medicine	3.7	2.3	6.7	0.14
Anesthesiology	3.7	0.8	9.3	0.004
Gastroenterology	2.3	3.1	1.3	0.65
Infectious diseases	2.3	3.8	0	0.16
Income aspiration (CHF/year)				
100'000 - 150'000	32.9	29.2	21.3	0.28
150'000 - 200'000	25	33.8	36	0.87
200'000 - 250'000	22.2	23.1	24	1
250'000 - 300'000	9.3	10	9.3	1
More than 300'000	6	3.8	9.3	0.29
Working time aspiration				
Part-Time	69	78.5	62.7	0.02
Full-Time	24.1	17.7	37.3	0.003
Actual work-life balance				
Very good	6.9	8.5	5.3	0.57
Good	28.7	26.2	36	0.18
Average	39.4	39.2	45.3	0.47
Poor	16.2	20.8	10.7	0.097
Very poor	1.9	1.5	2.7	0.62
Intention to quit				
None	45.4	50.8	42.7	0.33
Low	30.1	28.5	37.3	0.24
Average	13.9	13.1	16	0.71
High	2.3	3.1	1.3	0.65
Very high	1.4	0.8	2.7	0.55
Long-term aim				
Private practice	40.8	48.5	33.3	0.06
Hospital clinician	37.6	37.7	42.7	0.61
Academic track	11.6	8.5	18.7	0.58
Undecided	19.1	19.2	20	1

P223

Severity and unusual clinical presentations of Mycoplasma pneumoniae infection in adults – a case series

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Learning objectives: To highlight the unique clinical features of M. pneumoniae infection in adults, the high morbidity of the disease and the therapeutic implications.

Case series: We analysed cases with documented M. pneumoniae infection hospitalised between August 2024 and January 2025. Our hospital serves a population of about 150'000 people. Eleven patients were identified (5 male, 6 female). The median age was 39 years. The diagnosis was determined by PCR from nasopharyngeal swabs. Ten patients had respiratory symptoms and computed tomography or conventional radiography showed pneumonia and/or bronchiolitis. Two patients presented with extensive mucositis (Figure 1 and 2), one of whom had no significant respiratory symptoms. In seven patients, onset of symptoms was 7 or more days prior to the emergency room visit. Six patients had been treated with at least one course of antibiotics prior to admission (1 amoxicillin, 3 amoxicillin/clavulanic acid, 1 amoxicillin/clavulanic acid and clarithromycin, 1 clarithromycin). Symptoms at onset and slow progression of the disease were similar in the early stages of infection. However, during the course of the disease, 7/11 patients showed extrapulmonary manifestations such as mycoplasma-induced rash and mucositis (3 patients, one of whom required parenteral nutrition), pericardial effusion and elevated liver enzymes (2 patients each). Three patients (27%) needed intensive care (intubation, high flow oxygen therapy and extracorporeal membrane oxygenation in 1 patient each). Median hospital stay was 5 days (0-33 days). No patient died.

Discussion: M. pneumoniae is a common cause of atypical pneumonia and can cause outbreaks, especially in children and young adults. In autumn 2024, several hospitalised adults were diagnosed with M. pneumoniae. No specific risk factor was identified in the present case series. The clinical evolution was highly variable, and 27% of the cases needed intensive care. Disabeling mucositis was not unusual. Knowledge of the disease and early diagnosis are crucial for appropriate treatment, as beta-lactam antibiotics are not effective. Doxycycline, macrolides or fluoroquinolones are recommended. Increasing resistance to macrolides is a global concern. A lack of response to beta-lactams should prompt an evaluation of atypical pneumoniae, especially M. pneumoniae.

Figure 1: Mycoplasma induced conjunctivitis

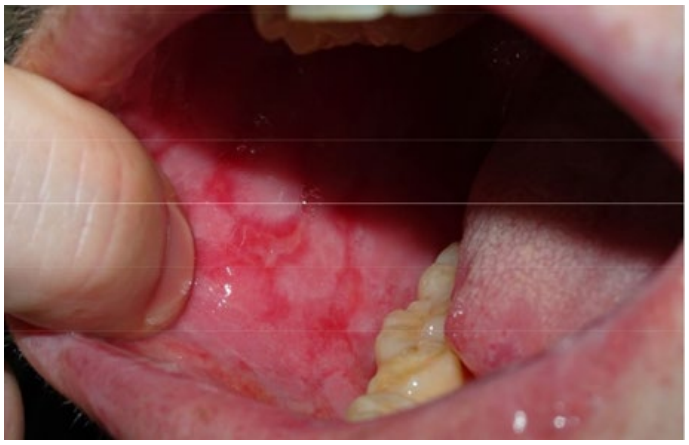

Figure 2: Mycoplasma induced mucositis

P224

The Carbon Footprint of Treating Type 2 Diabetes – Calculations Based on Published Data

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Introduction: Global warming is attributed to a significant increase in greenhouse gas (GHG) emissions in recent decades. Approximately 5% of global GHG emissions are caused by the healthcare sector. The 'carbon footprint' - expressed in CO_2 equivalents (CO_2e) - refers to the amount of GHGs caused by a specific product, activity or process. Our study aimed to determine the annual carbon footprint of treating type 2 diabetes.

Methods: As a first step, we searched the literature for data on GHG emissions of routine diagnostic and therapeutic measures, used in treating type 2 diabetes. In a second step, we added up the results of these individual components according to commonly used treatment plans (Table 1, treatment plans A-D).

Results: Our literature search yielded data on the annual carbon footprint of the following pharmacological treatments: metformin (5 kg CO_2e), once-weekly GLP1-RA (4 kg CO_2e), basal insulin (8-12 kg CO_2e), bolus insulin (7-11 kg CO_2-e). Compared to disposable pens, the use of reusable cartridge insulin pens causes 30% less GHG emissions, a similar effect can be achieved by switching from a standard insulin to a high concentration insulin. Performing one capillary blood glucose measurement causes 0.002 kg CO_2e. According to data from Switzerland, an average medical consultation in a primary care practice generates 5 kg CO_2e, with half of these emissions being caused by the transport of patients and staff. According to our calculations, treating one patient with type 2 diabetes causes an annual carbon footprint of approximately 23-55 kg CO_2e, with pharmacotherapy and medical consultations being the most important contributing factors (Table 1).

Conclusion: Treating a patient with type 2 diabetes for one year generates a similar carbon footprint to a 75-200 km car journey, and corresponds to 0.2-0.5% of the average annual per capita carbon footprint in Switzerland. In comparison, GHG emissions caused by dialysis treatment for kidney failure, heating an apartment, or a transatlantic flight are significantly higher

(Figure 1). In the context of type 2 diabetes the greatest potential for reducing GHG emissions lies in diabetes prevention and in the prevention of end-stage renal failure. A smaller, but immediate effect can be achieved through the implementation of virtual medical consultations, and the prescription of high concentration insulins or reusable pens.

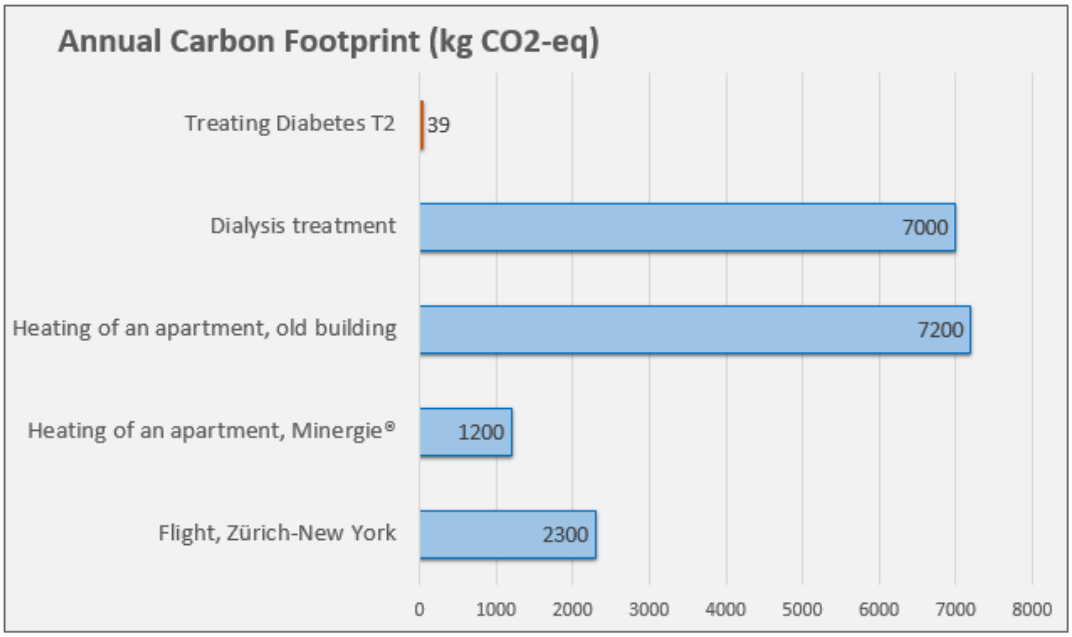

Figure 1. Our results in context.
It is assumed that the apartment is 100m^2 in size, and that heating energy is derived from fossil sources.
The calculation shown refers to a return flight Zürich-New York in economy class.

Treatment Plan	A	B	C	D
Metformin	5	5	5	5
GLP1-RA	-	4	4	4
Basal Insulin	-	-	10	10
Bolus Insulin	-	-	-	9
Blood Glucose Self-Monitoring	1x/week: 0.1	1x/week: 0.1	3.5x/week: 0.4	3x/day: 2.2
Medical Consultations	3x/year: 15	3x/year: 15	4x/year: 20	4x/year: 20
Ophthalmology Consultations	0.5x/year: 2.5	0.5x/year: 2.5	1x/year: 5	1x/year: 5
Annual Carbon Footprint	23	27	44	55

Table 1. The annual carbon footprint (kg CO_2e) of treating type 2 diabetes according to different treatment plans (A-D).
Our search did not yield any data on SGLT2-inhibitors, continuous glucose monitoring systems or ophthalmologic consultations.
We assumed that CO2 emissions caused by ophthalmology consultation are identical to medical consultations. Routine blood and urine test are included in the medical consultations.

E-POSTER – GUEST SOCIETY: SWISS SOCIETY FOR GERIATRICS (SFGG/SPSG)

P225

Evaluation of grade ¾ toxicities of oral chemotherapy indicated in elderly women with advanced breast cancer (case series)

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Introduction: Side effects are common in cancer patients receiving medical treatments. The evaluation of this toxicity was done after each course according to the CTCAE criteria. High grades are represented by grades ¾.

Materials and methods: 74 patients aged 70 years and over with advanced breast cancer were evaluated on the therapeutic level and more specifically the grade ¾ toxicity of oral chemotherapy during a multicenter study in eastern Algeria.

Results: The therapeutic combination of Capecitabine with Vinorelbine administered orally according to the classic or metronomic schedule caused several side effects; 716 adverse effects of all grades were recorded. Among these toxicities; 60 Ilaire effects or 8.4% were grade ¾. The study of the various grade 3/4 adverse events found the frequency of hematological toxicities (Neutropenia 33%; Anemia 15%; Thrombopenia 6.6%) followed by digestive toxicities (Anorexia 5%, Vomiting 5%, Diarrhea 5%), then hand-foot syndrome 13.3%; fatigue 13.3% and finally renal failure (4.5%). Concerning the factors that influence the appearance of grade ¾ toxicities: It emerges from this fact and after comparative study by the chi2 test of the different factors that can influence the occurrence of high grade toxicities; the significant impact of age. After comparative study by the chi2 test of the different factors that can cause the appearance of hematological and digestive toxicities hand-foot syndrome and high grade fatigue; it still emerges the significant impact of age. Repercussion of these grade ¾ adverse effects on the management of patients with advanced breast cancer: Dose adaptation (39%); Postponement of chemotherapy (59%); Permanent cessation of oral chemotherapy (5%).

Conclusion: The assessment of the risks of severe grade 3/4 toxicity in medical oncogeriatrics involves close collaboration between oncologists and geriatricians. Thus, vulnerability, death and severe chemotoxicity during cancer treatment represent the main risks to be assessed before any therapeutic decision in elderly patients with cancer.

Table 1: Type of toxicity grade ¾.

Adverse effects	60	100%
Neutropenia	20	33.3%
Anemia	9	15%
Hand-foot syndrome	8	13.3%
Fatigue	8	13.3%
Thrombopenia	4	6.6%
Anorexia	3	5%
Vomiting	3	5%
Diarrhea	3	5%
Renal failure	2	3.5%

Table 2: Variation of grade ¾ toxicity according to risk factors.

Incriminated parameters	**Toxicity ¾ (23)**	**Percentage**	**% p-value**
Age: <75 ≥75	15 8	20,2% 10,8%	0,02
Level of education: Educated Uneducated	6 17	8% 23%	0,53
Stage of disease: III IV	7 16	9,4% 21;6%	0,23
PS: 0 1 2	9 13 1	12,2% 17,5% 1,3%	0,65
ADL: ≤ 6 >6	14 9	19% 12,1%	0,64
IADL: ≤ 4 >4	18 5	24,3% 6,7%	0,80
G8 score: ≤ 14 >14	13 10	17,5% 13,5%	0,34
Co-morbidity: Presence Absence	20 3	27% 4%	0,74

E-POSTER – GUEST SOCIETY: SWISS SOCIETY OF CLINICAL PHARMACOLOGY AND TOXICOLOGY (SSCPT)

P226

Acute dose-dependent effects and self-guided titration of continuous N,N-dimethyltryptamine infusions in a double-blind placebo-controlled study in healthy participants

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Introduction: N,N-dimethyltryptamine (DMT) is a serotonergic psychedelic that is known for its short-lasting effects when administered intravenously. Several studies have investigated the administration of intravenous boluses or combinations of a bolus and a subsequent continuous infusion. However, data on dose-dependent acute effects and pharmacokinetics of continuous DMT infusions are lacking.

Methods: We used a double-blind, randomized, placebo-controlled, crossover design in 22 healthy participants (11 women, 11 men) who received placebo and DMT (0.6, 1.2, 1.8, and 2.4 mg/min) over an infusion duration of 120 min. We also tested a self-guided titration scheme that allowed participants to adjust the DMT dose rate at prespecified time points to achieve their desired level of subjective effects. Outcome measures included subjective effects, autonomic effects, adverse effects, plasma hormone concentrations, and pharmacokinetics up to 3 h after starting the infusion.

Results: DMT infusions exhibited dose-proportional pharmacokinetics and rapidly induced dose-dependent subjective effects that reached a plateau after 30 min. A ceiling effect was observed for "good drug effect" at 1.8 mg/min. The 2.4 mg/min dose of DMT induced greater anxious ego dissolution than the 1.8 mg/min dose and induced significant anxiety compared with placebo. We observed moderate acute tolerance to acute effects of DMT. In the self-guided titration session, the participants opted for moderate to strong psychedelic effects, comparable in intensity to the 1.8 mg/min DMT dose rate in the randomized dosing sessions.

Conclusion: These results may assist with dose finding for future DMT research and demonstrate that acute subjective effects of DMT can be rapidly adjusted through dose titration.

P227

Acute effects and pharmacokinetics of LSD after paroxetine or placebo pretreatment in a randomized, double-blind, cross-over trial in healthy participants

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Introduction: Lysergic acid diethylamide (LSD) is being investigated as rapid onset treatment for the same psychiatric disorders, which are currently treated with selective serotonin reuptake inhibitors (SSRIs). SSRI therapy was discontinued in Phase II trials before the administration LSD, risking withdrawal symptoms. However, there was no clinical data on the interaction of SSRIs and LSD.

Methods: The present study investigated the acute response to single doses of LSD (100 µg) after daily administration of paroxetine (10 mg for 7 days, followed by 20 mg for 35 days) or placebo (42 days) in 23 healthy participants. We assessed subjective and adverse effects, vital parameters, cytochrome P450 2D6 (CYP2D6) genotype and LSD plasma concentration. Data was analyzed using two-sided paired t-tests. Pharmacokinetic parameters were determined using non-compartmental analysis and sequential compartmental pharmacokinetic–pharmacodynamic (PK–PD) modeling of the data. Primary hypothesis was that paroxetine, compared with placebo, will result in equivalent positive LSD-induced subjective effects.

Results: The overall intensity of the subjective effects, as well as positive subjective effects of LSD remained equivalent after paroxetine and placebo pretreatment. However, paroxetine significantly reduced ratings of "bad drug effect", "anxiety", "nausea". Paroxetine led to higher maximal concentrations and total exposures of LSD (geometric mean ratios of 1.4 and 1.5, respectively). The extent of this inhibition was nominally highest in genetic CYP2D6 normal metabolizers and lowest in poor metabolizers. The mean (95% CI) PK-PD model derived EC_{50} value for the LSD "any drug effect" was 1.7 (1.0–1.4) ng/mL and 1.2 (1.5–2.0) ng/mL following paroxetine and placebo, respectively.

Conclusion: The present results suggest that the continuation of SSRI treatment before LSD administration could have several advantages. Firstly, the risk of SSRI discontinuation symptoms is eliminated. Secondly, paroxetine with LSD significantly reduced adverse subjective and somatic effects. Paroxetine's pharmacokinetic interaction with LSD confirms its partial metabolization by CYP2D6. The higher EC_{50} for the subjective effect of LSD observed after paroxetine indicates a reduced potency of LSD in the presence of an SSRI (paroxetine) compared to placebo due to a pharmacodynamic interaction. If LSD were to be combined with other SSRIs which do not inhibit CYP2D6, a dose increase could be considered.

P228

Acute effects of MDMA, MDA, and their prodrugs Lysine-MDMA and Lysine-MDA in healthy participants

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Introduction: 3,4-Methylenedioxymethamphetamine (MDMA) is used recreationally, in research, and in MDMA-assisted psychotherapy. Its psychoactive metabolite is 3,4-methylenedioxyamphetamine (MDA), which has also previously been used in MDA-assisted therapy. Only one modern study investigated effects of MDA [1], but effects of MDMA and MDA have never been directly compared in humans. Additionally, prodrugs of MDMA and MDA were developed in the form of Lysine-MDMA and Lysine-MDA. Lysine-conjugated amphetamines slowly release the active component once absorbed and represent pharmaceutical strategies to enhance tolerability and reduce abuse potential [2].

Methods: We used a double-blind, randomized, placebo-controlled, crossover design with 23 healthy participants (12 women, 11 men) to compare acute responses to MDMA (100 mg), MDA (93.9 mg), Lysine-MDMA (171.7 mg), Lysine-MDA (165.6 mg), and placebo dosed equimolarly and in a counterbalanced order. Outcome measures included acute subjective and autonomic effects, and pharmacokinetics. Peak (E_{max}) values were compared using repeated-measures analysis of variance with drug as the within-subjects factor, followed by Tukey's post hoc tests.

Results: MDA and MDMA induced effects of comparable intensity. However, MDA induced more subjective stimulant-like effects ($p < 0.05$), more negative "bad drug" effects ($p < 0.05$) and tended to produce slightly more fear ($p < 0.1$) and visual changes ($p < 0.1$). The effect duration (mean ± SEM) of MDA was 6.6 ± 0.7 hours and longer compared to the effect duration of MDMA of 3.7 ± 0.4 hours. Lysine-MDA did not induce significantly different effects than MDA other than a slightly later effect onset of 1.1 ± 0.2 hours and a longer time to maximal effect of 3.0 ± 0.4 hours compared with MDA which showed an effect onset of 0.7 ± 0.1 hours and a time to maximal effect of 2.0 ± 0.1 hours. The plasma elimination half-life (geometric mean ± SEM) of MDMA and MDA was 7.3 ± 0.7 and 8.4 ± 0.4 hours, respectively. When Lysine-MDMA was given, no MDMA could be measured in the blood samples and no subjective or autonomic effects occurred.

Conclusion: MDMA and MDA produce relatively similar acute subjective and autonomic effects. MDA produced more stimulant-type effects and acted longer than MDMA. Lysine-MDA represents a functional slow-release prodrug form of MDA. Lysine-MDMA did not release MDMA due to the tertiary amine structure and is therefore not a functional prodrug of MDMA.

P229

Drug-associated Vanishing Bile Duct Syndrome: identifying pharmaceutical triggers using the WHO pharmacovigilance database

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Introduction: The Vanishing Bile Duct Syndrome (VBDS, first described in 1988) and is characterized by progressive destruction and disappearance of intrahepatic bile ducts leading to ductopenia and cholestasis. Although various etiologies have been implicated, drug-induced VBDS remains particularly challenging to diagnose. The aim of this retrospective study was to identify drugs possibly associated with VBDS, based on data from the WHO Global Pharmacovigilance Database, VigiBase®.

Methods: All anonymized and deduplicated individual case safety reports (ICSR) labeled with the MedDRA preferred term "vanishing bile duct syndrome" or "ductopenia" were retrieved from VigiBase® via VigiLyze® until November 2024. Reports on drugs known to treat similar cholestatic conditions (e.g., ursodeoxycholic acid) were excluded to minimize bias. Each ICSR was evaluated for demographic data, time to onset, severity, reporter qualification, and suspected drugs. Disproportionality analysis was performed using the Bayesian Information Component (IC). A positive IC_{025} (>0) was considered indicative of a possible statistical association.

Results: After applying inclusion/exclusion criteria, 402 ICSRs remained for analysis. These encompassed 758 suspected drugs, covering 213 distinct agents. Most reports were from USA (n = 235). The most frequently reported drugs included sulfamethoxazole/trimethoprim, paracetamol, azithromycin, levofloxacin, and ibuprofen. The highest $IC_{0.25}$ values were observed for nevirapine and dapsone ($IC_{0.25}$ = 3.5) as well as with $IC_{0.25}$ = 3.1 for sulfamethoxazole/trimethoprim, azithromycin, tenofovir and lamivudine. Notably, only two agents (carbamazepine and sulfamethoxazole/trimethoprim) listed VBDS on their official labels (Swissmedic/FDA).

Conclusion: This analysis expands the list of potential culprit agents beyond those already recognized. Antibiotics (e.g., dapsone), antiretrovirals (e.g., nevirapine, tenofovir), immunosuppressants (e.g., tacrolimus), and other drug classes all emerged as possible triggers, with the intrinsic limitations of retrospective pharmacovigilance analysis due to the nature of the data based only on spontaneous reports. Given the syndrome's potential severity and irreversibility, early recognition and prompt discontinuation of the offending agent is critical. Further research is warranted to clarify the underlying mechanisms and to develop standardized diagnostic and therapeutic protocols for this rare but serious condition.

P230

First-Dose Individualization of Tacrolimus Therapy in Renal Transplant Patients Using physiologically based pharmacokinetic Modeling

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Introduction: Tacrolimus, a calcineurin inhibitor, is widely used for the prevention and treatment of graft rejection following kidney transplantation. Due to its narrow therapeutic window and significant interindividual variability, regular therapeutic drug monitoring is essential. The initial tacrolimus dose is based on body weight and is subsequently adjusted empirically. However, this approach can potentially expose patients to risks of overdosing or underdosing. To address these challenges, model-informed precision dosing using physiologically based pharmacokinetic (PBPK) modeling offers a promising solution for optimizing tacrolimus dosing. The primary objective is to develop and validate a PBPK model to individualize the initial tacrolimus dose for renal transplant patients.

Methods: The PBPK modeling platform SimCYP version 21 (Certara UK Limited, SimCYP Division, Sheffield, UK) was used . Two existing models from the literature were initially tested using tacrolimus blood concentration data obtained from pharmacokinetic studies in healthy volunteers and renal transplant patients. The model demonstrating the best performance was then optimized and validated using data from renal transplant patients enrolled in the observational Tacrobiote study (CCER 2020-00087). Individual predictions were performed through the creation of virtual twins by incorporating patient-specific demographic, blood, and CYP3A pheno/genotypic data (Figure 1). Model performance was assessed using Mean Fold Error (MFE), Mean Absolute Error (MAE), and Mean Absolute Percentage Error (MAPE).

Results: Virtual twins were successfully generated using data from 26 patients in the Tacrobiote study. Progressive individualization of the model improved prediction accuracy when comparing the initially observed and predicted tacrolimus doses after transplantation (Figure 2). The final model demonstrated robust performance, achieving a MFE (95% CI) of 0.88 (0.64–1.11), a MAE of 3.66, and a MAPE of 0.44.

Conclusion: The PBPK model developed for tacrolimus in renal transplant recipients showed good performance after individualizing demographic, blood, and CYP3A phenotypic parameters. These findings highlight the potential clinical application of the model, particularly for determining the initial tacrolimus dose. Future optimizations should focus on integrating CYP3A phenotyping and additional variability factors, such as intestinal microbiota composition, to further refine dosing accuracy.

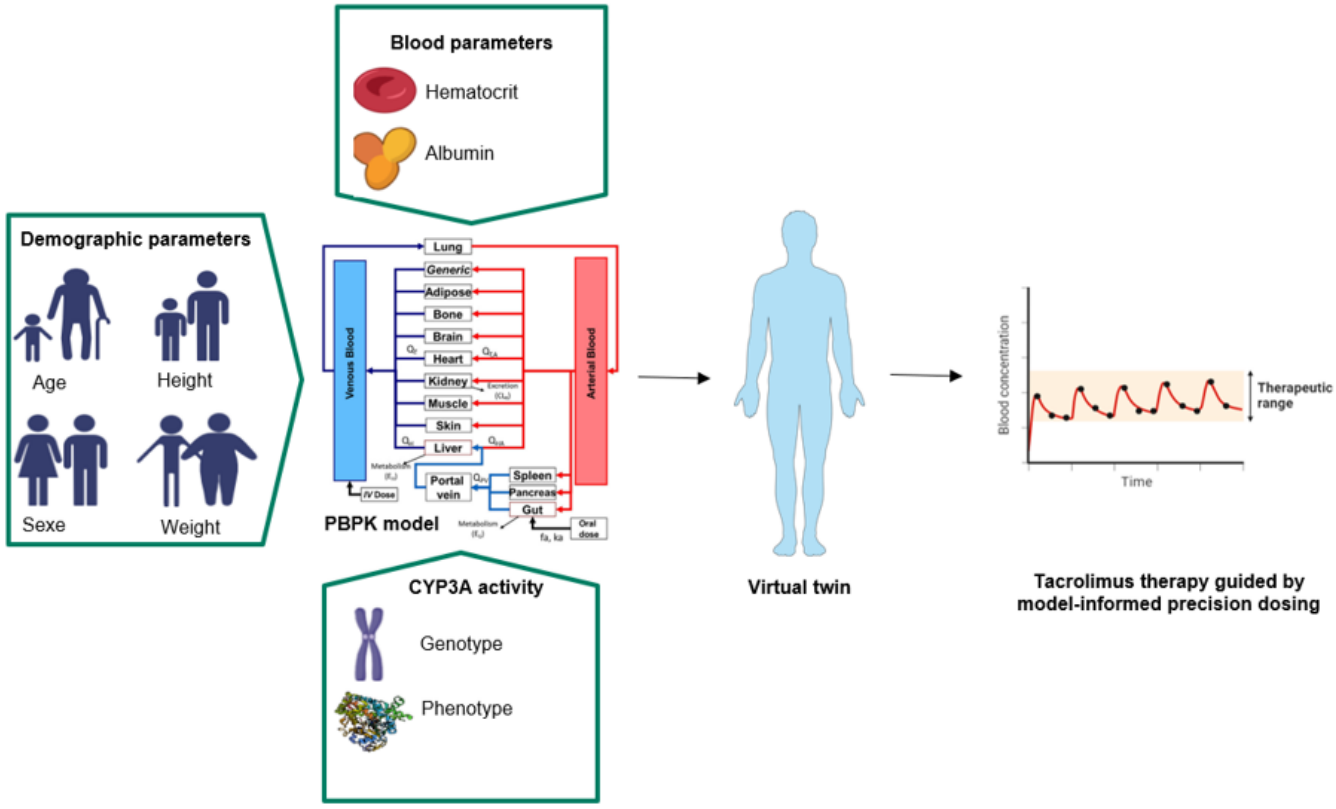

Figure 1. Illustration of a physiologically based pharmacokinetic (PBPK) model virtual twin. The process involves the individualization of a patient's parameters, including demographic data, blood characteristics (eg, haematocrit, albumin), and CYP3A pheno/genotypic factors.

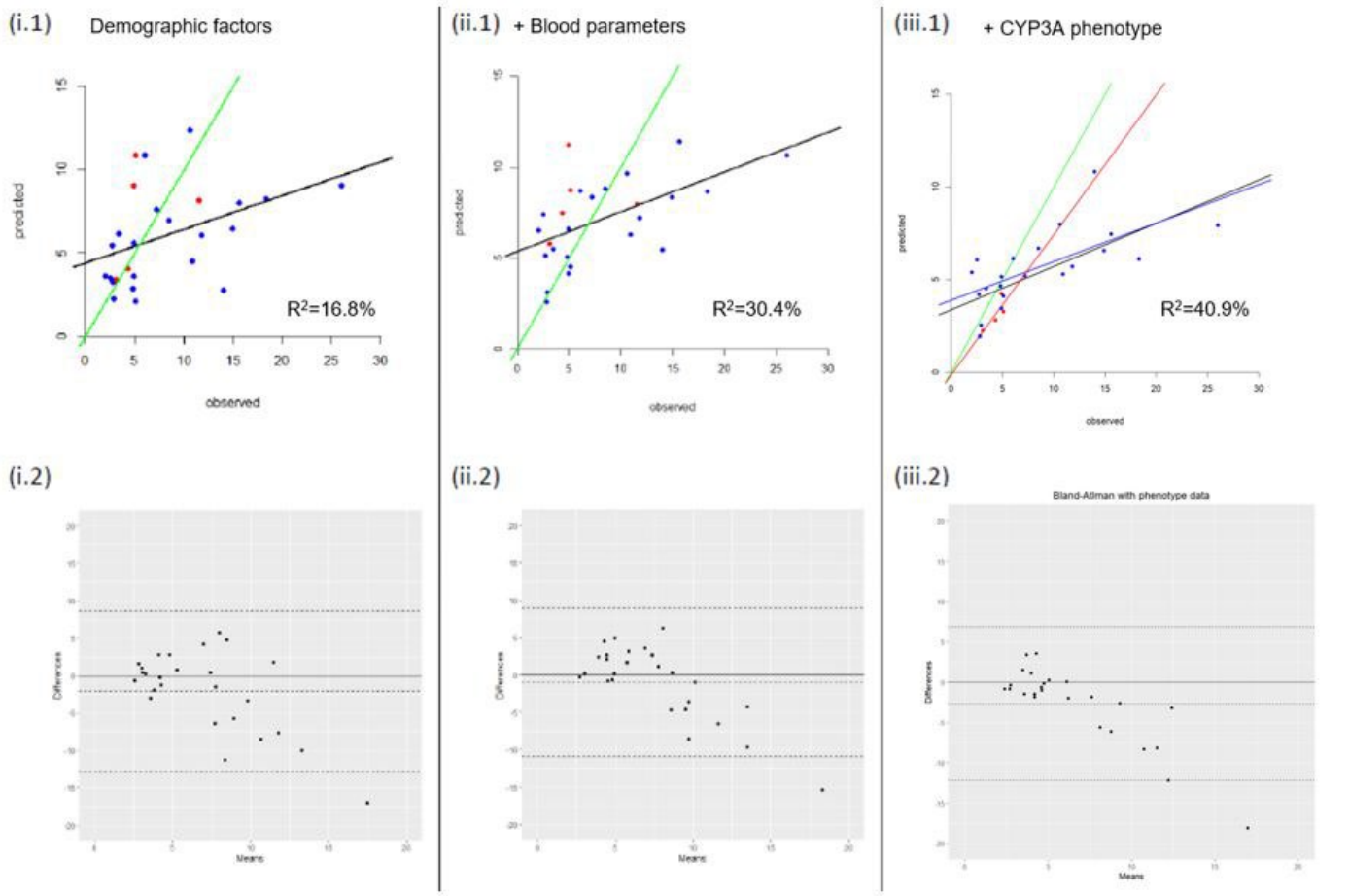

Figure 2. Linear regression plots showing the median predicted concentrations of tacrolimus versus the observed concentrations with corresponding Bland-Altman plots (i.2). Matched VTs based on demographic data (i.1 and i.2) hematocrit, serum albumin (ii.1 and ii.2) , (iii.1 and iii.2) CYP3A phenotype, and tacrolimus dose. All tacrolimus concentrations are expressed in ng/ml.

P231

Impact of Machine Learning-Based Covariate Imputation on Retrospective Population Pharmacokinetics of Tobramycin

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Introduction: Population pharmacokinetic (PopPK) models are used to describe the changes in drug concentration across diverse patient populations, leveraging covariate effects using non-linear mixed-effects modeling. This aims to describe the variability of drug exposure within populations by considering patient-specific covariates, e.g., age, sex, weight, disease state, or organ function. However, retrospective studies, in particular, are prone to missing covariate information. While several approaches for data imputation in pharmacometrics exist, e.g., mean/median imputation, norm imputation, and predictive mean matching [1], machine learning (ML) paradigms are not yet widely used but can offer interesting additions to the analytical toolbox.

Method: We used retrospective data from a routine therapeutic monitoring program at a tertiary hospital in Switzerland for tobramycin after intravascular administration. We imputed missing covariates within the dataset using two popular ML techniques: Random forest (RF) and k-nearest neighbor (kNN). Additionally, we created a complete case dataset (CCD). We built separate PopPK models for all datasets to compare parameter estimates and bootstrap analysis. Furthermore, we considered already published PopPK models. Secondly, we analyzed the effect of total exposure ($AUC_{0\text{-}24h}$) and peak concentration (C_{max}) with a compartmental approach on clinical outcome.

Result: We included 141 occasions with 280 concentrations in the analysis, with only 40% being in the CCD. A one-compartment model with a linear elimination best described the data. Imputations with RF and kNN resulted in parameter estimates comparable to CCD while reducing random error (Tab 1). The visual predictive checks (VPCs) are provided in Fig 1. Our parameter estimates and identified covariates align with existing literature and demonstrate that ML imputation shows promise for handling missing covariate data in pharmacometric modeling [2]. We observed no significant differences in patient outcomes relating to $AUC_{0\text{-}24h}$ or C_{max}.

Conclusion: The resulting parameter point estimates from RF and kNN introduced no bias when compared with CCD. The resulting reduction of random errors allowed for more robust es-

timations of other sources of variability, including covariate effects. As both ML paradigms employed are simplistic, requiring little parameterization and computational overhead, they can be valuable additions to a pharmacometric modeling and simulation workflow.

Tab 1: Comparative parameter estimates [RSE%] with different imputation approaches

Fixed effects	Random Forest	K-nearest neighbor	Complete case dataset
V_{pop} (L)	27.5 [4.0]	27.4 [3.9]	25.5 [5.9]
CL_{pop} (L/h)	5.3 [4.4]	5.1 [4.2]	4.4 [4.7]
GFR_{CL}	0.8 [12.4]	0.8 [12]	0.8 [11.8]
$Weight_V$	0.9 [19.5]	0.9 [18.8]	0.9 [22.1]
Inter-individual variability (IIV)			
V_{IIV}	0.2 [18]	0.2 [16.6]	0.1 [102]
CL_{IIV}	0.3 [11.8]	0.3 [12.3]	0.1 [27.7]
Inter-occasional variability (IOV)			
V_{IOV}	0.2 [15.6]	0.1 [41]	0.2 [43.4]
CL_{IOV}	0.2 [12]	0.2 [14.3]	0.1 [32.2]
Residual error			
Constant (a)	--	--	--
Proportional (b)	0.1 [14.1]	0.2 [8.6]	0.2 [16]
η shrinkage (mean)			
V (%)	13.4	21.4	35.0
CL (%)	-2.3	-0.2	-2.2
Covariate Relationships			
CL	$CL_{pop} * log\left(\frac{eGFR_{CG}}{89.0\ \frac{mL}{min}}\right)^{GFR_{CL}}$		
V	$V_{pop} * log\left(\frac{Weight}{70\ kg}\right)^{Weight_V}$		

P232

NLP in support of Pharmacovigilance: QUality Adverse Drug Reaction AcTIve Control (QUADRATIC)

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Introduction: Pharmacovigilance (PV) involves detecting, assessing, understanding, and preventing adverse drug reactions (ADRs). A major challenge in PV is ADR under-reporting, which affects drug safety monitoring. Since 2016, the Regional PV Center of Southern Switzerland has conducted active PV using an informatics system designed to identify potential ADRs within electronic health records of the Ente Ospedaliero Cantonale (EOC) hospital network. This system employs regular expressions (regex) to detect ADR-related keywords predefined by PV experts. The QUADRATIC study, conducted by EOC and Istituto Dalle Molle (IDSIA USI-SUPSI), funded by the Swiss National Science Foundation, aimed to assess whether natural language processing (NLP) could enhance the efficiency of active PV compared to the regex system.

Methods: A dataset of 400 discharge letters was divided into training (80%), validation (10%), and testing (10%) subsets. Logistic regression, support vector classification (SVC), and stochastic gradient descent (SGD), were evaluated as NLP models, using three vectorization techniques: bag of words (BoW), term frequency-inverse document frequency (TFIDF), and word2vec (W2V). Additionally, the deep learning BERT-based model MedBIT-r3-plus was tested. Performance metrics such as accuracy, recall, precision, and F1-score were calculated on a validation set of 40 discharge letters.

Results: Logistic regression with BoW and SVC with TFIDF achieved the highest accuracy (83%). SVC with TFIDF obtained the best recall (92%), while SGD with BoW and the regex system achieved the highest precision (92%). SVC with TFIDF showed the best F1-score (87%). The MedBIT-r3-plus model reached an accuracy of 85%, recall of 84%, precision of 89%, and F1-score of 87%. The W2V vectorizer underperformed compared to BoW and TFIDF.

Conclusions: NLP models outperformed the regex system in recall, reducing false negatives in identifying potential ADRs in

discharge letters. However, the regex system achieved higher precision, minimizing false positives. Improving precision is crucial to lessen the manual review workload for PV experts. To support routine PV practice, experiments are ongoing to provide PV experts with text excerpts that explain the classifiers' decisions, refining the screening process for letters flagged as positive. Balancing recall and precision is key to optimizing NLP-driven PV, ultimately improving drug safety monitoring.

P233

Pharmacokinetics and subjective effects of intranasal diacetylmorphine in heroin assisted treatment

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Introduction: Intranasal diacetylmorphine (IN DAM) represents a promising new route of administration which is currently being developed as a novel treatment approach for opioid use disorder (OUD) in Switzerland. However, limited data exist on the pharmacokinetics and pharmacodynamics of IN DAM at clinically relevant doses. This study aimed to characterize the pharmacokinetics, the subjective effects and tolerability of IN DAM in patients with OUD.

Methods: Fourteen patients in nasal heroin-assisted treatment (HAT) self-administered their usual morning dose of IN DAM before receiving their daily maintenance dose. Plasma concentrations of diacetylmorphine, 6-monoacetylmorphine, morphine, morphine-6-glucuronide and morphine-3-glucuronide were measured at baseline and at 2, 5, 10, 15, 20, 30, 40, 50, 60, 120 and 180 minutes. Cravings, subjective effects, withdrawal symptoms and autonomic effects were assessed over 3 hours.

Results: The mean self-administered diacetylmorphine dose was 346 mg (range 190–700 mg), delivered over a mean time of 3.8 minutes (range 1–9 minutes). Drug effects peaked within 20–30 minutes, with marked reductions in heroin craving and withdrawal symptoms. No clinically relevant respiratory depression or decrease in oxygenation saturation was observed. Peak drug effects were paralleled by maximal plasma concentrations of diacetylmorphine and 6-monacetylmorphine, while the sustained heroin typical effects best correlated with morphine and morphine-6-glucuronide plasma concentrations. Plasma half-lives of diacetylmorphine and 6-monoacetylmorphine were longer, and time to maximal plasma concentration was later than previously reported, suggesting saturated absorption at high doses.

Conclusion: IN DAM is a safe and effective alternative for patients in HAT, offering rapid onset of effects without significant side effects. Optimization of intranasal delivery may further improve absorption and clinical utility.

P234

Pharmacokinetics, pharmacodynamics, and urinary recovery of oral mescaline hydrochloride in healthy participants

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Introduction: Mescaline is a classic serotonergic psychedelic with a long history of human use. This study analyzed the pharmacokinetics (PK), pharmacokinetic-pharmacodynamic (PK-PD) relationship and urinary recovery of oral mescaline hydrochloride.

Methods: Data from 113 single-dose administrations (100–800 mg) in 49 participants from two Phase I trials were analyzed with compartmental PK and PK-PD modeling. A one-compartment model with first-order absorption, elimination, and a lag time described the mescaline plasma concentrations well. Acute subjective effects, assessed by Visual Analog Scales (VASs) ranging from 0–100% were modeled using a sigmoid E_{max} model linked to the plasma concentration.

Results: Mescaline demonstrated dose-proportional increases in total exposure (AUC) and maximal concentrations (C_{max}), reaching peak levels within 1.2–2.3 h. The estimated half-life was approximately 3.5 h across doses. About 50% of the dose was excreted unchanged and 30% as the main metabolite 3,4,5-trimethoxyphenylacetic acid (TMPAA) over 24–30 h. Model-predicted "any drug effects" started on average around 1 h after dosing for all doses. Maximal subjective effect strength and effect duration increased with higher doses from 13% and 3.5 h (100 mg) to 83% and 13 h (800 mg), respectively.

Conclusion: Our analysis provides the first detailed PK-PD profile of mescaline in humans. The data suggest that the oral bioavailability of mescaline hydrochloride is around 50% consistent with a first-pass metabolism to its main metabolite, whereafter renal excretion seems to be the primary route of elimination of both mescaline and its main metabolite.

P235

Proactive Geriatric Medication Management and Deprescribing Efforts in Swiss Nursing Home Residents

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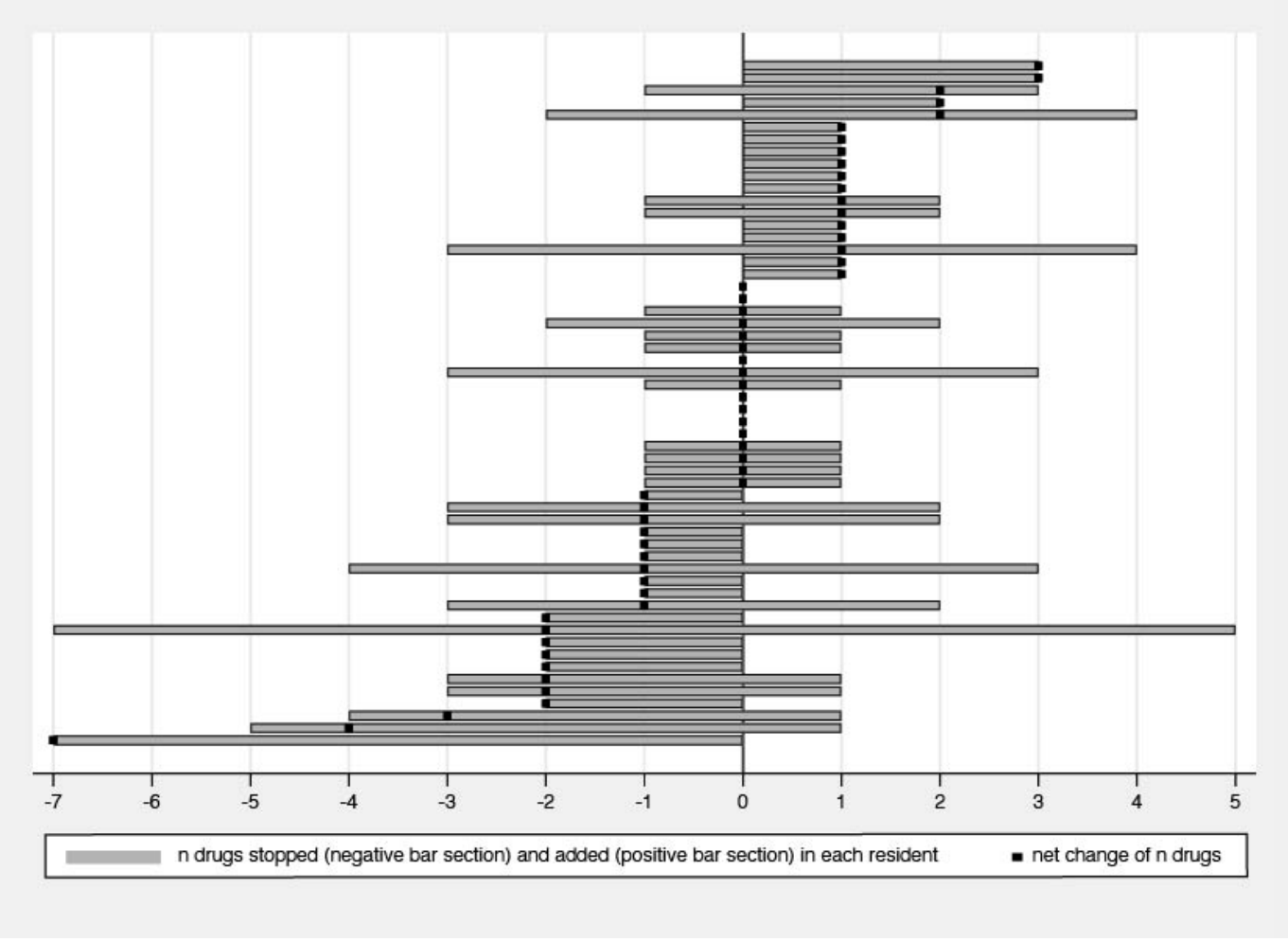
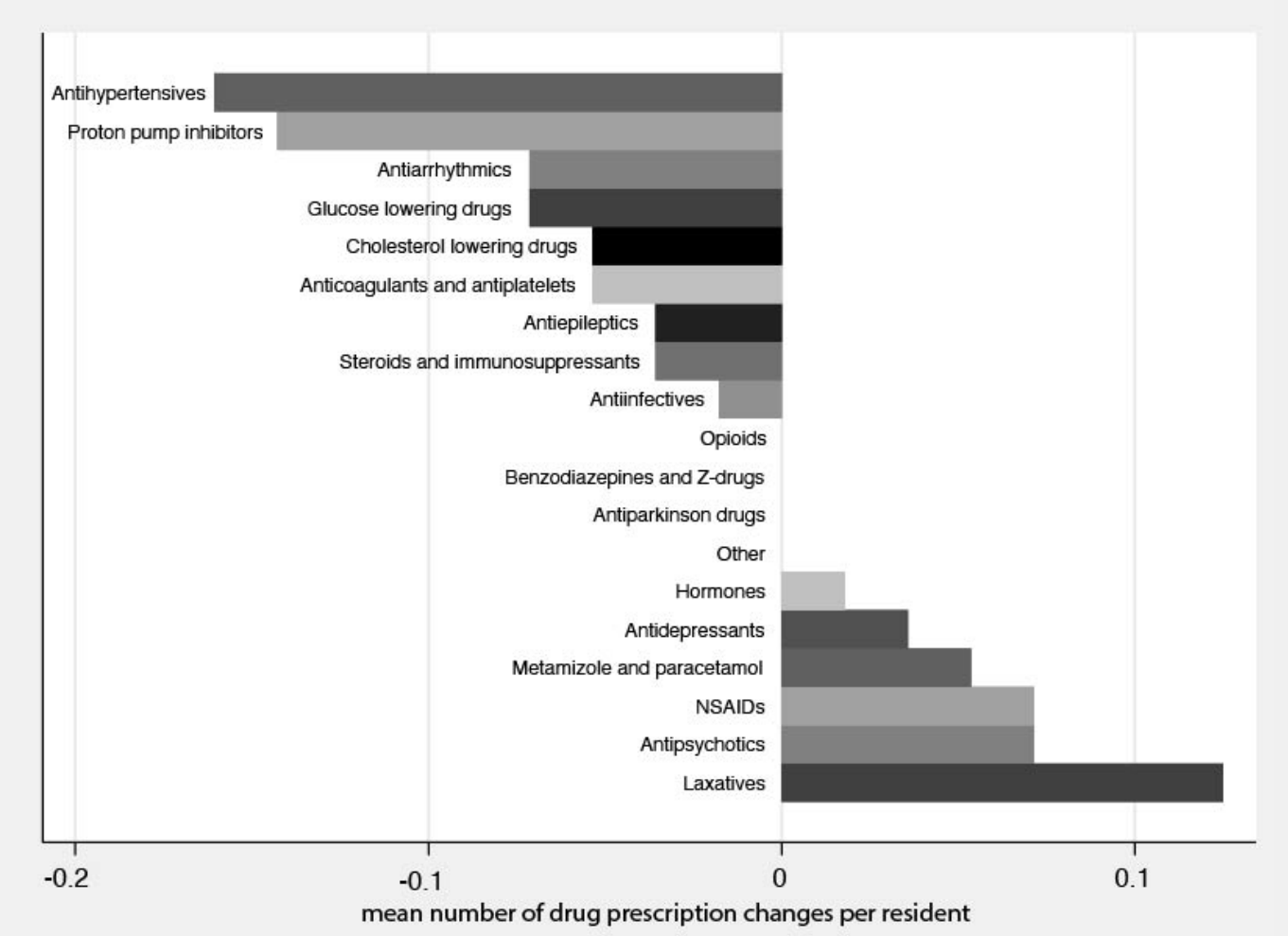
Introduction: Polymorbidity and polypharmacy are major challenges in geriatric care, resulting in loss of quality of life and increasing health care costs.

Methods: We evaluated proactive medication management of Swiss nursing home residents through personal visits and use of a clinical decision support system (CDSS) with integrated Beers Criteria list.

Results: Among 56 nursing home residents we observed a high prevalence of polypharmacy with an average of 7.9 regular and 5.1 on-demand prescriptions. Proactive medication management led to persistent medication changes in 87.5% of patients. Regular prescriptions were reduced in 21 residents and increased in 18 residents, resulting in a reduced use of cardiovascular drugs and antacids ($p < 0.05$), but no significant overall reduction of polypharmacy. CDSS alerts based on Beers Criteria made no clinically relevant contribution to medication reduction.

Conclusion: Proactive geriatric medication management led to persistent medication changes, no reduction of overall polypharmacy, but reduced use of selected drug classes that are associated with an increased risk of adverse reactions and costs. Clinical relevance and implementability of Beers Criteria were low, revealing major limitations of algorithm-based alerts for older patients, who require additional personalized evaluations of their individual complex healthcare needs.





P236

Safety of Supratherapeutic Loperamide Prescriptions: A Retrospective Analysis of Adverse Drug Reactions and Cardiotoxicity

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Introduction: Loperamid, an over-the-counter antidiarrheal opioid with low bioavailability, is considered safe at therapeutic doses. It may be prescribed in supratherapeutic doses, e.g. for the treatment of diarrhea in short bowel syndrome. Severe toxicity from high-dose loperamide abuse has been described, but it is unclear whether this also applies to medically prescribed supratherapeutic exposure.

Methods: Retrospective study of loperamide-treated patients at a tertiary care university hospital, from 2012 to 2023. Patients were categorized into two groups: supratherapeutic (patients receiving >16mg loperamide on at least one day) and therapeutic (patients receiving ≤ 16 mg/day loperamide for similar indications, e.g., short bowel syndrome, intestinal failure, chronic diarrhea). The primary outcome was the rate of pre-defined severe adverse drug reactions (SADR), assessed for causality using the Naranjo scale. Secondary outcomes were markers of loperamide-associated cardiotoxicity.

Results: 289 patients were included, with 103 in the supratherapeutic group (median dose 24 mg/day, max. 40 mg/day) and 186 in the therapeutic group (median 4 mg/day). The supratherapeutic group was younger (median age 66 vs 70 years, p = 0.0006) and had higher rates of high-output stoma (36% vs. 8%, p <0.0001) compared to the therapeutic group. Overall, possible SADR occurred in 9% of patients, primarily electrolyte abnormalities, two cases of paralytic ileus, two cases of acute heart failure, one cardiac arrest. No “probable” or “definite” SADR were observed. Univariate analysis showed a higher rate of possible SADR in the supratherapeutic group (17 vs. 5%, p = 0.002), but the difference was not significant after adjusting for demographics, comorbidities, coingestions and presence of a high-output stoma. Electrocardiography was available in 11% of patients, with no significant differences in rates of QTc/QRS prolongation or syncope between the two groups.

Conclusion: In this retrospective study, a potentially spurious association between supratherapeutic loperamide and SADR, likely related to disease severity, did not persist after adjusting for confounding factors. No significant differences in rates of cardiotoxicity were observed between the two groups. While concerns over high-dose loperamide toxicity are warranted, medically prescribed moderately supratherapeutic use does not appear to pose a markedly increased risk for severe toxicity in this specific population.

P237

Virtual twin approach Using physiologically-based pharmacokinetic modeling in hospitalized patients treated with apixaban or rivaroxaban

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Introduction: Direct oral anticoagulants (DOACs) exposure is associated with the risk of major bleeding and ischaemic events. When DOACs are used in the real world, outside the strict selection of clinical trials, patients with multiple comorbidities may be at risk of over- or underdosing. Physiologically based pharmacokinetic (PBPK) modelling has emerged as a promising approach to assess drug exposure at the individual level using a "virtual twin" (VT) approach. In a large cohort of hospitalized patients, previously validated PBPK-based models for apixaban and rivaroxaban are being assessed at the population level for their performance in predicting individual pharmacokinetics, aiming to identify patients at high risk of under- or overdosing by considering their demographic, physiological, and CYP-related phenotypic and genotypic characteristics.

Methods: Clinical data were collected from hospitalised patients treated with apixaban (n = 100) or rivaroxaban (n = 100) at the Geneva University Hospitals (HUG). These patients were recruited in the OptimAT trial (NCT03477331). Each patient was paired with a virtual twin using PBPK modelling integrating their demographic, kidney function, P-glycoprotein (Pgp) and cytochrome P450 (CYP450) 3A phenotyping (Figure 1). Individual PK profiles were simulated for every patient and compared to the actual drug exposure, as assessed with LC/MS-MS.

Results: Mean fold error (95%CI) for the apixaban and rivaroxaban (Figure 2) models integrating demographic and kidney function was within the pre-required bioequivalency criteria with 1.10 (1.04-1.16) and 0.97 (0.93-1.02), respectively. Adding individual Pgp and CYP3A phenotypes led to a slight overprediction 1.25 (1.17-1.33) and 1.30 (1.21-1.39), but patients at risk for bleeding were correctly predicted with mean fold errors of 0.90 (0.76-1.04) and 1.15 (1.11-1.20).

Conclusions: In a large cohort of hospitalized patients, a PBPK model incorporating demographic characteristics and kidney function can accurately predict, within bioequivalency criteria, an individual's apixaban and rivaroxaban plasma exposure. The added value of individual Pgp and 3A phenotypes on the predictive performance need to be further explored, although patients at higher risk for bleeding may benefit. This innovative approach represents an important step towards the application of PBPK at bedside.

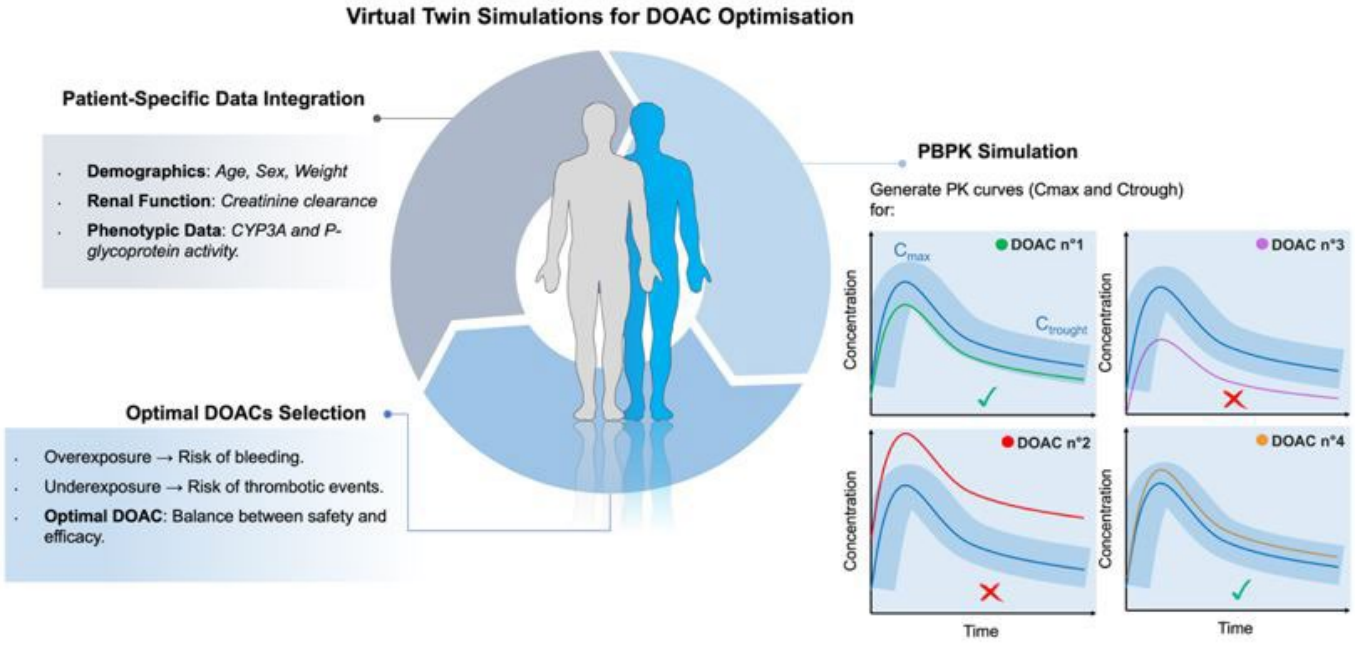

Figure 1. Virtual Twin Simulations for direct oral anticoagulants (DOAC) Optimization.

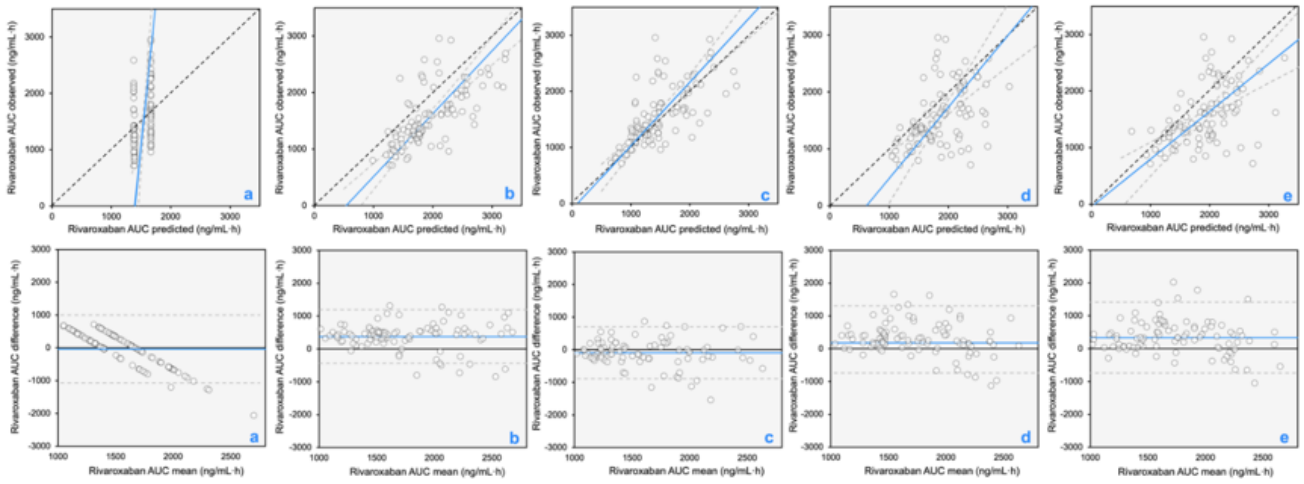

Figure 2. Observed AUC_{tau} plotted against predicted AUC_{tau} for each patient treated with rivaroxaban (empty circles, ○). Solid blue lines represent Deming regressions after successively incorporating demographic data (B), kidney function (C), Pgp (D) and CYP3A (E) phenotyping and the black dashed line represents the identity line. Corresponding Bland-Altman plots are shown below the representation of the limits of agreement, from -1.96s to +1.96s (dotted line) and mean of the difference (blue line).

P238

Cadmium as a challenge for modern medicine

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Introduction: Cadmium can be absorbed into the human organism during the manufacturing process of electrical storage media (e.g. in the production of nickel-cadmium accumulators) as well as through environmental influences (e.g. fertilizers, air pollution) or through inhalation when smoking. Cadmium is a toxic heavy metal that can cause a variety of health hazards.

Methods: A systematic search was carried out in the medical literature database "PubMed" using the search terms "cadmium heart failure" in order to analyze the effects of cadmium on the cardiac system. In particular, long-term chronic exposure to this heavy metal can have many negative effects on the cardiovascular system.

Results: Cadmium shows different health effects and risks depending on the concentration, such as irritation of the digestive tract, lung damage, osteomalacia, tubular renal dysfunction, immune deficiency, cancer (especially lung cancer), cerebrovascular events, hepatopathies and various cardiac pathologies such as heart failure, coronary heart disease (CHD), hypertension and peripheral arterial occlusive disease. 31.25 % of the included studies (n = 32) investigated a possible association between cadmium and the risks of CHD. Cadmium can influence a myocardial tissue in a variety of ways at the molecular level, including via means of a divalent metal transporter and via infiltrating immune cells. The endothelial dysfunction caused by cadmium as well as various inflammatory processes and oxidative stress are indicative of reduced cardiac contractile function. In cases of severe acute cadmium poisoning, symptomatic measures can be supported by chelating agents. The nephrotoxic potential of cadmium can lead to severe renal insufficiency, which can result in chronic heart failure due to electrolyte changes, fluid retention and hypertension.

Conclusion: The cardiac effects of cadmium intoxication are diverse. Early medical diagnosis and appropriate measures to prevent exposure are crucial to avoid serious health consequences. Patients with elevated cadmium levels often present with severe cardiac symptoms that can be life-threatening. Further studies are needed to investigate the diverse cardiovascular effects of cadmium and to ensure that possible therapeutic measures are evidence-based.

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Comparative acute effects of R-MDMA and S-MDMA in healthy participants

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Background: As a psychoactive substance and prototypical empathogen the racemic ±3,4-methylenedioxymethamphetamine (MDMA) has been used in substance-assisted psychotherapy because of its effects, including feelings of heightened mood, empathy, trust and closeness to others. [1] Preclinical studies indicated that R-MDMA might be a more favorable substance compared to racemic MDMA because it more potently binds to serotonergic 5-HT_{2A} receptors but less potently stimulates the dopamine system and may therefore have more psychedelic and fewer stimulant and addictive properties. A clinical study conducted by our team compared the effects of R-MDMA, S-MDMA, and racemic MDMA and indicated that both enantiomers overall produce similar acute subjective drug effects. Although 250 mg R-MDMA induced significantly lower stimulant-effects than S-MDMA, it also was overall less strong compared to 125 mg S-MDMA. [2] Therefore, we now plan to compare a higher dose of 300 mg R-MDMA and a lower dose of 100 mg S-MDMA, and thus doses which we estimate to be more equivalent in overall strength.

Methods: We will use a double-blind, randomized, placebo-controlled clinical trial with a crossover design in 24 healthy participants receiving 300 mg R-MDMA, 100 mg S-MDMA, and placebo in a counterbalanced order. Outcome measure will include subjective, autonomic, and adverse effects, as well as pharmacokinetic parameters and circulating hormone levels (Oxytocin, Prolactin, Cortisol). In this study we will also use the Face Emotion Recognition Task and the Multifaceted Empathy Task to allow a more in-depth assessment of empathogenic effects with equivalent doses to investigate if there are differences between R-MDMA and S-MDMA on emotion processing.

Results: We expect to see no relevant differences in the acute effects of R- and S-MDMA with the administered overall equivalent doses.

Conclusion: There will likely be no significant differences in R- and S-MDMA, meaning there is unlikely to be any advantage to using R-MDMA over racemic MDMA in substance-assisted psychotherapy.

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Duloxetine-Induced Reversible Cerebral Vasoconstriction Syndrome

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Learning objectives:Present a rare condition, Reversible Cerebral Vasoconstriction Syndrome (RCVS), to facilitate its diagnosis and treatment.

Highlight the critical role of clinical pharmacologists in reporting RCVS cases and suggesting safe alternative treatments.

Case: A 39-year-old female patient with chronic low back neuropathic pain, treated with duloxetine (60 mg/day) for 2.5 months, presented to the emergency department with a sudden-onset headache. Initially bifrontal, the headache became occipital, with a tightening sensation, reaching an intensity of 10/10, accompanied by vomiting but no fever. The pain was exacerbated by movement and partially alleviated with ibuprofen. Laboratory tests ruled out inflammation, while CT angiography and brain MRI revealed irregularities in the distal posterior cerebral arteries, consistent with RCVS. Vasospasm was treated with nimodipine, and headache was managed with paracetamol and ibuprofen as needed. Duloxetine was suspected as the trigger and promptly discontinued. The patient's symptoms improved and was discharged three days later, with a headache intensity of 1-2/10, continuing nimodipine treatment. An angio-MRI is scheduled in three months. Causality assessment of duloxetine in this case was deemed probable using the WHO International Pharmacovigilance Programme, and Swissmedic was notified. Alternative neuropathic pain treatment, including trazodone, amitriptyline and pregabalin, were proposed.

Discussion: This case represents the fifth RCVS report at HUG and the first linked to duloxetine. RCVS is a rare condition characterized by severe headache and reversible segmental cerebral artery constriction, typically resolving within 3 months. It is thought to result from transient disruption of cerebral vascular tone control and can progress from headaches to rare, severe forms, including stroke, cerebral edema, and death. RCVS is associated with postpartum or exposure to adrenergic or serotonergic agents, such as antidepressants. Duloxetine, a dual reuptake inhibitor of norepinephrine and serotonin, can stimulate alpha-1 adrenergic receptors, inducing vasoconstriction. To date, 31 cases of duloxetine-related RCVS have been reported in the literature. Among the therapeutic options, pregabalin and gabapentin present a lower risk of triggering RCVS. However, caution is advised with trazodone or amitriptyline due to their norepinephrine and serotonin reuptake inhibition, which may increase the risk of recurrence.

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Impact of Temporary Mechanical Circulatory Support (tMCS) on Cytochromes P450 Activity (The ECMOCYP study)

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Background: Temporary Mechanical Circulatory Support (tMCS) is increasingly used to manage refractory and ischemic cardiogenic shock. However, tMCS triggers pathophysiological changes, including systemic inflammatory response syndrome and/or multiple organ dysfunction syndrome (1). The impact of tMCS-induced inflammation, on cytochromes P450 (CYP450) activity remains poorly understood. We hypothesize that tMCS increases pro-inflammatory mediators, which subsequently modulate CYP450 activity. An increase in CYP3A, 1A2, and 2C19 activity is anticipated, alongside a decrease in CYP2B6 and 2C19 activity, as shown in previous studies investigating the effects of inflammation induced by surgery or SARS-CoV-2 (2, 3). This may significantly alter the pharmacokinetics of critical drugs administered to patients in intensive care settings.

Aims: The primary objective is to evaluate the impact of tMCS on six CYP450 enzyme activities (CYP1A2, 2C9, 2C19, 2D6, 2B6, 3A) using the Geneva phenotyping cocktail. Secondary

objectives include assessing correlations between CYP450 activities and inflammatory markers (e.g., IL-6, CRP, TNF-α, IL-1β, IFN-γ) and monitoring dynamic changes in CYP450 activities following tMCS removal.

Methods: This prospective observational study began at Geneva University Hospitals in August 2024 and will continue for 2 years, targeting a sample size of 46 patients The study includes two groups: patients with refractory cardiogenic shock requiring tMCS via VA-ECMO or Impella® CP and those with non-assisted cardiogenic shock, classified according to the European Society of Cardiology. CYP450 phenotypic activity will be assessed using the Geneva Cocktail administered on two occasions (Figure 1).

Results: To date, 9 patients have been enrolled out of the 21 screened. Baseline characteristics of both the tMCS and control groups are detailed in table 1.

Conclusion: After four months, the feasibility of the study appears satisfactory. This study holds significant potential to enhance drug optimization in the context of tMCS use in intensive care settings. The awaited measures of CYP450 phenotypes and inflammatory markers will provide valuable insights to better understand the impact of tMCS-induced inflammation on drug metabolism.

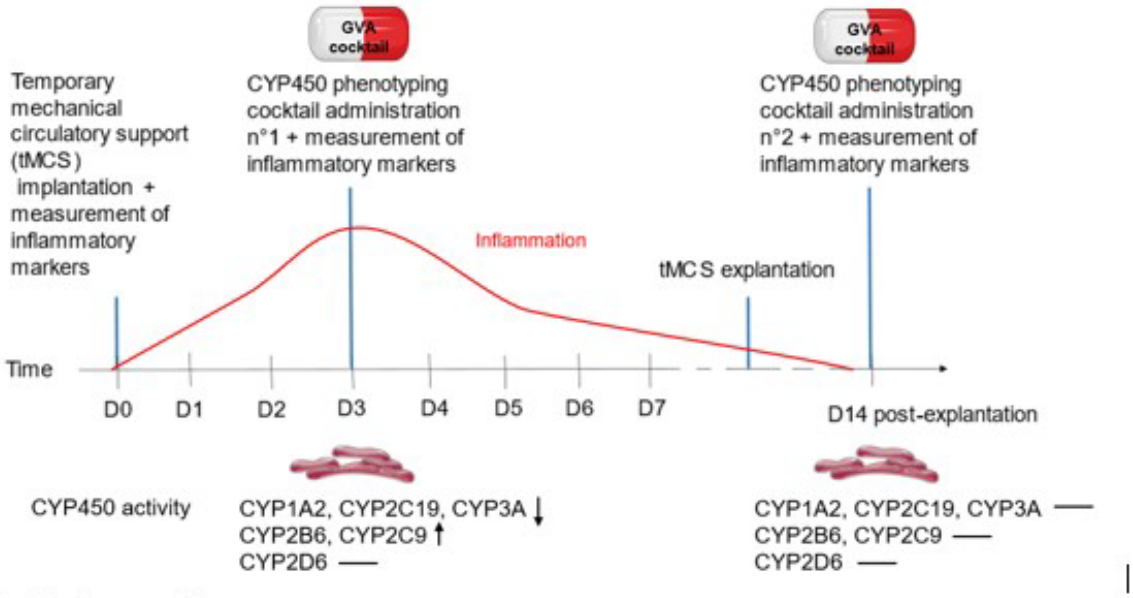

Figure 1 : Study workflow.

	tMCS group (n=4)	Control group (n=5)
Median age (year) (range)	63.5 (44-81)	70 (57-78)
Sex (%female)	25	20
ClCr (ml/min) (range)	90.5 (30-113)	79 (68-103)
CRP (mg/l) (range)	74.5 (24-217)	93 (20-291)
Reason for hospitalization	Valve disease (n=1), ischemic shock (n=2), Pulmonary Arterial Hypertension (n=1).	Ischemic shock (n=5)

tMCS : temporary Mechanical Circulatory Support. ClCr : creatinine clearance. CRP: C-Reactive Protein Test

Table 1. Baseline Demographic and Clinical Characteristics

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The significant impact of chemotherapy in the management of advanced Kaposi's carcinoma

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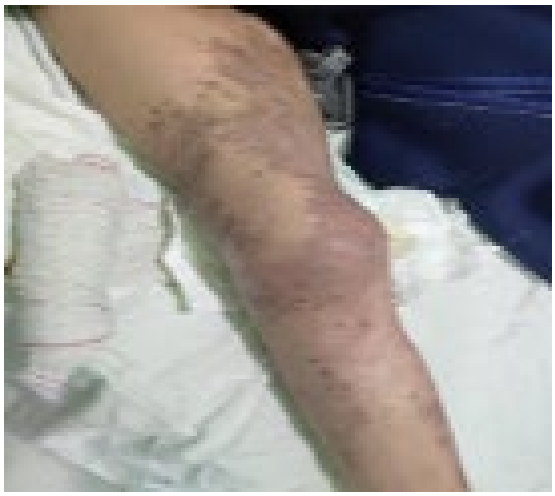
Learning objective: Kaposi's sarcoma is a vascular tumor, caused by a type 8 herpesvirus. The aim of our study is to follow the tumor evolution of a Kaposi's sarcoma that has progressed under specific medical treatment such as chemotherapy.

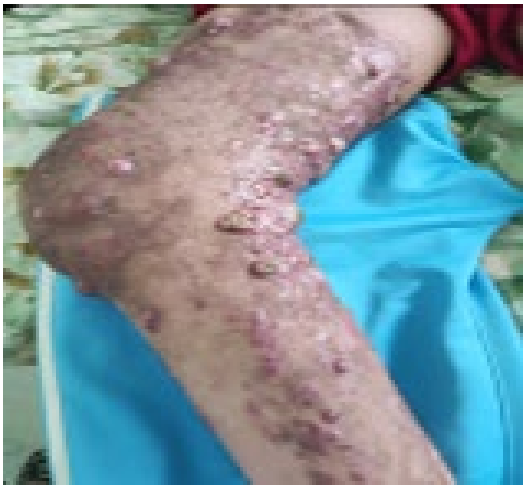
Case: Patient K.D aged 66 years old. He is retired and known for the management of a neoplasia of the Kaposi sarcoma type of the right leg (precancerous lesion evolving for 30 years). The clinical examination found a large area of skin at the level of the right knee extending to the right foot with several superinfected skin nodules associated with a loss of substance, the biopsy of a skin nodule objectified a Kaposi sarcoma. HIV serology is negative. A SPECT CT was requested returning in favor of a mixed bone lesion at the level of the knee and the right foot in relation to a locoregional extension of the primitive region. The decision of the multidisciplinary consultation meeting was to do chemotherapy type taxol in monotherapy (cure every 21 days), we noted a disappearance of the superinfected nodules after the 2nd cure. Followed by a successive clinical improvement at CT 04, CT 07. The extension assessment was always negative. A radiotherapy opinion was requested unfortunately there was no indication given the tumor extension. Our decision was to schedule a therapeutic window of two months after the 9th cure. Reappearance of the lesions previously described hence the reintroduction of the same protocol. After the 4th cure; a negative extension assessment against tumor progression at

the clinic. A second line of chemotherapy type Gemzar/Navelbine D1-D8 was proposed, we noticed a small clinical improvement at CT 02, CT 03. However,at the 4th treatment, we noticed a reappearance of new lesions especially at the level of the popliteal fossa hence the start again of a 3rd line of chemotherapy type Dacarbazine. Currently he is at the 3rd treatment with a remarkable clinical response with a survival of one year under specific medical treatment.

Discussion: The progression is indolent and the disease is usually limited to a small number of lesions located in the lower limbs (the case of our patient), which is consistent with the literature data. This type is usually not fatal.

Conclusion: Classical Kaposi's sarcoma is characterized by an advanced age of onset, slow progression and a predilection for the lower limb, can cause complications of superinfection. Standard treatment is mainly based on chemotherapy.





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