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Interlaken (Switzerland), September 14–15, 2023



SWISS SOCIETY OF GASTROENTEROLOGY (SGG-SSG)
SWISS SOCIETY OF VISCERAL SURGERY (SGVC-SSCV)
SWISS ASSOCIATION FOR THE STUDY OF THE LIVER (SASL)
SWISS SOCIETY OF ENDOSCOPY NURSES AND ASSOCIATES (SVEP-ASPE)

ABSTRACTS OF THE ANNUAL MEETING 2023

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ORAL PRESENTATIONS: SESSION IBD AND GASTROENTEROLOGY

IBD-1

Benefits of high versus low dose upadacitinib as maintenance treatment in ulcerative colitis patients who were responders to 8-week induction with upadacitinib: Results from the U-ACHIEVE phase 3 maintenance trial

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Introduction: The benefits of high (30 mg) versus low (15 mg) dose Upadacitinib (UPA) as maintenance treatment in UC remains to be established.

Aims and Methods: The percentage of pts in each group with mild (Adapted Mayo score (AMS) <5), moderate (AMS 5 to ≤7), or severe (AMS >7) UC was assessed at Weeks 0 and 52 of maintenance. For each UPA dose, area under the curve (AUC) analysis on the proportion of pts in clinical remission per Partial Adapted Mayo score at Weeks 0, 4, 8, 12, 20, 28, 36, 44 and 52 of maintenance was used to calculate the number of weeks pts were in clinical remission.

Results: Based on AUC analysis, pts in the PBO, UPA 15 mg and UPA 30 mg groups were in clinical remission for 15.8 (95% CI: 12.2, 19.5), 30.5 (95% CI: 26.4, 34.6), and 34.4 (95% CI: 30.5, 38.3) weeks, respectively. Pts in the UPA 30 mg group were in clinical remission for an additional 3.8 weeks (26.9 days) over a year of maintenance compared to the UPA 15 mg group.

Conclusions: After 52-weeks of maintenance treatment with UPA 30 mg QD, pts had less severe disease and were in clinical remission for approx. 1 additional month/year vs pts treated with UPA 15 mg QD indicating an important clinical benefit of high dose UPA as maintenance treatment in UC.

Patients with mild, moderate, and severe UC at Weeks 0 and 52 and weeks in clinical remission								
		Week 0			Week 52 ^a			Weeks in Clinical Remission ^b
n (%)	N	Mild	Moderate	Severe	Mild	Moderate	Severe	Mean (95% CI)
PBO	149	137 (92.0)	12 (8.1)	0	34 (22.8)	70 (47.0)	45 (30.2)	15.8 (12.2, 19.5)
UPA 15 mg	148	136 (91.9)	11 (7.4)	0	94 (63.5)	25 (16.9)	28 (18.9)	30.5 (26.4, 34.6)
UPA 30 mg	154	141 (91.6)	13 (8.4)	0	114 (74.0)	24 (15.6)	15 (9.7)	34.4 (30.5, 38.3)

^a Patients with Adapted Mayo scores collected at or after initiation of UC-related rescue medications through the end of the maintenance study or who prematurely discontinued from the study were assumed to have Week 52 Adapted Mayo score return to baseline. Pts with missing data for reasons other than UC-related rescue medications or premature discontinuation were handled by last observation carried forward. Disease severity was defined by Adapted Mayo score: mild (Adapted Mayo <5), moderate (Adapted Mayo 5 to ≤7), and severe (Adapted Mayo >7).

^b Clinical remission was defined as Partial Adapted Mayo score ≤2 with no subscore >1.

IBD-2

IBD and therapeutic drug monitoring of upadacitinib to streamline induction and maintenance treatment

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Background: A highly sensitive and selective analytical method based on multiplex high-performance liquid-chromatography coupled to tandem mass spectrometry (HPLCMS/MS) was developed and validated for the simultaneous plasma quantification of the oral selective JAK kinase inhibitor, Upadacitinib (UPA; Rinvoq®). The goal of the TDM is to identify the most appropriate dosing (between 15mg and 45mg) by addressing dose-dependent efficacy and tolerability issues.

Methods: The method was validated according to SFTSP and ICH-M10 guidelines, The MS/MS parameters of the upadacitinib and its respective stable isotope-labelled IS were established, as well as a chromatogram based on plasma sample of patients. Analytical range of UPA and its limit of detection were validated.

Results: Limit of detection was 0.05 ng/ml, lower limit of quantification 0.5, and upper limit of quantification 200 ng/ml. Chromatogram abundance was provided from a patient on upadacitinib 15 mg QD (Fig 1.). Accuracy profile related to upadacitinib concentration is shown on Fig. 2.

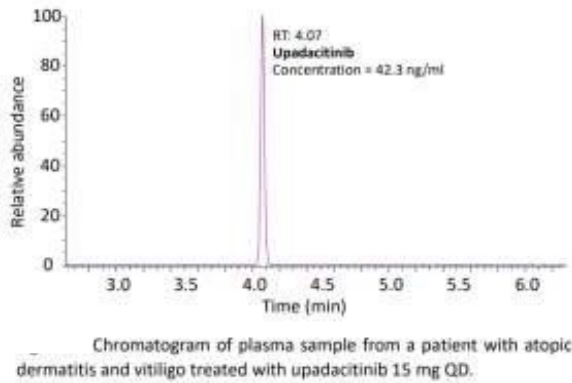


Figure 1

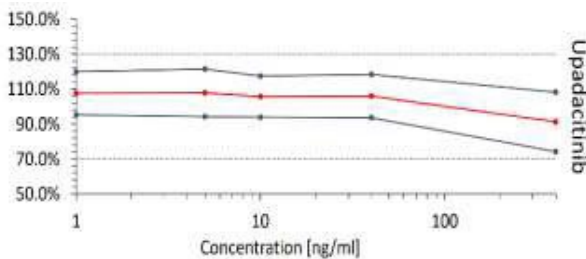


Figure 6. Accuracy profile. Limits = ± 30% risk, $\alpha = 0.05$

Figure 2

Conclusion: We developed and validated a highly sensitive method to quantify in human plasma. This assay will be implemented for clinical guidance to improve upadacitinib effectiveness and safety. Population pharmacokinetics and Physiological based pharmacokinetic modeling with simulation are planned to leverage TDM of upadacitinib as a novel monitoring biomarker to streamline precision medicine in IBD.

IBD-3

A prospective interventional study to evaluate the effect of hypoxia on healthy volunteers and patients with inflammatory bowel disease: The Altitude IBD study

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Background: It is unknown how high-altitude exposure causes inflammatory bowel disease (IBD) flares. We assessed disease activity in healthy controls, IBD patients after 3h exposure in a hypobaric pressure chamber (imitating an altitude of 4000m).

Methods: In a prospective study, 11 Crohn’s disease (CD, 6 males, 35.6y ± 13.7), 9 ulcerative colitis (UC, 3 males, 31.4y ± 10.8) patients and 10 healthy controls (7 males, 27.7y ± 4.9) underwent rectosigmoidoscopy in our outpatient clinic (490m, baseline) and after 3h exposure in a hypobaric pressure chamber (follow-up day 1 and day 7). Disease activity was further assessed by symptom scores, CRP levels and fecal calprotectin. Intestinal mucosa-associated microbial composition was analyzed using high-throughput sequencing.

Results: The 3h exposure in a hypobaric pressure chamber was well tolerated in all subjects. Mean oxygen saturation decreased from 97.5% ± 1.3 to 80.9% ± 4.1, and increased back to normal levels after the hypobaric intervention (p < 0.0001). Clinical and endoscopic disease activity were not significantly changed before vs. after intervention. However, mild flare was seen in 2 UC patients and another UC patient was lost to follow-up due to a disease flare. New endoscopic lesions were detected in one healthy subject and one UC patient. Fecal calprotectin levels significantly increased in CD patients during the follow-up period (p = 0.031), but not in UC and healthy controls. No changes in CRP levels were observed. Percentage of calprotectin-based disease remission (fecal calprotectin <100ug/g) decreased in all groups after hypobaric pressure chamber exposure, and increased thereafter with a significant decrease in the control group (100% at baseline vs. 50% at day 1, p = 0.029) and all patients combined (73.3% at baseline vs. 36.7% at day 7, p = 0.013). No differences in alpha and beta diversity of stool microbiota composition before vs. after hypobaric pressure chamber exposure were observed.

Conclusion: A 3h exposure in a hypobaric pressure chamber did not result in higher disease activity. However, mild flares and development of endoscopic lesions were seen in a subset of patients. Calprotectin-based remission rates significantly decreased between baseline and day 7 suggesting a subclinical effect of short-term hypoxia.

IBD-4

Real-life efficacy and safety of tofacitinib to treat moderate- to-severe ulcerative colitis in Switzerland

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Background and aims: Due to the paucity of data we aimed to assess the real-life safety and efficacy of tofacitinib (Xeljanz®) to treat adults with moderate-to-severe ulcerative colitis (UC) in Switzerland.

Methods: In accordance with the OCTAVE study design, we assessed clinical and endoscopic activity at baseline and weeks 8, 26, and 52. Following the label, tofacitinib was given during the 8 week induction phase with 2x10mg a day and 2x5mg during the maintenance period.

Results: We included 104 adults (mean age 41±14.4yrs, median disease duration 6yrs [IQR 3-11, range 1-44yrs], 48.1% females). Disease location was as follows: proctitis 3.9%, left-sided colitis 34.6%, extensive colitis 11.5%, pancolitis 50%. The former drug treatment history was as follows: mesalazine 100%, topical budesonide 100%, prednisone 100%, azathioprine 70.2%. Before tofacitinib was started, patients had a median of 2 failed biologic therapies (IQR 1-3, range 0-6). 21/104 (20.2%) of patients were treated with prednisone at the moment tofacitinib was started. A significant decrease of the full Mayo score was observed over time (week 0: median 10, IQR 9-11, range 8-12; week 8: median 7, IQR 6-9, range 2-12; week 26: median 1, IQR 1-4, range 0-10; week 52: median 1, IQR 0-12, range 0-10; p < 0.05 trend test). Adherence to tofacitinib was as follows: week 8: 104/104 (100%); week 26: 77/104 (74%); week 52: 63/104 (60.6%). No deep vein thrombosis, pulmonary embolism, major advanced cardiovascular event, or neoplasia were observed. Four patients had herpes zoster reactivation during induction phase and two during maintenance period.

Conclusions: In this Swiss UC population, characterized by a complicated disease course and multiple failures to biologic therapies, 60% of patients were still under tofacitinib at week 52 due to continued clinical benefit.

IBD-5

Identification of IL-27 as a novel regulator of major histocompatibility complex (MHC) class I and class II expression, antigen presentation and processing in intestinal epithelial cells

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Background: Antigen presentation via major histocompatibility complex (MHC) receptors plays a fundamental role in T cell-mediated adaptive immunity. Here we aimed to explore the so far unknown role of IL-27 in intestinal epithelial cell (IEC)-mediated antigen presentation and its influence on intestinal immunity.

Methods: IL-27-induced signaling and gene expression in IEC and human intestinal biopsy samples was analyzed by qPCR, Western blot, immunohistochemistry, immunofluorescence and siRNA transfection. The influence of IEC on PBMC proliferation was determined by BrdU assay and ELISA.

Results: IL-27 induced different MHCI and MHCII receptor subtypes and the invariant chain (CD74/ii) in IEC via the STAT1/IRF1/CIITA axis. CIITA, MHCII and CD74 expression was significantly increased in IEC from Crohn's disease (CD) patients with active disease compared to controls or CD patients in remission. IEC phagocytosed and digested external antigens and apoptotic cells. IL-27 strongly stimulated antigen processing via the immunoproteasome in a IRF1-dependent manner. In co-culture experiments, antigen-primed IEC strongly enhanced lymphocyte proliferation and IL-2 secretion, dependent on direct cell-cell contact. IL-27 pretreatment of IEC significantly reduced IL-2 levels in lymphocytes in co-culture.

Conclusion: IL-27 regulates IEC antigen processing and presentation via MHC receptors and thereby enables IEC to act as non-professional APC influencing intestinal immune reactions.

IBD-6

Examining the Resilience of Gut Microbes in the Face of Oxidative Stress

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Introduction: Intestinal inflammation is associated with the overproduction of reactive oxygen species, which leads to an altered exposure to intestinal microbial taxa and amplification of the inflammatory response. However, we lack clear information regarding the long-term adaptive effects of oxidative stress on gut residents.

Methods: Initially, we conducted a comprehensive analysis of gene expression profiles in both IBD and non-IBD patients, specifically focusing on the ileum and colon, while also considering the inflammatory status and disease activity. Subsequently, we isolated approximately 200 microbial strains residing in the outer mucus layer from individuals with ileostomy and colostomy, differentiating between IBD and non-IBD patients. To facilitate their growth, we employed various nutrient-rich media supplemented with additional additives. We then evaluated the stress-resistant capabilities of these isolated strains.

Results: We have observed distinct growth patterns among the isolated strains and their ability to produce antioxidants. The correlation between these findings and host metatranscriptomics data suggests that certain taxa with stress tolerance have the potential to either generate or reduce oxidative stress.

Conclusion: Taken all together, this helps us to identify whether these strains are intrinsically capable of exacerbating or resisting oxidative stress and, therefore, potentially make the host more susceptible to further inflammation with ongoing oxidative stress in the presence of complex microbiota.

ORAL PRESENTATIONS: SESSION HEPATOLOGY I

HI-1

Safety and Bleeding Risk in Ultrasound-Guided Percutaneous Liver Biopsies – A Single Centre Analysis of 1,580 Cases

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Background: Despite being an essential diagnostic tool in hepatology, liver biopsies (LBx) are associated with complications such as bleeding, biliary leakage and organ perforation, especially if performed by the original Menghini method. This study aimed to evaluate the safety of the state-of-the-art ultrasound-guided LBx technique.

Methods: We conducted a retrospective analysis of 1,580 consecutive LBx between 11/2019 and 02/2023 in out- and inpatients performed at our institution. Safety of ultrasound-guided percutaneous LBx (using BioPince® 18G full core biopsy device, throw length 13–33 mm, w/o 16G co-axial introducer needle with Spongostan® as absorbable hemostatic gelatin sponge serving as plug) in non-targeted LBx versus focal liver lesion biopsy were compared to transjugular LBx. Pre-biopsy coagulation parameters (INR, thrombocyte count, anticoagulation, aspirin, NSAID), presence of cirrhosis, ascites, sex and BMI were assessed. Aspirin and other anticoagulants were discontinued seven days prior to LBx, if possible, and thrombocytes were substituted periprocedurally as needed (for biopsies taken in 2022 and 2023 according to the 2022 EASL guidelines).

Results: A total of 1,580 LBx were analyzed: 1,314 (83%) were percutaneous and 266 (17%) were transjugular. In 1,314 percutaneous LBx patients, 165 (12.6%) had thrombocytopenia (Tc <150 G/l), 15 (1.1%) had an INR ≥1.5 and 95 (7.2%) had Aspirin, which could not be stopped for medical reasons. After percutaneous LBx, a total of 9 postinterventional bleeding events or hematomas occurred: 1/810 (0.12%) after non-targeted LBx and 8/504 (1.6%) after focal liver lesion biopsy (3 HCC/CCC and 3 metastases with 3/6 under Aspirin; 1 histoplasmosis, 1 portal vein thrombus). Only 3 (33.3%) out of the 9 patients with bleeding needed intervention by transarterial embolization/coiling to control bleeding (CTCAE grade 4 in 3/1,314 (0.23%) and 3/504 (0.56%), respectively). No fatalities, tumor seeding, biliary leakage or organ perforation were reported in the percutaneous LBx group.

In the 266 transjugular LBx, with significantly higher coagulation impairment (128 (48.1%) with thrombocytopenia <150 G/l and 55 (20.6%) with INR ≥1.5), a total of 6 (2.3%) postinterventional bleeding episodes occurred, including one severe hemorrhage leading to fatal multiorgan failure 4 days after biopsy.

Conclusions: Ultrasound-guided percutaneous liver biopsies are generally safe, with hemodynamically significant post-interventional bleeding being a rare complication, primarily occurring after biopsy of focal liver lesions in patients on Aspirin.

HI-2

High prevalence of short telomeres in patients with idiopathic porto-sinusoidal vascular disorder

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Background: Telomeric DNA prevents the loss of coding DNA as end-nucleotides are lost during mitosis. Monogenic mutations in telomere maintenance genes cause their excessive shortening, leading to cells senescence and systemic organ dysfunction, a condition referred to as short telomere syndrome (STS). Portal vein stenosis and nodular regenerative hyperplasia, manifestations of porto-sinusoidal vascular disorder (PSVD), have both been documented in STS. Because the etiology of many cases of PSVD remains unknown, this study aimed to explore the extent to which short telomeres are present in patients with idiopathic PSVD.

Methods: This single-center study included patients with idiopathic PSVD confirmed by precisely defined histological criteria. Telomere length in six peripheral blood leukocyte subpopulations was assessed by multicolor flow cytometry (flow FISH).

Results: In total, 28 patients were included of whom 19 (68%) had short (12/29) or very short (7/29) telomeres, while nine (32%) had telomere lengths in the age-adjusted reference range defined in healthy individuals. Seventeen (61%) had clinically significant portal hypertension. Short telomeres were more frequent in males ($p = 0.006$), in patients with portal hypertension ($p = 0.026$) as well as in patients with concomitant interstitial lung disease ($p = 0.001$), chronic kidney disease ($p = 0.002$) and erythrocyte macrocytosis ($p = 0.001$). Low serum albumin ($p = 0.004$), low platelet counts ($p = 0.048$), hyperbilirubinemia ($p = 0.029$) and a dysmorphic liver on imaging studies ($p = 0.012$) were also associated with short telomeres. To our knowledge, this is also the largest cohort of histologically defined PSVD patients with telomere length measurements.

Conclusions: Short telomeres were present at a remarkably high rate in patients with idiopathic PSVD, reinforcing the hypothesis that they may contribute to the pathogenesis of vascular liver disease. Studies investigating the genetic basis in our cohort are ongoing.

HI-3

Evolution of clinical presentation, treatment and prognosis of patients with alveolar echinococcosis treated at the University Hospital Zurich: a 50-year experience

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Background: Alveolar echinococcosis (AE) is an orphan zoonotic liver disease of increasing concern in Switzerland. The study aim was to evaluate the evolution in the presentation, treatment and prognosis of AE patients over the past 50 years.

Methods: Retrospective cohort study of 332 AE patients who were treated at the University Hospital Zurich between 1973-2022. Analysis included patient demographics, symptomatology, AE stage according to PNM classification, treatment type, outcome and overall survival; stratified by decade of diagnosis.

Results: Over the decades patient demographics did not change significantly, with a median age at diagnosis of 58 years. Since 2000 a steady increase in new diagnosis of AE was observed, with an increasing proportion attributable to incidental diagnosis. This was accompanied by a shift towards earlier stages. Contradictory, however, fewer patients underwent surgical resection. The 15-year overall survival rate remained consistent at 80% throughout the decades without significant variation and association with the disease stage. Only very few AE-related fatalities were recorded. Median age at death was 77 years.

Conclusion: Significant changes in incidence, stage at presentation and treatment of AE patients were observed over the past 50 years. Impact of AE on overall survival was minimal.

HI-4

Baseline liver biopsy alterations in patients with severe alcoholic hepatitis: could histology predict steroid non response?

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Background: Prednisone is the only treatment with recognized short-term survival benefit in severe biopsy-proven alcoholic hepatitis (AH). The Lille score (www.lillemodel.com) identifies at day 7 of treatment patients with poor prognosis in whom steroids have to be stopped. We aimed to explore whether histology on baseline pre-treatment liver biopsy (LBx) could detect differences between steroid responders (SR) (Lille score <0.45) and non responders (NR).

Methods: This retrospective study (1.2015 to 3.2023) included patients with severe AH (Maddrey >32), baseline LBx available, no sepsis, no viral hepatitis, Lille score guided therapy with steroids indicating SR or NR at day 7 of prednisone. We used a semi-quantitative scoring system of histological features adapted from a recent publication (Virchows Archiv 2018). Examinators were blinded to clinical and biological data.

Results: Among the 67 patients included, 38 were SR (mean age 53 yrs, 31% female, MELD 19) and 29 were NR (mean age 61 yrs, 34% female, MELD 24). Compared to SR, patients with

steroids NR were older, had a higher MELD score (p <0.05) but similar baseline serum bilirubin, Maddrey score and severity of portal hypertension. The table describes the most relevant histological lesions (Fisher exact test)

Histological alteration	SR (n = 38)	NR (n = 29)	p value
Steatosis	++	++	NS
Fibrosis	+++	+++	NS
Mallory-Denk	++	++	NS
Canalicular cholestasis	++	+++	0.04
Total histological score	8.4	9,9	0.05

Conclusions: In patients with severe AH, canalicular cholestasis in the absence of sepsis is associated with steroid NR and could help to early identify patients with a poor prognosis. Having liver histology available may bring important information in this clinical setting.

HI-5

Cost-effectiveness of Hepatocellular Carcinoma (HCC) Surveillance Strategies in Switzerland

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**At the time of analysis*

Background: Hepatocellular carcinoma (HCC) surveillance using ultrasound (US), with or without alpha-fetoprotein (AFP), is recommended every 6 months for high-risk groups; however, novel serum-based tools are needed to improve diagnostic performance of HCC surveillance. The GAAD algorithm is a novel *in vitro* diagnostic tool that combines Gender (biological sex) and Age with measurements of Elecsys® AFP and protein induced by vitamin K absence-II (previously DCP) assays.

Here, we analyse the cost-effectiveness (CE) of different HCC surveillance strategies in Switzerland.

Methods: A micro-simulation Markov model was developed from the perspective of the Swiss healthcare system to estimate the total costs and quality-adjusted life-years (QALYs) per patient for four different HCC surveillance strategies: no surveillance, US, US+AFP and GAAD. Parameters were sourced from published literature and cost databases. Multi-way sensitivity analyses were performed to analyse joint parameter uncertainty and to build CE planes and CE acceptability curves.

Results: The simulated cohort consisted of 100,000 patients aged ≤75 years with non-cirrhotic hepatitis B infection, stage 3 fibrosis, or compensated liver cirrhosis. The costs and QALYs per patient, respectively, were 27,970 Swiss Francs (CHF) and 9.529 for no surveillance, CHF31,213 and 9.569 for US, CHF32,433 and 9.579 for US+AFP and CHF31,768 and 9.583 for GAAD. At a CE threshold of CHF100,000 per additional QALY (less than twice the GDP in Switzerland), GAAD was the most cost-effective strategy among the four HCC surveillance strategies.

Conclusions: GAAD could be considered the most cost-effective HCC surveillance strategy compared with no surveillance, US and US+AFP (the current standard of care for HCC surveillance in Switzerland).

HI-6

Hepatocellular carcinoma risk stratification of patients with chronic hepatitis C using molecular signatures from human liver biopsies

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Background: Patients with chronic hepatitis C virus (HCV) infection and advanced fibrosis or cirrhosis are at risk for hepatocellular carcinoma (HCC). The increased risk persists even after viral eradication by antiviral therapies. Identification of patients at high risk of HCC remains challenging, because the molecular carcinogenesis of HCC in the context of chronic hepatitis C (CHC) is poorly understood. Current risk scores rely on demographics and laboratory data and have low predictive accuracy and are therefore not routinely used in the clinics.

Hence, in the current study we aim to identify molecular predictors of HCC risk in patients with severe fibrosis or cirrhosis due to CHC infection with the aim to develop a prognostic model for HCC development.

Method: In this case-control study, we identified 17 individuals with CHC that developed HCC. These individuals were propensity-score matched (1:2) to 34 individuals with CHC and no HCC, based on age, sex, genotype, viral load, Child score, MELD score, transaminases levels, HCV treatment and SVR, diabetes mellitus and history of concomitant alcohol consumption. We analyzed intrahepatic RNA and whole exome sequencing data from 17 liver biopsies of HCV-HCC patients. The biopsies were obtained between 0.6 and 12.7 years (median 5.9 years) before HCC development.

Results/Conclusions: In the transcriptomics data, we found two clusters with centroids separating patient groups. We identified ~1400 differentially expressed genes, some of which are associated with cell division pathways. Furthermore, we explore germline and somatic mutations that might have predictive value. Finally, we combine the best predictive markers to build a prognostic model for HCC development in CHC.

ORAL PRESENTATIONS: SESSION ENDOSCOPY

Endo-1

A Tissue Systems Pathology Test Outperforms Pathology Review in Risk Stratifying Patients with Low-Grade Dysplasia

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Background: Low-grade dysplasia (LGD) is associated with an increased risk of progression in Barrett's esophagus (BE), but the diagnosis of LGD is limited by substantial interobserver variability. Multiple studies have shown that an objective tissue systems pathology test (TissueCypher Barrett's Esophagus Assay, TSP-9), can effectively predict neoplastic progression in patients with BE. This study aimed to compare the risk stratification performance of the TSP-9 test versus benchmarks of generalist and expert pathology.

Methods: A blinded cohort study was conducted in the screening cohort of a randomized controlled trial of BE patients with community-based LGD. Biopsies from the first endoscopy with LGD were assessed by the TSP-9 test and independently reviewed by 30 pathologists.

Results: 154 BE patients (122 men), mean age 60.9+/-9.8 years were studied. Twenty-four patients progressed to HGD/EAC within 5 years (median time of 1.7 years) and 130 did not progress to HGD/EAC within 5 years (median 7.8 years follow-up). The TSP-9 test demonstrated higher sensitivity (71% vs. mean 63%, range 33-88% across 30 pathologists), than the pathology review in detecting patients who progressed ($P = 0.01186$).

Conclusions: The TSP-9 test outperformed the pathologists in risk-stratifying BE patients with LGD. Care guided by the test can provide an effective solution to variable pathology review of LGD, improving health outcomes by upstaging care to therapeutic intervention for patients at high risk for progression, while reducing unnecessary interventions in low-risk patients.

Endo-2

Endoscopic ultrasound-guided pancreatic duct drainage: a single center observational study

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Background: Pancreatic duct (PD) obstruction can cause pain and atrophy of the pancreatic parenchyma. Endoscopic drainage is the first-line treatment, usually by endoscopic retrograde cholangiopancreatography (ERCP). In some patients, the classic transpapillary approach cannot be performed because of anatomical inability to access the papilla, rupture of the PD, intracanal stones that cannot be crossed or tight stenosis of the duct. Endoscopic ultrasound-guided PD drainage (EUS-PDD) is an efficient and minimally invasive therapeutic alternative for these patients. We aimed to evaluate technical and clinical success of EUS-PDD.

Methods: Data of patients who underwent EUS-PDD at the university hospital in Lausanne (CHUV) were retrospectively reviewed. Technical success was defined as successful stent placement in PD. Clinical success was defined as pain ≤ 2 on the

Numerical Rating Scale (NRS, 0-10) and no recurrence of obstructive pancreatitis post procedure.

Results: 46 patients (mean age 58 years old, 69.6% male) were included. Indications of EUS-PDD were chronic calcifying pancreatitis in 69.6% of patients (78.1% due to alcohol abuse). Other indications included post-operative complications, rupture of PD and pancreatic cancer. The average intervention time was 51 minutes and mean hospital stay was 2 days. Technical success was achieved in 93.5% of patients. Clinical success was 93%. Remaining pain NRS >2 occurred in 9.3% of patients and obstructive pancreatitis recurrence in 6.9%. Adverse event occurred in 5 patients (11.6%). 18 stent dysfunctions were observed, 16 stent migration and 2 stent obstruction. No patient died from the procedure.

Conclusion: EUS-PDD had a high technical and clinical success rate. It is therefore a good minimally invasive alternative to avoid pancreatic surgery in patients with failed ERCP.

Endo-3

Waste audit- Swiss data on waste production and composition in a large endoscopy unit

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Background: Endoscopy units are one of the most resource-intensive departments in a hospital, generating large quantities of CO₂. We sought to investigate feasibility of an audit of waste production and composition in our facility to guide interventions towards reduction, re-use and recycling.

Methods: During one week in March 2023, we performed a structured waste audit in the endoscopy department of the university hospital of Basel, a tertiary referral center in northwestern Switzerland, performing >6000 endoscopic procedures per year. Waste was collected separately in patient specific bags for each procedure from preparation of the patient to discharge by two investigators. The use of sharps and reusable equipment (e.g., tubing etc.) was included in the calculation of the waste generated each procedure.

Results: During the study period, the routine of the endoscopy unit was not disrupted. Waste produced by 75 examinations were analyzed. Median waste production was 910 g/ Gastroscopy, 1060g/ Colonoscopy, 1110g/ Gastro-and Colonoscopy, 1240 g/ Sigmoidoscopy and 1823 g/ ERCP or EUS. This adds up to 26 kg of waste per day or 52 t of CO₂ generated by incineration every year by our endoscopy unit.

Conclusions: A structured waste audit can easily be incorporated into the daily practice of an endoscopy unit without impacting patient care and using few resources. Gastroscopy and Colonoscopy should be performed in one procedure if feasible to reduce waste.

Endo-4**One-year intestinal ultrasound improvements in UC patients on biologic or JAKi therapy – interim results of the TRUST BEYOND study**

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Background: Transmural response (TR) and healing (TH) assessed by intestinal ultrasound (IUS) are gaining increasing relevance as treatment targets in Crohn's disease (CD).

Aims and methods: The TRUST BEYOND study is an ongoing, prospective, non-interventional, multi-centre study in patients with active CD or UC who receive a biologic- or Januskinase-inhibitor therapy at baseline. The study aims to assess the predictive value of TR or TH, evaluated at week 12 for the disease outcome after 52 weeks (TR: reduction of bowel wall thickness (BWT) of at least 25% and/or normalization; TH: normalization of BWT and Colour Doppler signal). For this interim analysis, we report IUS and clinical results as well as fecal calprotectin levels of 77 UC patients on the same therapy after 12 (W12) and 52 weeks (W52) and assessed the predictive value of TR at W12 for clinical remission at W52.

Results: 77 UC patients, 63.6% male, median age 38.6 years (30.6–55.7) median disease duration of 5.85 years (2.49–12.77) with clinically active disease (SCCAI 8.5 ± 2.2) with increased BWT at baseline had a documented visit after 52 weeks until February 2023. For the vast majority, the most affected bowel wall segment was the sigmoid colon with a mean BWT of 5.22 ± 1.28 mm at baseline. At W12 after induction of therapy, the proportion of UC patients with TR and TH was 67.5% (n = 52) and 31.2% (n = 24). At W52, the rates of UC patients increased to 77.9% (n = 60) for TR and 41.6% (n = 32) for TH. Over the study course, patients with TR at W12 and W52 had a numerically lower SCCAI score and reduced fecal calprotectin levels than patients without TR. Of note, 72.2% (n = 39) of patients with TR at W12 were in clinical remission at W52 compared to 27.8% (n = 15) of patients without early transmural response (p = 0.178).

Conclusion: In this interim analysis of the TRUST BEYOND study, UC patients demonstrated substantial rates of transmural improvements on IUS after 12 and 52 weeks. Patients with early transmural response were more likely to be in remission after one year. This suggests that in UC, IUS has to some degree a predictive value as observed for CD.

Endo-5**Prevalence of Fatigue and Associated Factors in Patients Undergoing Treatment for Inflammatory Bowel Disease – A Cross-Sectional Quality Control Study**

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Background: Fatigue is frequently observed in patients with Inflammatory Bowel Disease (IBD) such as Crohn's Disease (CD) and Ulcerative Colitis (UC). This study aimed to determine the

prevalence of fatigue and associated factors in IBD patients undergoing infusion therapy.

Methods: This was an observational, prospective cross-sectional study. To determine the prevalence of fatigue the Visual Analogue Scale for Fatigue (VAS-F, range 0- 10) and the Fatigue Impact Scale (FIS, range 0- 160) were used. A VAS-F score ≥4 was set as significant fatigue. To screen for depression the Patient Health Questionnaire- 8 (PHQ- 8) was used. A PHQ-8 score ≥10 was set as cut-off for current depression. Furthermore, laboratory parameters such as anemia (Hb ≤120 g/l female, Hb ≤140 g/l male), iron deficiency (Ferritin ≤30 µg/l), vitamin D deficiency (≤50 nmol/l), low vitamin B12 levels (≤150 pmol/l) were analyzed as possible associated factors. Disease activity was measured clinically with the Modified Harvey Bradshaw Index (mHBI) for CD and the partial Mayo Score (pMayo) respectively the Modified Truelove and Witts Severity Index (MTWSI) for UC.

Results: Out of 298 screenings, a total of 216 IBD patients of whom 135 (62.5%) were diagnosed with CD and 81 (37.5%) with UC were included. Overall, 53.2% (n = 115) reported significant fatigue (VAS-F score ≥4). In CD patients a prevalence of 47.4% and in UC patients of 63.0% was observed. In patients with remission 43.6% and in patients with active disease 70.7% significant fatigue was found. The prevalence of depression (PHQ-8 score ≥10) was 34.8% in patients with fatigue vs. 4.0% in patients without fatigue. Anemia and iron deficiency were observed in 26% resp. 19.1% in patients with fatigue and in 23.8% resp. 12% in patients without fatigue. Vitamin D deficiency was observed with similar frequencies of 34.5% in patients with vs. in 32.7% in patients without fatigue. Low vitamin B12 levels were present in 3.5% in patients with vs. in 7.2% in patients without fatigue.

Conclusions: Significant fatigue symptoms are highly frequent in patients with IBD and depend on disease activity. A third of these IBD patients with fatigue report depressive symptoms suggesting closer monitoring for depression in patients with IBD.

Endo-6**Corticosteroid discontinuation and clinical outcomes in patients with moderately to severely active Crohn's disease treated with upadacitinib**

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Background: Safety and efficacy of upadacitinib (UPA), an oral selective Janus kinase inhibitor, were evaluated among patients with moderate-to-severe CD receiving UPA with Corticosteroids (CS) at baseline in phase 3 clinical trials.

Methods: In 2 phase 3 studies, patients with CD were randomized to 12-week induction with UPA 45 mg once daily (QD) or placebo (PBO). Patients who achieved clinical response to UPA 45 mg were rerandomized to UPA 30 mg QD, UPA 15 mg QD, or PBO for a 52-week maintenance period. Patients taking CS at baseline or week 0 of maintenance (end of induction) were

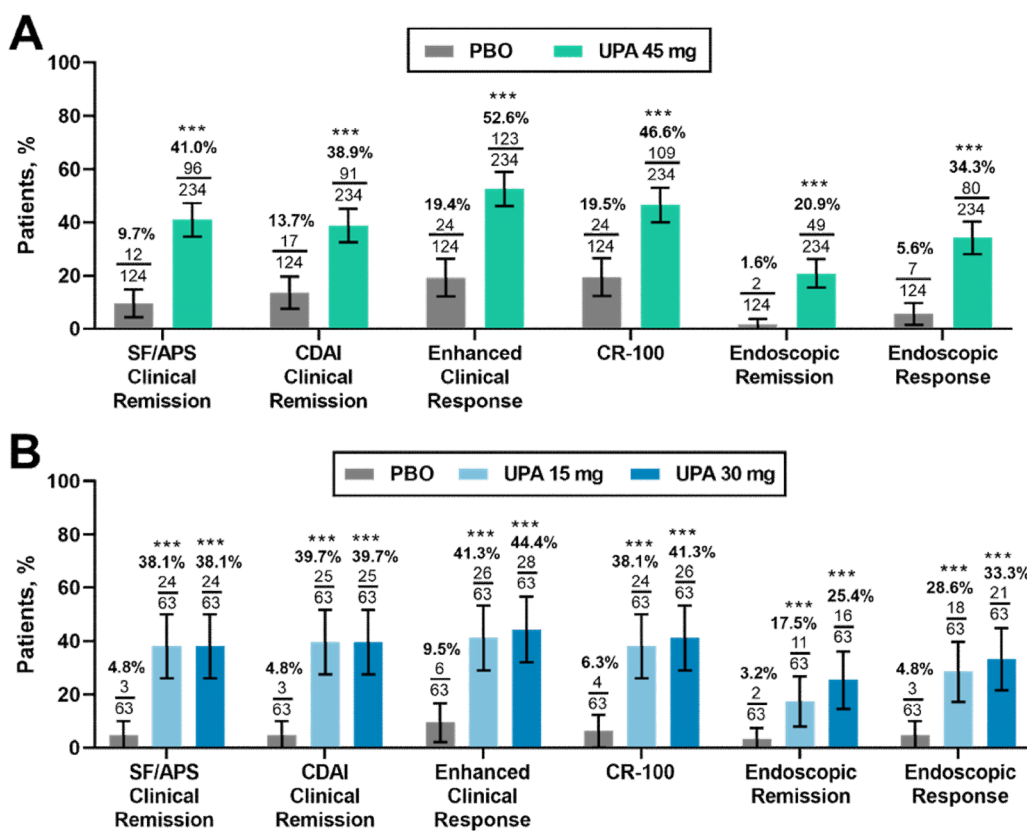
included. A CS taper began at induction week 4 and continued during maintenance. Endpoints included the proportion of patients who discontinued CS use at week 12 or for ≥ 90 days prior to week 52, and achieved clinical remission by stool frequency/abdominal pain score or by Crohn's Disease Activity Index (CDAI), enhanced clinical response, decrease of at least 100 points in CDAI from baseline, endoscopic remission, and endoscopic response at week 12 and week 52. CS daily dose (in prednisone equivalent doses) was recorded.

Results: Of 1021 patients evaluated, 358 (35.1%) were taking CS at baseline (mean daily prednisone equivalent dose, 23.0 mg). The proportion of patients who achieved a $\geq 50\%$ reduction in CS daily dose was higher with UPA vs PBO at induction week 12 among patients taking CS at baseline (72.6% vs 48.4%) and

at week 52 among patients taking CS at baseline or week 0 of maintenance (UPA 30 mg, 49.2%; UPA 15 mg, 44.4%; PBO, 11.1%). A significantly higher proportion of patients taking UPA vs PBO were CS-free and achieved clinical remission, clinical response, endoscopic response, and endoscopic remission at week 12 (Fig 1A) and week 52 (Fig 1B). Rates of adverse events (AEs), serious AEs, and discontinuation were comparable between groups.

Conclusion: Patients with CD taking CS were able to taper and discontinue their CS regimen and experience clinical and endoscopic improvements with UPA treatment during the induction and maintenance periods.

Figure 1. Proportion of Patients Who Were Corticosteroid-Free and Achieved Clinical and Endoscopic Endpoints at Induction Week 12 (A) and Maintenance Week 52 (B) Among Patients Taking Corticosteroids at Induction Baseline or Week 0 of Maintenance



APS, abdominal pain score; CDAI, Crohn's Disease Activity Index; CR-100, clinical response 100; CS, corticosteroids; PBO, placebo; SF-CD, Simplified Endoscopic Score for Crohn's Disease; SF, stool frequency; UPA, upadacitinib.

Data are percent of patients (95% CI). Values above bars are percent of patients and n/n. Corticosteroid-free in the induction studies: patients who discontinued CS use by week 12, in patients taking CS at baseline.

Corticosteroid-free in the maintenance study: patients who discontinued CS use within 90 days prior to week 52, in patients taking CS at baseline or week 0 of maintenance.

SF/APS clinical remission: average daily very soft or liquid SF ≤ 2.8 and average daily APS ≤ 1.0 and both not greater than baseline.

CDAI clinical remission: CDAI < 150 .

Enhanced clinical response: $\geq 60\%$ decrease in average daily very soft or liquid SF and/or $\geq 35\%$ decrease in average daily APS and both not greater than baseline. CR-100: decrease of at least 100 points in CDAI from baseline.

Endoscopic remission: SES-CD ≤ 4 and ≥ 2 -point reduction from baseline and no subscore > 1 in any individual variable.

Endoscopic response: decrease in SES-CD $> 50\%$ from baseline of the induction period (or for patients with isolated ileal disease and an SES-CD of 4 at baseline, at least a 2-point reduction from baseline).

*** $P < .001$ vs PBO.

ORAL PRESENTATIONS: SESSION EOSINOPHILIC ESOPHAGITIS

EOE-1

Histological phenotyping in eosinophilic esophagitis: Localized proximal disease is infrequent, but associated with less severe disease and better disease outcome

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Background: It is still unknown whether eosinophilic esophagitis (EoE) patients with localized disease are different from those with extended disease.

Methods: We evaluated prospectively included patients in the Swiss EoE cohort. Data on all patients with active disease at baseline, no concomitant gastro-esophageal reflux disease, no strictures at baseline and at least one follow-up visit were analyzed. We compared patients with *histologically* localized proximal vs distal vs. extended (= proximal and distal) disease with regards to patient, disease characteristics, disease presentation and development of complications.

Results: We included 124 patients with a median of 2.5y of follow-up (73.4% males, median age 35.0y). Ten patients had proximal (8.1%), 46 patients had distal (37.1%), and 68 patients had extended disease (54.8%). Patients with proximal disease were significantly more often females (80%) compared with patients with distal (26.1%, $p = 0.002$) or extended disease (19.1%, $p < 0.001$) and reported less severe symptoms (VAS 0 vs VAS 1, $p = 0.001$). Endoscopic and histological disease was less pronounced in the proximal esophagus of proximal EoE compared to extended disease (EREFS 1.0 vs 3.0, $p = 0.001$; 27.0eos/hpf vs 52.5eos/hpf, $p = 0.008$). Patients with proximal disease were less likely to undergo dilation compared to patients with distal disease in the follow-up (3.3% vs 23.3%, $p = 0.010$). In a multivariate Cox regression model, proximal eosinophilia was less likely to be associated with treatment failure compared to distal eosinophilia.

Conclusion: Although isolated proximal EoE is infrequent, it is associated with less severe disease and better disease outcome. Proximal disease appears to present a unique EoE phenotype.

EOE-2

Unraveling the Role of GPR35 in Eosinophilic Esophagitis

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Background: Eosinophilic esophagitis (EoE) is a chronic inflammatory disorder characterized by the intricate interplay between cytokines and preserving epithelial barrier integrity. Recent research has underscored the significance of the G protein-coupled receptor (GPR)35 in governing cytokine modulation and maintaining epithelial integrity. However, the precise extent of its involvement in EoE still needs to be understood.

Methods: In this study, we investigated the expression of GPR35 in human esophageal biopsies and murine tissue. An EoE disease model was induced in Gpr35^{-/-} mice through epicutaneous sensitization followed by oral challenge with ovalbumin.

Results: Our findings revealed a significant upregulation of GPR35 expression in esophageal biopsies from individuals with active EoE. In an experimental EoE mouse model, we observed high expression of Gpr35 predominantly in macrophages and dendritic cells within the esophagus. Genetic deletion of Gpr35 in mice resulted in attenuated EoE and decreased levels of Il-18, an important cytokine associated with the condition. Employing docking experiments, we identified a potential endogenous ligand for GPR35: the tryptophan derivative 8-methoxykynurenate, hereby addressing the current challenge of classifying GPR35 as an orphan receptor. Ultimately, the in-vitro stimulation with several GPR35 ligands of macrophages resulted in augmented Il-18 expression.

Conclusion: This study aims to elucidate the mechanisms underlying the Gpr35-mediated cytokine release by myeloid cells, thereby unraveling the underlying factors contributing to EoE. Uncovering these pathways holds promise for identifying novel therapeutic approaches to effectively manage EoE.

EOE-3

Characterization of Rgs14 in inflammatory bowel disease

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Background: Rgs14 has been identified as a risk gene for ulcerative colitis. Rgs14, a member of the regulator of the G protein signaling family, negatively regulates signal transduction by accelerating the GTPase activity of G protein alpha subunits, thereby driving them into their inactive GDP-bound form. The mechanisms by which Rgs14 modulates intestinal immune homeostasis remain undefined.

Methods: We analyzed the expression of Rgs14 in patient samples and colitis models through qPCR analysis. To identify the impact of Rgs14 on colitis, DSS colitis was applied to conditional knock-out mice in which rgs14 is knocked out either in CX3CR1 positive macrophages or epithelial cells.

Results: Inflammatory bowel disease (IBD) patients showed increased Rgs14 expression in qPCR analysis. Crohn's disease and ulcerative colitis had higher Rgs14 expression levels in inflamed regions than in the non-inflamed areas. After conditional deletion of Rgs14 in macrophages and epithelium, the DSS colitis model was applied to the conditional knocked-out mice and their littermates. The conditional deletion of Rgs14 in macrophages aggravates colitis, while conditional deletion of Rgs14 in epithelium did not change colitis severity.

Conclusion: Our results indicated that the deletion of Rgs14 in colonic epithelial cells has no impact on murine colitis and that Rgs14 deletion in macrophages plays an important role in colitis. How Rgs14 affects the function of macrophages has yet to be solved.

ORAL PRESENTATIONS: SESSION CLINICS AND SCIENCE IN ONE (CASINO)

CG1

Systemic and T cell-associated responses to SARS-CoV-2 immunization in gut inflammation (STAR SIGN study): Effects of biologics on vaccination efficacy of mRNA vaccines against the novel SARS-CoV-2 variants of concern BQ.1.1 and XBB.1.5

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Background and Aims: Anti-TNF-treated patients affected by inflammatory bowel diseases (IBD) have reduced immune responses after vaccination against several viruses. We therefore aimed to characterize long-term systemic and functional im-

munity against wildtype SARS-CoV-2 (WT) and variants of concern (VOCs) in immunosuppressed IBD patients following SARS-CoV-2 vaccination.

Methods: This prospective multicenter case-control study included 139 biologic-treated IBD patients and 110 healthy controls. Surrogate neutralization (SN) against WT and VOCs BA.1, BA.5, BQ.1.1, and XBB.1.5, as well as serum anti-spike IgG concentration were measured 2 to 16 and 22 to 40 weeks following third dose SARS-CoV-2 vaccination. The primary outcome was SN against WT and VOCs. Secondary outcomes were the proportion of participants with non-inhibitory SN, long-term anti-spike IgG concentration, and antibody decline.

Results: SN against all tested SARS-CoV-2 strains was lowest in anti-TNF-treated IBD patients but not affected by non-anti-TNF biologics (Table 1). Accordingly, the proportion of individuals with non-inhibitory SN was higher among anti-TNF-treated IBD patients for all tested VOCs. Reassuringly, SN against WT and VOCs was increased by Omicron breakthrough infection. In a linear regression model, anti-spike IgG concentrations 22 to 40 weeks after vaccination were reduced in IBD patients on anti-TNF therapy compared to non-anti-TNF therapy (geometric mean ratio 0.31 [95% CI 0.20-0.47]; p <0.001) and in current smokers (0.50 [0.29-0.87]; p = 0.016) but were increased in participants with breakthrough infection (4.28 [2.63-6.97]; p <0.001). In an additional linear regression model, IgG half-lives were lower in those receiving anti-TNF therapy compared to healthy controls (ratio of half-life 0.64 [95% CI 0.46-0.89]).

Conclusions: Anti-TNF-treated IBD patients have impaired humoral and functional immunogenicity against VOCs and may benefit from fourth dose vaccination.

Table 1: Surrogate neutralization against WT and VOCs, stratified by study group.

	Healthy controls	Anti-TNF-α	Non-anti-TNF-α
n	48	59	39
WT (median [IQR])	73.71 [60.71, 83.54]	42.28 [24.83, 71.15]	72.12 [58.81, 89.95]
Omicron.BA1 (median [IQR])	19.60 [13.23, 32.22]	7.00 [4.00, 13.20]	25.88 [9.00, 47.06]
Omicron.BA5 (median [IQR])	15.52 [5.88, 28.89]	1.34 [0.00, 11.21]	17.28 [0.63, 43.67]
BQ.1.1. (median [IQR])	8.56 [2.23, 22.02]	0.00 [0.00, 3.16]	10.48 [4.06, 30.83]
XBB.1.5 (median [IQR])	10.16 [5.39, 22.01]	2.01 [0.00, 6.86]	16.27 [3.82, 28.74]

CG2

A2 beta casein milk is tolerated in a subset of patients with milk-induced eosinophilic esophagitis

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Background: Eosinophilic esophagitis (EoE) is a food allergen driven chronic Th2 inflammatory disorder of the esophagus with milk being the most frequently identified food culprit. As increasing prevalence of EoE parallels industrial changes in dairy production, one may assume a causal association. In fact, a dominant point mutation in beta casein occurred in ancestors

to modern European type cattle with a shift from A2 milk (original beta casein without point mutation) to A1 milk (with at least one point mutation). As of yet, nothing is known about the allergenic potential of A1 vs A2 milk and its implications in the pathogenesis of eosinophilic esophagitis.

Methods: This was an observational retrospective analysis of patients with milk-induced EoE that underwent challenge with commercially available A2 milk in the Swiss EoE cohort. Tolerance of A2 milk was defined by a peak eosinophil count of <15 eos/hpf after 3 months exposure. Patients were excluded if they received co-treatment, were diagnosed with acid reflux or had previous response to PPI. To assess milk type's allergenic potential, rat basophil leukemia (RBL) cell model was used.

Results: Seven patients with proven milk-induced EoE (4 males, age 36.7y, diagnostic delay 54.9 months) underwent A2 milk

exposure. Five patients underwent A2 challenge as maintenance treatment, two as induction treatment. After a median of 14.6 weeks (IQR 10.5-15.6), 3 patients were in histological remission (42.9%), 1 patient showed a partial remission (with only very distal eosinophilia), while in 3 patients A2 exposure was not successful (1 withdrawal due to clinical relapse after 3 days, 1 withdrawal due to pregnancy). When looking at the 5 patients within the maintenance strategy only (duration of exposure 12.4, 8.6-14.9 weeks), 4 patients showed an ongoing response (80%), while 3 of them remained in histological remission (60%). Peak eosinophil counts decreased significantly under milk elimination diet compared to active disease without diet (50, 40-100 vs 5, 0-12 eos/hpf, $p = 0.018$), but did not increase under A2 exposure (7, 0-40 eos/hpf). Standard milk and A2 milk showed similar amount of histamine release in the RBL cell model.

Conclusion: Our study identifies – for the first time – one specific food protein as culprit allergen in the pathogenesis of EoE. A2 milk exposure appears to be a possible strategy for maintaining disease remission in patients with proven milk-induced EoE. These results cannot be explained by a typical IgE mediated mechanism.

CG3

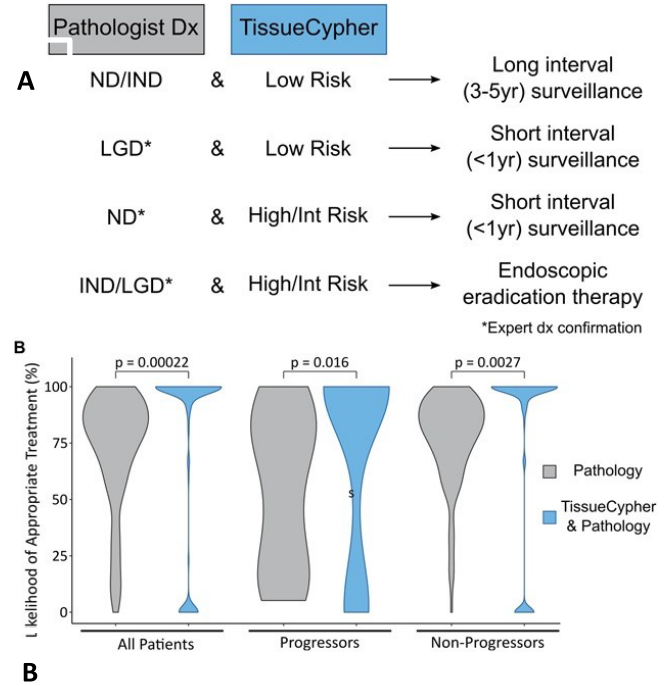
An Objective Spatialomics Test Standardizes Management Decisions With Potential to Improve Health Outcomes for Barrett's Esophagus

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Background: The diagnosis of low-grade dysplasia (LGD) in Barrett's esophagus (BE) is associated with increased risk of progression to high grade dysplasia (HGD) or esophageal adenocarcinoma (EAC). However, due to substantial observer variability in the diagnosis of LGD, a patient's management plan and health outcome depends largely on which pathologist reviews their case. An objective spatialomics test (TissueCypher) may predict neoplastic progression in BE patients with higher sensitivity than pathology review. This study evaluated the test's potential to augment pathology to standardize clinical management in a manner consistent with improved health outcomes for BE patients.

Methods: 154 BE patients with community-based LGD from a prospective cohort were studied. All biopsies with LGD were independently reviewed by 30 international pathologists, and also assessed by the spatialomics test that scores patients as low-, intermediate or high-risk for progression to HGD/EAC. Each patient's journey from diagnosis to surveillance and treatment was simulated 500 times with varying pathology reviewers to determine the most likely care plan with or without the test to guide management. The percentage of patients receiving appropriate management was calculated based on known progression/non-progression outcomes.



(A) TissueCypher-guided management in conjunction with pathology review of patients with initial community-based diagnosis of LGD.

(B) Likelihood of appropriate management using pathology review alone vs TissueCypher-guided management in conjunction with pathology. Appropriate management for progressors was endoscopic eradication therapy or short interval surveillance in less than 1 year. Appropriate management for non-progressors was long interval surveillance in 3-5 years. The pathology alone arm assumed that clinicians followed the current standard of care guidelines. Maximum width of violin plots held constant; within each paired group (All, Progressors, Non-Progressors) observation number is the same. p values calculated by Wilcoxon paired test.

Results: Use of the spatialomics test in conjunction with pathology review of LGD increased the likelihood of appropriate management from median 80% (IQR 63-91) to 100% (89-100) ($p = 0.00022$). Likelihood of appropriate management was significantly increased in the patients who progressed to HGD/EAC from median 63% (IQR 24-83) to 100% (IQR 23-100) ($p = 0.016$) and from 82% (IQR 70-93) to 100% (IQR 91-100) ($p = 0.0027$) for patients that did not progress within 10 years.

Conclusions: The spatialomics test offers an effective solution to subjective and variable pathology review by providing objective risk stratification in BE patients with a community-based diagnosis of LGD. Management guided by this test may help to standardize care plans, increasing the early detection of progressor patients who can receive interventions that effectively prevent progression, while also increasing the percentage of non-progressors who can safely avoid unnecessary therapy and be managed by a surveillance-only approach, justifying intensified endoscopic surveillance from the subgroup of low-risk patients amenable to prolonged surveillance intervals.

CH1

Inhibition of the transmembrane transporter ABCB1 overcomes resistance to doxorubicin in patient-derived organoid models of hepatocellular carcinoma

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Background: Transarterial chemoembolization (TACE) is the first-line treatment for intermediate-stage hepatocellular carcinoma (HCC). However, the efficacy of TACE is variable and the molecular determinants of response are poorly understood. Patient-derived HCC organoids (HCCOs) offer a novel platform to study the variability of doxorubicin responses and the impact of hypoxia on tumor cell proliferation.

Methods: We assessed the effects of hypoxia and doxorubicin on cell viability and cell cycle distribution in twenty patient-derived HCCO models. The transcriptomes of sensitive and resistant HCCOs were compared to identify HCCO-intrinsic determinants of doxorubicin response. Small molecule inhibition was used to validate candidate genes.

Results: Hypoxia reduced the proliferation of most HCCOs. Response to doxorubicin was highly variable, with IC50s ranging from 29nM to >1µM. Doxorubicin and hypoxia had additive effects in some HCCOs. Doxorubicin similarly affected the cell cycle of HCCOs under normoxia and hypoxia. Genes related to drug metabolism and export, most notably ABCB1, were differentially expressed between doxorubicin-resistant and sensitive HCCOs. Small molecule inhibition of ABCB1 decreased drug tolerance in resistant HCCOs.

Conclusions: ABCB1 is a determinant of doxorubicin response in HCCOs. Combination treatment of doxorubicin and ABCB1 inhibition may increase the response rate to TACE.

CH2

Anti-nucleosome antibodies as an important marker to distinguish between autoimmune hepatitis and drug-induced liver injury

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Background: Differentiation between AIH and DILI is often difficult. Our aim was to investigate the antigen-specificity of antinuclear antibodies (ANA) in AIH and DILI patients.

Methods: Samples were obtained from the Hepatology Biobank of the University Hospital Bern, from patients with AIH or DILI who were ANA positive. ANA testing was performed with indirect immunofluorescence, followed by pattern specific antibody (ab) testing with enzyme-linked immunosorbent assays according to the International Consensus on Antinuclear Antibody Patterns. Based on the descriptive results, we built a random forest model.

Results: Fifty-four AIH and 29 DILI patients were identified. Median (IQR) age at diagnosis was 57 years (43.5, 67.8) in the AIH versus 58 years (40, 65) in the DILI group. 74% were women in AIH and 65.5% in DILI. In AIH patients, anti-nucleosome-ab were found in 37% of patients versus 7% in DILI ($p < 0.01$), anti-histone-ab in 30% in AIH compared to 3% in DILI ($p < 0.01$). The average distribution of minimal depth in the random forest model was 1.48 for anti-actin ab, 1.53 for anti-nucleosome ab and 3.23 for anti-histone ab.

Conclusions: Our data shows a significantly higher positivity of anti-nucleosome and anti-histone antibodies in patients with AIH compared to DILI patients. The random forest model found anti-nucleosome ab to be almost as important as anti-actin ab in the classification of AIH and DILI. Thus, anti-nucleosome ab may be able to help distinguish between AIH and DILI.

CH3

Inborn Errors of Type I Interferon Immunity in Patients with Severe Acute Hepatitis E

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Objective: The clinical spectrum of human infection by hepatitis E virus (HEV) is highly variable, ranging from asymptomatic courses to severe acute hepatitis. Furthermore, HEV can cause diverse neurological manifestations such as Parsonage-Turner syndrome (PTS). Here, we used a large-scale human genomic approach to search for genetic determinants of these severe clinical presentations.

Patients and Methods: We performed whole genome sequencing on DNA from three groups of study participants with PCR-proven acute HEV infection: 1) 24 patients with severe acute hepatitis E;

2) 12 patients with HEV-associated PTS; and 3) 16 asymptomatic blood donors (controls). The data analysis workflow included variant calling and annotation, variant classification, and pathway enrichment analyses.

Results: We observed a significant enrichment of type I interferon (IFN) response pathways in the severe hepatitis group: 10 out of 24 patients carried a damaging variant in one of 9 genes encoding either intracellular viral sensors (*IFIH1*, *DDX58*, *TLR3*, *POLR3B*, *POLR3C*) or other molecules involved in the type I IFN response (*IRF7*, *MYD88*, *OAS3*, *GAPDH*). We did not find any enriched pathway in the PTS group nor in the controls.

Conclusion: Our results highlight the essential role of type I IFN immunity to prevent HEV-induced severe acute hepatitis. They also suggest that neurological complications of HEV infection might be due to different pathogenic mechanisms.

ORAL PRESENTATIONS SGVC

SGVC-FC1

Age is an independent predictor for the shift from skin to intestinal microbes in surgical site infections across different types of procedures

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Background: Surgical site infections (SSI) are an important health burden and a major cause of postoperative morbidity and mortality. The aim of this study was to determine the surgery-unrelated patient factors that determine microbial patterns of infected wound across different types of surgical procedures.

Methods: This study conducted a retrospective analysis of data extracted from the Swissnos database from patients who underwent surgery between 2009 to 2020. Using supervised machine learning methods (Adaptive Boosting, Gaussian Naïve Bayes), it was assessed what patient- and surgery-related factors predict microbial composition in SSI.

Results: Data from 538,893 patients were included. Microbiology from wound swabs were available in 10,632 patients. Most common pathogens identified in SSI were Enterobacterales, *Staphylococcus* spp. and *Enterococcus* spp. Age, BMI and duration of surgery were strong predictors for the microbial composition of SSI, independent of the type of surgical procedure performed. Increasing age and duration of surgical procedure were associated with a shift from *Staphylococcus* spp. to Enterobacterales and *Enterococcus* spp. in SSI.

Conclusions: Age, BMI, and duration of surgery are critical in determining the microbial composition of SSI, implying that host factors influence the development of these infections, independently of the surgical procedure.

SGVC-FC2

Laparoscopic surgery offers similar long-term outcomes as open surgery for gastric adenocarcinoma

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Background: Although laparoscopy is widely used in oncologic digestive surgery, open surgery remains the preferred approach in many centers for gastric cancer, especially in advanced disease. The aim of this study was to assess long-term survival and recurrence in patients undergoing laparoscopic (LG) versus open (OG) gastrectomy for cancer, in a European reference center.

Methods: All consecutive patients with gastric adenocarcinoma undergoing oncologic gastrectomy with curative intent between January 2007 and December 2021 were retrospectively analyzed. Clinico-pathological characteristics, survival and recurrence were compared between LG and OG patients. The x2 test was used for categorical variables and the t-test for continuous ones. Survival was assessed with the Kaplan-Meier method and log-rank test, as well as a multivariable Cox regression analysis.

Results: Among the 145 included patients, n = 99 (68.3%) were in the OG and n = 46 (31.7%) in the LG group. Baseline demographics were similar between the two groups, as were tumor location, perioperative chemotherapy administration and extent of resection (total gastrectomy in 65.2% LG vs 74.7% OG patients, p = 0.236). R0 resection was obtained in 80% LG and 78.4% OG patients (p = 0.973). Open surgery was associated with a higher lymph node yield compared to laparoscopic surgery (28.5±13.4 vs 22.7±9.8, p = 0.03), whereas overall postoperative morbidity was similar (30.4% in LG vs 35.3% in OG patients, p = 0.560). Overall median survival was similar between the two groups (46 months, 95% CI 36.9-55.1 for LG vs 130 months, 95% CI 49-211 for OG patients, p = 0.976), as was median disease-free survival (11 months, 95% CI 5.7-16.3 for LG vs 7 months, 95% CI 5.2-8.8 for OG, p = 0.910). Metachronous peritoneal carcinomatosis appeared more frequently in OG than LG patients (31.3% versus 15.2% respectively, p = 0.040).

Conclusions: Laparoscopic gastrectomy, although associated with an inferior lymph node yield, provides similar immediate postoperative results and long-term survival compared to open surgery for gastric cancer.

SGVC-FC3

Early Prediction of Postsurgical Infections Using a Bayesian Approach

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Background: Postoperative infections significantly affect morbidity and mortality rates, underscoring the need for improved predictions of infection risks. Traditional assessment of preoperative phenotyping and postoperative inflammation markers consider parameters individually and statically. Our study explores the application of Bayesian techniques for a more dynamic, comprehensive solution, considering multiple parameters and their temporal changes within one model. We hypothesize that a model integrating perioperative laboratory and CRP values will better predict postoperative infections than using a singular value such as CRP alone.

Methods: This study conducted a retrospective analysis of prospectively collected data from patients who underwent surgery at our institution between January 2014 and September 2022 and had available perioperative laboratory values. The primary endpoint was postoperative infection. After having assessed different machine learning algorithms a Bayesian approach was employed on the training dataset (80% of the data) to define a risk of infection score, which was then tested on 20% of the data.

Results: A total of 59,758 patients who underwent 75,245 surgeries across all surgical departments within one University hospital were included. Our approach discerned alterations enabling the earliest infection predictions, for instance, CRP changes between postoperative day 0 and day 2 in visceral surgery. We further characterized the CRP curves for each patient and applied signal processing algorithms to identify clusters of characteristic curves indicative of infection outcomes. A set of the clinical features was used for a multidimensional model and visualisation of the cluster-specific risks of infection.

Conclusions: By integrating multidimensional datasets through Bayesian models, we can identify predictors with greater precision compared to standard multiple regression analysis, achieving up to 80% precision and recall. This advancement provides clinically relevant information by enabling more timely identification of postoperative complications.

SGVC-FC4

Improved visualization of colonic circulation on CT angiography by administration of sublingual nitroglycerin

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Background: Preservation of colonic arterial perfusion is essential to avoid anastomotic leakage after colorectal resection. Preoperative in-depth knowledge of the vascular anatomy helps to anticipate areas at risk for poor postoperative perfusion. The aim of this study was to evaluate the effect of sublingual nitroglycerin prior to computer tomography angiography (CTA) for the improvement of visceral artery visualization.

Methods: Patients with coronary CTA including an abdominal scan with sublingual nitroglycerin between 01/2018–05/2021 and an existing second abdominal CT angiography without nitroglycerin were retrospectively enrolled. To increase the size of the cohort, age and sex matched patients receiving a CTA with and without sublingual nitroglycerin, respectively, were further included in the analysis. In all CT scans diameter and density of superior (SMA) and inferior mesentery artery (IMA), middle (MCA) and left colic artery (LCA) were measured.

Results: Thirty-seven pairs of CTA with and without sublingual nitroglycerin were analyzed. Mean diameter of the IMA, MCA and LCA was significantly higher in the nitroglycerin group (4.0 mm vs. 3.2 mm, $p = 0.001$; 3.1 mm vs. 2.3 mm, $p < 0.001$; 1.9 mm vs. 1.5 mm, $p < 0.001$). The diameter of SMA was not significantly different, however, mean density of the SMA was higher in the nitroglycerin group (9.4 mm vs. 9.1 mm, $p = 0.17$; 425 Hounsfield-Unit (HU) vs. 359 HU, $p = 0.004$).

Conclusion: Administration of sublingual nitroglycerin pre-procedural to CTA improves visualization of visceral arteries. Translation into clinical practice to predict the risk of anastomotic leakage after colorectal surgery is warranted.

SGVC-FC5

Spinal anesthesia improves postoperative pain control after colorectal surgery: preliminary results of a prospective study

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Background: Spinal anaesthesia as an adjunct to general anaesthesia has been shown to improve perioperative pain management after colorectal surgery. A subsequent reduction of opioid analgesics might further shorten postoperative ileus and costs in colorectal surgery. We aim to assess the impact of spinal anaesthesia on pain control, postoperative ileus and costs after colorectal surgery.

Methods: Data of consecutive patients with colorectal resections not receiving an ostomy between October 1st 2021 and July 31st 2022 were entered into a prospective database and included in the preliminary analysis. Peri- and postoperative pain scores (numeric rating scale, NRS) and – medication, parameters of bowel function (flatus, stool, diet) and costs were compared. Prolonged postoperative ileus was previously defined by inability to tolerate a regular diet, radiological ileus and/or absence of flatus for 24 hours after the 4th postoperative day.

Results: Spinal anaesthesia was added to general anaesthesia in 53 of 88 patients included in our preliminary analysis. Patient age and body mass index were similarly distributed between groups. Comorbidity (ASA class 3 and 4) was more frequent in patients not receiving spinal anaesthesia (51% vs. 21%, $p = 0.003$). Spinal anaesthesia was associated with decreased NRS scores at 3h (0 vs 4, $p = 0.019$), 12h (2 vs. 4, $p = 0.007$) and 24h (2 vs. 5, $p = 0.002$) following surgery. Our preliminary analysis of 88 patients (50% of sample size calculation) did not show any difference in time-to-flatus, time-to-stool, time-to-normal diet and prolonged postoperative ileus between the two groups. Cost analysis of 34 patients operated in 2021 did not show a difference between patients with and without spinal anaesthesia (20'227 CHF vs. 20'876 CHF).

Conclusion: Spinal anaesthesia improves postoperative pain control. Our preliminary analysis did not show a decrease of postoperative ileus and costs after colorectal resection.

SGVC-FC6

Persisting Hypercalcemia and Hyperparathyroidism after Kidney Transplantation have a negative impact on Graft- and Patient survival

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Background: Hyperparathyroidism (HPT) with hypercalcemia (HC) is thought to be irreversible and deleterious for graft survival after kidney transplantation (KT). Consequently, parathyroidectomy is recommended in hypercalcemic patients prior to transplantation.

Methods: Retrospective analysis of 1212 kidney transplant recipients (KTRs), between 2006 and 2019. Presence of HPT and HC was assessed at KT, and until 60 months follow-up (FU) [1]. The effect of persistent HPT and HC on graft- and patient survival, and risk factors for persistence were analyzed.

Results: At KT, 5.7% ($n = 69$) had no HPT, 32.7% ($n = 396$) had HPT without HC and 37.0% ($n = 448$) had HPT with HC. At 2 years FU 26.4% ($n = 320$) of patients had no HPT and 6% ($n = 73$) had HPT with HC. Dialysis and dialysis vintage were risk factors for developing HPT, and dialysis, KT waiting time and donor type for persisting HC after KT. Living donor KTRs had significantly lower PTH levels at all FU timepoints, less HC persistence, and an improved patient survival (HR: 1.93 (95% CI 1.35 – 2.77), $p < 0.001$). KTRs with normalized PTH and even more so with recovered HC had improved death-censored graft survival ($p < 0.001$), and overall patient survival ($p < 0.001$).

Conclusions: HPT with hypercalcemia is frequent at KT with normalization of PTH and calcium in a substantial part of patients after KT. This finding questions routine pre-KT parathyroidectomy for suspected parathyroid autonomy. Persisting HPT, particularly with HC, is associated with a negative graft- and patient survival. Thus, more aggressive treatment of HPT, especially in case of persisting HC might be warranted.

SGVC-FC7

Absorbable versus non absorbable mesh in ventral mesh rectopexy –an international retrospective comparison of short-, mid- and longterm outcomes

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Aim: Ventral mesh rectopexy (VMR) is increasingly used for rectal prolapse and outlet obstruction. We aim comparing use of absorbable (am) versus non- absorbable mesh (nam).

Method: VMR performed between March 2012 and July 2022 in three international pelvic floor centers were retrospectively analysed concerning rate of complications and need for further therapy, including re-operation.

Results: in total number of prior pelvic floor operations in amVMR was 18 of 140 and in namVMR 56 of 220 ($p < 0.0065$). Conversion had to be performed in 1 amVMR and in 8 namVMR ($p = 0.08$). There were 4 intraoperative complications in amVMR and 0 in namVMR ($p = 0.06$). Postoperative complications occurred in 5.7% in amVMR (7 Clavien-Dindo I and 1 Clavien-Dindo III) and in 10.9% in namVMR (20 Clavien-Dindo I and 4 Clavien-Dindo III) ($p = 0.23$). Median postoperative hospital length was 3.5 (1-28) days in amVMR and 5.2 (1-19) days in namVMR ($p < 0.0001$). Oral laxatives were necessary in 31% after amVMR and in 35% after namVMR ($p = 0.35$). Rectal laxatives were used in 11% after amVMR and in 9% after namVMR ($p = 0.27$). Surgical recurrence appeared in 9% amVMR and in 5% namVMR ($p = 0.11$). Median time to recurrence was in amVMR 20.9 (5 to 58) months and in namVMR 20.2 (0 to 55) months ($p = 0.92$).

Conclusion: VMR using absorbable and non-absorbable mesh was equally safe and no mesh-associated morbidity was observed in either group. There was no statistically difference concerning the recurrence rate.

SGVC-FC8

Analyzing the impact of surgical technique on intraoperative adverse events in laparoscopic Roux-en-Y gastric bypass surgery by video-based assessment

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Background: Despite high-level evidence that variations of surgical technique in laparoscopic Roux-en-Y gastric bypass (LRYGB) are correlated with postoperative outcomes and might be linked to intraoperative adverse events (IAE), there is a paucity of studies analyzing IAE in depth. This study analyzed the

impact of surgical technique on temporal occurrence and frequency of IAE in LRYGB by video-based assessment.

Methods: MultiBypass140, a video dataset containing 70 LRYGB surgeries from Strasbourg (StrasBypass70) and 70 LRYGB surgeries Bern (BernBypass70) was annotated with LRYGB phases and IAE occurrence.

Results: Compared to StrasBypass70, in BernBypass70 the omentum was not routinely divided (94% vs. 36%, $p < 0.0001$), and the mesenteric defects were not routinely closed (100% vs. 21%, $p < 0.0001$). In MultiBypass140 a total of 797 IAE occurred. The most IAE prone phases were gastric pouch creation, gastrotrojejunal and jejunojejunal anastomosis creation. StrasBypass70 showed significantly more IAE in the omentum division (23 vs. 5 IAE, $p = 0.0007$), Petersen space closure (13 vs. 1 IAE, $p = 0.0013$) and mesenteric defect closure phases (34 vs. 1 IAE, $p < 0.0001$) compared to BernBypass70.

Conclusions: Variations of LRYGB technique between centers influence the temporal occurrence and frequency of IAE. By adapting the surgical technique IAE might be omitted.

SGVC-FC9

Autologous and Artificial Coverage of the Pancreatic Remnant or Anastomosis after Partial Pancreatectomy

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Background: The development of a postoperative pancreatic fistula (POPF) is a common complication after partial pancreatectomy. The aim of this study was to evaluate the potential benefits of either autologous or artificial coverage of the pancreatic remnant or anastomosis after partial pancreatectomy to reduce POPF.

Methods: A systematic literature search was performed using MEDLINE and CENTRAL. All randomized controlled trials (RCT) investigating a coverage method in patients undergoing partial pancreaticoduodenectomy (PD) or distal pancreatectomy (DP) were included. The main endpoint was the occurrence of clinically relevant POPF.

Results: A total of 14 RCT with 2069 patients were included. An overall analysis of the 14 RCT, including both techniques in PD as well as DP, showed a significant benefit for additional coverage (OR 0.74, 95%-CI: 0.57 vs 0.98, $p < 0.03$). This benefit was also seen in the RCTs covering the remnant exclusively after DP (OR 0.72, 95%-CI: 0.57 to 0.97, $p < 0.03$) and RCTs applying only autologous coverage in PD and DP (0.53, 95%-CI: 0.29 to 0.96, $p < 0.04$).

Conclusion: A form of coverage, whether autologous coverage or through the use of sealants, shows potential to avoid POPF. However, sample sizes are yet too small to conclude which kind of coverage is the most promising for PD or DP. Therefore, further RCT investigating the effect of autologous or artificial coverage to reduce POPF are needed.

ORAL PRESENTATIONS: SESSION HEPATOLOGY II

HII-1

Cholestatic pruritus is associated with altered nerve fiber function

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Background and Aims: Chronic pruritus is a symptom of cholestatic liver diseases. Sensory C-nerve fiber endings in the skin act as pruritoceptors and can be activated by mediators. We therefore assessed C-fiber function in patients with cholestatic liver disorders with and without chronic pruritus.

Method: We included 56 clinically well-characterized patients with cholestatic liver diseases consisting of PBC (n = 22), PSC (n = 17) and other causes of cholestasis (n = 17). Pruritus was evaluated using validated questionnaires including a numeric rating scale (NRS). Patients underwent testing of skin nerve fiber function including an electrical stimulation protocol. We additionally obtained skin punch biopsies at the forearm to analyze histology and intraepidermal nerve fiber density (IENFD).

Results: Patients were divided into those with significant chronic pruritus as defined of a mean itch rating of NRS ≥ 3 (pruritus high; n = 26) and those without clinically significant pruritus (pruritus low, NRS <3; n = 30). Both patient groups were comparable regarding age, liver function tests, disease entity and stage of liver disease. Singular sine-wave stimulation (0.025–0.4 mA) of the skin caused a dose-dependent pain sensation in both, the pruritus low and high group, in a comparable range of healthy subjects. Intriguingly, in addition to pain, solely the high pruritus group experienced a dose-dependent itch sensation. This difference occurred both at the level of the forearm and the forefoot. Similarly, a prolonged electrical sine-wave stimulation of 60s resulted in a significant itch sensation only in the high pruritus group. Adaptation was observed to pain but not itch intensity. In skin biopsies, the mean IENFD was strongly reduced (p <0.001) in patients with cholestatic liver diseases compared to age- and sexed-matched healthy controls, with a trend towards lower IENFD in patients in the high pruritus group compared to patients with low pruritus.

Conclusion: Patients with chronic cholestatic pruritus exhibit functional changes in sensory C-fiber function to which altered intraepidermal nerve fiber anatomy could contribute.

HII-2

Novel insights on liver endothelial mechanobiology in cirrhosis: role of calcium integrin-binding protein 1

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Background: Liver sinusoidal endothelial cells (LSECs) are central players in liver microcirculatory malfunction. This study aimed at investigating the role of calcium integrin-binding protein 1 (CIB1) in LSECs stiffness-mediated dysfunction in chronic liver disease.

Methods: We investigated CIB1 expression in human liver. Rat LSECs were cultured 24h on tunable stiffness poly-acrylamide gels. The effects of depleting CIB1 using siRNA were investigated by RNAseq.

Results: Immunofluorescence on human cirrhotic liver showed that CIB1 was upregulated and translocated to the cytoplasm (+46.7% and +93.3% respectively). In healthy rat LSECs pathologic stiffness (30kPa) induced significant upregulation (+57.0%) and translocation to cytoplasm of CIB1 (+46.7%), which was prevented using cytoskeleton disruptors (-25.8% and -212.2%) (all p <0.05). Importantly, CIB1 knockdown reversed LSECs nuclear morphology to a healthy spherical shape on 30kPa, which was associated with improved LSECs phenotype as demonstrated by the amelioration of pathways related to inflammatory response, reactive oxygen species production and LSECs differentiation.

Conclusions: Our results demonstrate that CIB1 modulates LSECs mechanotransduction and dysfunction in liver cirrhosis. The reversibility of the effects of CIB1 or its downstream molecular pathways, may be potential novel therapeutic targets for chronic liver disease and portal hypertension.

HII-3

The role of HSD17B13 and MBOAT7 during alcohol detoxification: different effects on fibrosis and inflammation

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Background: In genome wide association studies *PNPLA3*, *MBOAT7*, *TM6SF2* and *HSD17B13* were identified as important risk genes for the development of alcohol-related cirrhosis, however, their functions and molecular mechanisms are still incompletely understood. We here present first data on the role of these genotypes on liver stiffness (LS), steatosis (CAP) and inflammation during alcohol withdrawal.

Method: Patients with alcohol use disorders and heavy active alcohol consumption (n = 550) hospitalized for alcohol withdrawal were prospectively enrolled and genotyped for *PNPLA3* rs738409, *MBOAT7* rs626283, *TM6SF2* rs58542926 and

HSD17B13 rs72613567 variants. The Hardy-Weinberg-equilibrium was fulfilled for all loci. All patients had routine laboratory, abdominal ultrasound and measurement of liver stiffness (LS) and hepatic steatosis by controlled attenuation parameter (CAP) both using FibroScan platform (Echosens, Paris) at admission. For 415 patients, additional follow-up data after 6.3 days of alcohol withdrawal were available for analysis.

Results: Patients were predominantly male (72%), with a mean age of 51 (\pm 12) years, mean BMI of 25.3 kg/m² and mean alcohol consumption of 199 (\pm 147) g/day. At admission, no difference between the genotypes of the four genes was seen regarding age, BMI, gender, alcohol consumption or serum transaminase levels. Subjects with *MBOAT7* CC genotype had significantly higher LS values than those with the GG variant (22.5 kPa vs 10.4 kPa, $p < 0.0001$). The *HSD17B13* TA/TA variant had non-significantly lower levels of AST and LS. After detoxification, *PNPLA3* GG had significantly higher inflammation as reflected by higher AST levels ($p < 0.05$) and more steatosis (CAP 320 vs 280 dB/m, $p < 0.01$). *MBOAT7* CC carriers had significantly higher LS measurements (15 vs 9 kPa). *HSD17B13* TA/TA had significantly less inflammation (AST 69 vs 125 U/L) and lower LS (7 vs 12 kPa). The results were confirmed in a multivariate model using values after withdrawal. *HSD17B13* T and *PNPLA3* G alleles were associated with increased inflammation (AST > 50 U/L) (OR = 0.53, $p < 0.001$ and OR = 1.33, $p = 0.08$, respectively). Best association with steatosis (CAP > 250 dB/m) was seen for *PNPLA3* G (OR = 1.39, $p = 0.09$). *HSD17B13* T and *MBOAT7* C were both significantly associated with elevated LS (LS > 6 kPa) (OR = 0.57, $p < 0.001$ and OR = 1.41, $p < 0.05$, respectively). No associations were seen for *TM6SF2*.

Conclusion: We found important differences between the studied genes during the alcohol detoxification phase. The *PNPLA3* G allele seems to be associated with steatosis and inflammation. The *MBOAT7* C allele seems to affect fibrosis without inflammation while *HSD17B13* TA appears to be protective against inflammation and fibrosis.

HII-4

Multifactorial modulation of the endothelial-specific transcription factor ERG in chronic liver disease

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Background & Aims: Mechanical forces and inflammation play a leading role in liver sinusoidal endothelial cells (LSECs) dysfunction in chronic liver disease. ETS-related gene (ERG) is an endothelial-specific transcription factor, involved in maintaining endothelial cell quiescence and homeostasis. Our study aimed at understanding the role of ERG transcription factor in CLD.

Methods: RNA sequencing was performed on healthy and cirrhotic human LSECs. Freshly isolated LSECs from healthy or cirrhotic rats and human umbilical vein endothelial cells (HUVECs) were cultured on low and high stiffness substrates and treated with interleukin 1 β (IL1 β). IF, Western Blot and qRT-PCR were performed on cells and tissue. ERG knockdown RNA sequencing data was obtained from the Gene Expression Omnibus.

Results: ERG was among the top downregulated genes (FC = -102, $p < 0.05$) in cirrhosis, and was downregulated by IF in cirrhotic livers. Overlapping differentially expressed genes in human cirrhotic LSECs and ERG KD datasets were involved in angiogenesis, cell migration and cell-substrate interaction. HUVECs showed ERG downregulation in response to increased

stiffness and to IL1 β . In contrast, in cirrhotic rat models, ERG was minimally downregulated, and rat LSECs displayed only mild, but significant downregulation of ERG in response to high substrate stiffness. Further experiments examine the dynamics of ERG in the progression of human CLD.

Conclusion: We have identified that the ERG transcription factor is markedly downregulated in human cirrhosis in response to matrix stiffness and inflammation. These mechanisms are much less relevant in cirrhotic rat models, indicating that studies based on modulating ERG should be preferentially done in human materials.

HII-5

Implicating ISOC1 as a Novel Molecular Target in Non-Alcoholic Fatty Liver Disease

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Background and Aims: Non-alcoholic fatty liver disease (NAFLD) presents a pressing need for new molecular targets to drive therapeutic discovery. We aimed to validate the Isochorismatase Domain Containing 1 (ISOC1) gene, identified through computational methods, as a possible molecular target in NAFLD.

Method: We created a human NAFLD liver gene expression signature (NAFLD-sig) using a meta-analysis of multiple datasets and compared it with the CMap database of perturbation gene signatures to help us identify ISOC1 as a candidate molecular target. We then conducted ISOC1 knockdown experiments in human hepatocyte (Huh7) and hepatic stellate (LX2) cell lines and in a mouse model following a 19-day Methionine/Choline Deficient (MCD) diet.

Results: Through a meta-analysis of 14 human transcriptomic datasets, we identified the downregulation of the ISOC1 gene as being closely tied to non-alcoholic fatty liver disease (NAFLD) across all stages. ISOC1 knockdown in hepatic stellate cells (LX2) was associated with a rise in fibrogenic gene expression whereas ISOC1 knockdown in hepatocyte cell lines (Huh7 cells) was associated with deregulation of genes involved in lipid metabolism and increase in lipid droplet size. In a 19-day MCD mouse model of NAFLD, ISOC1 knockdown led to decreased steatosis, increased inflammation and transcriptional changes suggesting activated fibrogenesis.

Conclusion: In conclusion, our research presents ISOC1 as a novel molecular target in NAFLD, with ISOC1 downregulation significantly associated with human NAFLD. These insights necessitate further studies to fully comprehend the implications of ISOC1 modulation in NAFLD.

HII-6

Can Artificial intelligence help classifying clinical case urgency and diagnosis in Liver Disease?

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Background: Artificial intelligence is expected to have an increasingly important role in clinical settings. Previous studies have shown a promising ability to triage and diagnosis in general clinical medicine however its utility in hepatology remains understudied. We therefore aimed to test the performance of GPT-4, a contemporary AI model, in categorizing clinical case urgency and diagnosing liver diseases.

Methods: We created 40 clinical vignettes, based on real in- and out-patients presentation from Geneva University Hospitals. We presented them in a standardised format (age, sex, clinical context, blood tests and imaging) to both chatGPT-4 (May 2023) and two senior hepatologists. The urgency of each clinical case (Urgent hospital admission/1 week/1 month/6 months) and the 2- 3 most probable diagnoses were requested and the performance of GPT4 was compared to the hepatologists'.

Results: Moderate interobserver agreement was observed between ChatGPT-4 and the hepatologists, with a kappa of 0.471 ($p < 0.001$). The performance of ChatGPT- 4 in assessing case urgency (≤ 1 week vs ≥ 1 month) yielded a sensitivity of 0.923, specificity of 0.357, positive predictive value of 0.727, and negative predictive value of 0.714. Of note, 2/24 (8.3%) of cases classified as urgent by the hepatologist (to be seen ≤ 1 week) were classified as less urgent (≥ 1 month) by chat GPT4 but 9/14 (64%) of cases classified as non-urgent by the hepatologist were classified as urgent by chat GPT4.

Chat GPT4 identified the first hepatologists' diagnosis within 3 attempts in 37/40 (93%) of cases and identified the 2 most probable hepatologists' diagnosis in 16/40 (40%) cases.

Conclusion: ChatGPT showed promising diagnostic performance to triage hepatology clinical cases created from real in and outpatient referrals in a tertiary hospital center setting. Overall, it tended to overestimate urgency when compared to senior hepatological evaluation. Limitations of our approach included single center hepatological review, and further validation in other languages. Further research should continue to explore the role of AI, particularly GPT-4, as a first- level triage for hepatology referrals.

ORAL PRESENTATIONS: SESSION SGVC LARGIADÈR

L1

Hemicolectomy versus appendectomy for patients with appendiceal neuroendocrine tumours 1–2 cm in size: a retrospective, Europe-wide, pooled cohort study

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Introduction: Awareness of a potential global overtreatment by performing oncological resections for appendiceal neuroendocrine tumours (aNET) 1–2cm is increasing. The aim was to assess the malignant potential of aNET 1–2cm in patients with or without right-sided hemicolectomy (RHC).

Methods: Patients with aNET 1–2cm from 40 European institutions diagnosed between January 2000 and December 2010 were included. Primary outcomes were frequency of distant metastases and tumour-related mortality rate. Secondary outcomes included frequency of regional lymph node metastases (LNM), corresponding histopathological risk factors and overall survival.

Results: Of 278 patients included in the study, 163 (58.6%) had an appendectomy (AE) and 115 (41.4%) RHC. After centralized histopathological review, the aNET was classified as possible or probable primary tumour in two patients with distant peritoneal metastases and in two patients with distant metastases in the liver. All metastases were diagnosed synchronously with no tumour-related deaths during the follow-up. Regional LNM were found in 22 (19.6%) patients with RHC. We estimated that 12.8% (95%CI 6.5–21.1%) of patients undergoing AE likely had residual regional LNM based on histopathological risk factors. Overall survival after a median follow-up of 13.0 years was similar between patients with AE and RHC (aHR .88, 95%CI .36–2.17, P = .71).

Conclusion: This study provides evidence that RHC is not indicated following complete resection of the aNET 1–2cm by AE and that regional LNM of aNET are clinically irrelevant.

L2

Early Postoperative Serum Phosphate Drop Predicts Sufficient Hypertrophy after Liver Surgery

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Background: Hypophosphatemia has been described to reflect the metabolic demands of regenerating hepatocytes. Both, ALPPS and living liver donation (LLD), are characterized by an exceptionally strong liver regeneration. Therefore, the aim of this study was to assess the impact of postoperative hypophosphatemia on liver regeneration after ALPPS and LLD.

Methods: Serum phosphate changes within the first 7 postoperative days after ALPPS (n = 61) and LLD (n = 54) were prospectively assessed and correlated with standardized volumetry after one week. In a translational approach, postoperative phosphate changes were investigated in mice and *in vitro*.

Results: After ALPPS stage-1 and LLD, serum phosphate levels significantly dropped from a preoperative median of 1.08 mmol/L (IQR 0.92–1.23) and 1.07 mmol/L (IQR 0.91–1.21) to a postoperative median nadir of 0.68 mmol/L and 0.52 mmol/L, respectively. A pronounced phosphate drop correlated well

with increased liver hypertrophy ($p < 0.001$). Patients with a low drop of phosphate showed a higher incidence of posthepatectomy liver failure after ALPPS (7 vs. 31%, $p = 0.041$). Like in human, phosphate drop correlated significantly with degree of hypertrophy in murine ALPPS and hepatectomy models ($p < 0.001$). Blocking phosphate transporter (Slc20a1) inhibited cellular phosphate uptake and hepatocyte proliferation *in vitro*.

Conclusion: Phosphate drop after hepatectomy is a direct surrogate marker for liver hypertrophy. Perioperative implementation of serum phosphate analysis has the potential to detect patients with insufficient regenerative capacity at an early stage.

L3

Anastomotic Leak Sealing and Early Detection based on Electronic-free Sensors

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Each year, millions of patients undergo gastrointestinal surgery. While often lifesaving, sutured and stapled reconstructions leak in around 10% of cases. Currently, surgeons rely on the monitoring of surrogate markers and clinical symptoms, which often lack sensitivity and specificity, hence only offering late-stage detection of fully developed leaks.

Here, we present a holistic solution in the form of a modular, intelligent suture support sealant patch capable of containing and detecting leaks early. The pH and/or enzyme-responsive triggerable sensing elements can be read out by point-of-need ultrasound and computer tomography imaging. The sensing elements can be patterned into a variety of characteristic shapes and can be combined with non-reactive reference elements, hence allowing the design of shape-morphing sensing elements that are visible to the naked eye as well as artificial intelligence-assisted automated detection. We demonstrate reliable detection of the breaching of sutures, in as little as 3 hours in intestinal leak scenarios and 15 minutes in gastric leak conditions. This technology paves the way for next-generation suture support materials that seal and offer disambiguation in cases of anastomotic leaks based on point-of-need monitoring, without reliance on complex electronics or bulky (bio)electronic implantables.

L4

Definitive Radiochemotherapy in Esophageal Cancer: Repetitive endoscopies versus symptom-based follow-up

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Background: Organ-sparing approaches with definitive radiochemotherapy (RCT) for esophageal cancer (EC) are gaining importance. It is unclear whether follow-up should consist of repetitive endoscopies (watch&wait (WW)) or rather be symptom-based (SB). The aim of this study is to compare the outcome of those two approaches.

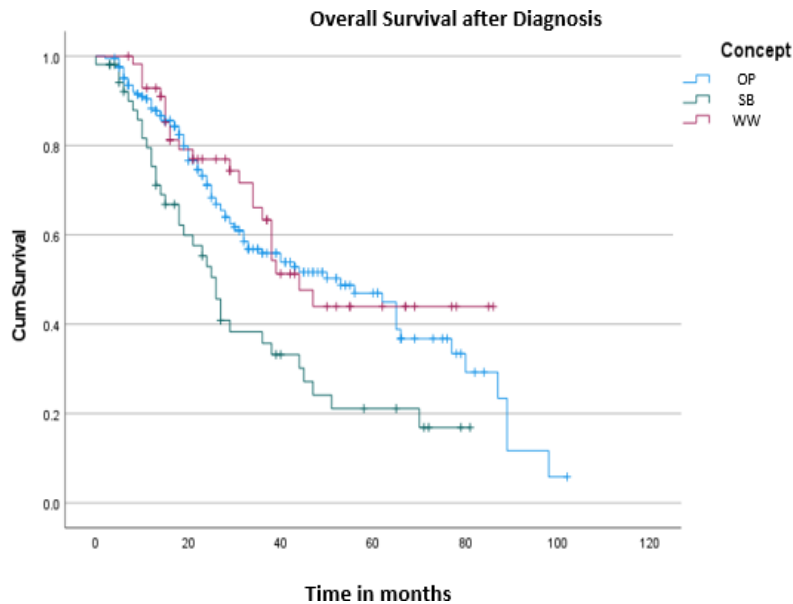
Methods: We conducted a retrospective analysis using data from electronic medical records of all patients diagnosed with potentially curable EC between 01/2014–12/2022.

Results: Of 315 included patients 116 underwent definitive RCT. WW group consisted of 59, the SB group of 57 patients. Median survival overall was 38 months, 44 months in the WW- group and 26 months in the SB-group. Recurrence occurred in 63 patients (57.2%, WW 31 and SB 32 patients), prompting salvage esophagectomy in 13 patients (11 WW, 2 SB).

Conclusion: A WW-strategy, utilizing definitive RCT with routine follow-up, offers a viable alternative to esophagectomy.

How- ever, a WW approach with routine endoscopies offers the bene- fit of early diagnosis of recurrence with possible resec- tion leading to better overall survival.

Treatment of Recurrence	
Surgery	13 (20.6%)
Endoscopic treatment	4 (6.3%)
Palliative (R)CT	36 (57.1%)
No Therapy	10 (15.9%)



L5

Defining Benchmarks for Oncological Gastrectomy

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Background: Oncological gastrectomy remains associated with relevant morbidity. Our aim was to define "best possible" outcomes for total (TG), distal (DG), pylorus preserving (PPG), and proximal (PG) gastrectomies.

Methods: Of 9356 gastrectomies, performed from 2017-2021 at 43 specialized centers on 5 continents, we selected 1796 benchmark patients based on criteria of low comorbidity. End-points included postoperative morbidity classified according to Clavien-Dindo (CD) and the Comprehensive Complication Index (CCI). Benchmark values were defined as 25th/75th percentiles of median outcome parameters in participating centers.

Results: Benchmark patients underwent TG (n = 498), DG (n = 1071), PPG (n = 170) and PG (n = 57) with minimally invasive surgery used in 70.7%; 16.3% developed at least one complication and 7.5% experienced major morbidity (≥CD IIIA). Overall, the most common complication was anastomotic leakage (2.7%), and 90- day mortality rate was 0.4%. Benchmark values

for TG were ≥99.4%, ≥49, <1.0%, ≤1.8%, ≤21.2%, ≤11.3%, ≤24.8, 0% (East Asia) & ≥91.6%, ≥26, <7.1%, ≤7.6%, ≤20.0%, ≤9.3%, ≤51.4, 0% (Europe/America) for R0 resection rate, LN yield, escalation of care, readmission, overall and major complications, CCI, and 90- day mortality.

Conclusions: This study presents global & regional benchmark values that can be used to evaluate performance and outcome quality in different types of oncological gastrectomy.

L6

Spatial heterogeneity of immune drivers coordinates the organisation of antitumor immunity in pancreatic cancer, affecting patient outcome

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Background: Pancreatic ductal adenocarcinoma (PDAC) is considered low immunogenic with "cold" tumor microenvironment (TME) and is mostly unresponsive to immune checkpoint blockade therapies. Here we decipher the impact of intra-tumoral heterogeneity of immune determinants on antitumor response.

Methods: Regions from tumor center (TC) and invasive front (IF) from 130 PDACs, including long-term survivors (LTSs, n = 29, overall survival≥60 months) and short-term survivors

(STSs, n = 101), were examined by transcriptomic and proteomic analysis (Nanostring platform). Spatial compartments (tumor, leukocytes, stroma) were defined by fluorescent imaging.

Results: LTSs displayed mostly homogeneous morphology with extended glandular differentiation and immunogenic TME both at TC and IF. There was higher presence of immune checkpoint-associated and immune-genic genes and proteins at the IF as compared to the TC. In contrast, STSs were characterized by morphologic heterogeneity, including areas with reduced glandular differentiation and high tumor budding and a mostly immunosuppressive TME with negative gradient towards the IF.

Conclusions: LTSs display a significantly more immunogenic TME underscoring their effective antitumor immunity, especially at the area of IF compared with STSs. Furthermore, we detect significant intratumoral heterogeneity between TC and IF on the expression of immune determinants, both in LTSs and STSs, which might explain the different antitumor immune responses, affecting patient outcome. The differential expression of immune drivers may help selecting patients for combination therapies to improve antitumor immunity and harness the responsiveness to immune checkpoint inhibitors in PDAC.

L7

Laparoscopic Roux-en-Y gastric bypass versus laparoscopic sleeve gastrectomy: 10-year outcomes on weight loss, comorbidities, and reoperations (SM-BOSS)

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Background: Long-term results from the Swiss multicenter randomized controlled trial that compares laparoscopic Roux-en-Y gastric bypass (LRYGB) with laparoscopic sleeve gastrectomy (LSG) for patients with obesity. The five-year results showed almost similar weight loss.

Methods: Initially, 217 patients with a body-mass index (BMI) >35 kg/m² were randomly assigned to receive LRYGB or LSG at four bariatric centers in Switzerland. However, data beyond five years were not provided by one participating center. Therefore, this study reports outcomes at 10 years of 188 patients from 3 centers. Primary endpoint was percentage excess BMI loss (%EBMIL), while secondary endpoints were percentage total weight loss (%TWL), evolution of comorbidities, complications, and reoperations. The primary endpoint was analyzed both for intention to treat (ITT) and per protocol (PP).

Results: Of the 188 patients, 95 were randomized to LRYGB and 93 to LSG. 141 were women (75%), mean age was 42.4 ± 11.0 years and the mean baseline BMI 43.9 ± 5.5 kg/m². 76% of patients had a completed follow-up of 10 years. In the ITT population mean %EBMIL was 63.7 ± 25.8% after LRYGB and 60.3 ± 24.1% after LSG (p = 0.44), %TWL was not different between LRYGB and LSG (26.6 ± 10.4% and 25.0 ± 9.8%, p = 0.35). LRYGB had significantly higher %EBMIL compared to LSG after 10 years in the PP population (64.7 ± 25.4% versus 54.6 ± 21.0%, p = 0.04). However, %TWL did not reach significance (LRYGB 27.0 ± 10.2%, LSG 23.5 ± 9.4%, p = 0.096). Higher remission rates for dyslipidemia were observed in the LRYGB group than after LSG (p <0.01), while more LSG patients reported significantly more symptoms of gastro-esophageal reflux disease compared to LRYGB (p = 0.002). Additionally, patients after LSG had significantly higher rates for conversion

because of insufficient weight reduction or reflux compared to LRYGB (32.3% versus 6.3%, p <0.01). Overall reoperation rate was 23.1% for LRYGB and 32.3% for LSG (p = 0.28).

Conclusions: LRYGB leads to significantly higher %EBMIL in PP population compared to LSG at 10 years. Improvement of comorbidities is similar except for gastroesophageal reflux disease and dyslipidemia that seem to be better controlled by LRYGB. LSG patients experienced a significantly higher number of conversions to different anatomy compared to LRYGB.

L8

Pharmacokinetics and Pharmacodynamics of therapeutic Rivaroxaban in bariatric patients

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Background: Thromboembolic events after bariatric surgery are serious complications. Limited knowledge exists about the use of direct oral anticoagulants (DOACs) in these patients. Therefore, investigating the pharmacokinetics (PK) and pharmacodynamics (PD) of Rivaroxaban in this population is crucial.

Methods: In this phase I monocentric study, bariatric patients were administered single oral doses of Rivaroxaban (20 mg once daily) before, at 3 and 30 days, and 3 months after undergoing Sleeve Gastrectomy (SG) or Roux-en-Y-gastric bypass (RYGB). PK and PD parameters were evaluated by collecting data at specific timepoints within a 24-hour period.

Results: We included 9 patients (age 49.9 ± 14.4y; 78% female) with a mean BMI of 46.8 ± 9 kg/m². 7 SG and 2 RYGB patients were included. Rivaroxaban mean areas under the curve (AUC) 3 days, 30 days, and 3 months after the bariatric procedure were (2474.7 µg*h/L, CV 1.4., 2468.2 µg*h/L, CV 1.7, 3266.4.2 µg*h/L, CV 1.2) comparable to those measured preoperatively (2441.8 µg*h/L, CV 1.4). The bioavailability of Rivaroxaban measured by parameters C_{max} and AUC showed no significant difference between the pre- and postoperative periods.

Conclusions: Rivaroxaban exhibited consistent PD and PK values in the early postoperative bariatric period similar to the preoperative values.

In particular, early begin with Rivaroxaban (e.g. 3 days postoperatively) is considered feasible and safe.

Surgical procedures (RYGB vs. SG) did not affect the PD and PK values.

L9

Surgical Complication Reporting. Moving from a Comic to a Tragic Opera?

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** These authors contributed equally*

Background: In 1996, the Lancet labelled surgical research as “a comic opera”, mostly due to the poor quality of outcome reporting, leading to insufficient evidence to improve surgical quality and patient care. The aim of this study was to assess whether current quality of outcome reporting has improved in the surgical literature, and to identify areas of improvement.

Methods: We screened 8 journals looking for original surgical articles published between 01/2021 and 07/2022. To address differences across types of journals, we included three surgical high-impact journals, i.e. Annals of Surgery, British Journal of Surgery, and Journal of the American Medical Association (JAMA) Surgery, two prominent surgical journals but of lesser impact, i.e. World Journal of Surgery and Langenbeck’s Archives of Surgery, and three prestigious medical journals, i.e.

New England Journal of Medicine, The Lancet, and JAMA. A 12-item checklist was used to examine whether quality criteria for outcome reporting such as method of data collection, outpatient events, duration of follow-up, readmissions, definition of complications, procedure-specific complications, severity of complications, mortality and morbidity, cumulative morbidity per patient, and patient-reported outcome measures were reported.

Results: 627 articles reporting surgical outcomes were analyzed, including 125 randomized controlled trials (RCT). Only 1 (0.5%) article met all 12 criteria. 356 articles (57%) fulfilled half or less criteria of the checklist. Main areas of concern were information on cumulative morbidity per patient, missing in 94% (n = 591), and on patient reported outcome measures, missing in 83% (n = 518). Surgical journals of lower impact reported one fewer criteria than higher ranked journals (p <0.001). Finally, study design (RCT vs. non-RCT) was positively associated with improved reporting quality (p <0.001).

Conclusion: The quality of outcome reporting in surgical literature remains worrisome. The implementation of standardized outcome reporting is needed to minimize biased interpretation of data and eventually improve quality of patient care.

POSTER: GASTROENTEROLOGY

G1

Intestinal epithelial cells are a central hub for integrating IL-17A- and IL-36 γ -mediated responses in inflammation

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Background and Aims: Increased levels of IL-36 cytokines are found in intestinal infection and inflammation, with dichotomous effects of IL-36 in acute and chronic phases of inflammation having been reported. With first clinical trials of blocking IL-36 signaling in inflammatory bowel diseases (IBD) initiated, it will be imperative to achieve a comprehensive understanding of the regulation and effects of IL-36 in the intestine. Detailed studies in this area highlighted the role of myeloid cells and fibroblasts in mediating effects of IL-36 in intestinal inflammation. However, intestinal epithelial cells (IECs) represent another key component of the intestinal barrier.

Methods: Here, we use a combination of transcriptional analysis, antibody arrays, and immunoblotting in cell lines and human-derived intestinal biopsies to measure IL-36 γ -mediated signaling pathways and to dissect epithelial-regulated functions of IL-36 family members in intestinal inflammation.

Results: We demonstrate that IL-17A selectively amplifies production of IL-36 γ in IECs. IL-36 γ activates ERK-1/2, p38, SAPK/JNK, and NF- κ B pathways in an autocrine manner. Within the $n = 2774$ target transcripts differentially regulated by IL-36 γ , *IL36G* itself is amongst the most strongly induced target genes. Moreover, IL-36 γ upregulates the expression of genes associated with the Th17 pathway, such as *IL17C* and *CCL20*. High concentrations of IL-36 γ elicit IEC apoptosis, suggesting a potential contribution to epithelial barrier damage in chronic inflammation. Finally, *IL36G* mRNA is significantly ($p = 0.005$) increased in inflamed mucosal biopsies taken from patients with IBD (median 381.4; [95% CI 297.4-639.3]), compared to non-inflamed tissue (198.2 [207.2-348.5]).

Conclusions: Overall, we dissect in detail the link of IL-17A and IL-36 γ in mucosal inflammation which is amplified by these two cytokines in an autocrine circuit in IECs. Our data highlight IECs as important coordinators of IL-36-mediated host defense and inflammation.

G2

Metabolic dynamics of the small intestinal microbiota upon nutritional challenges

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Introduction: The human small intestinal microbiota, which plays a crucial role in intestinal function, remains poorly investigated due to limited accessibility.

Methods: We utilise the access *via* ileostomies in a randomised cross-over trial with two nutritional interventions (high carb vs.

high fat). Stomata samples are collected from 70 stoma patients hourly (0- 6h) after the intervention, along with blood and urine samples (0h, 3h, 6h).

Results: We characterise the small intestinal microbiota through taxonomy (16S sequencing), biomass, and metabolome analysis. Shotgun metagenomic and mRNA sequencing are performed at selected timepoints. Our comprehensive "multi- omics" analysis involves identifying bacterial networks, interpreting their dynamics, and creating a bacteria library to reproduce key interactions *in vitro*.

Conclusion: This study aims for a comprehensive exploration of small intestinal microbiota dynamics using a network approach. The data and samples collected will enable hypothesis testing *in vitro* and lay the groundwork for future disease-specific investigations.

G3

Investigation of the AhR-Cyp2s1 axis in intestinal inflammation

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Introduction: Cytochrome P450 Cyp2s1 is expressed in the gastrointestinal tract with unknown functions in colitis. It metabolizes endogenous compounds, including retinoic acid, and prostaglandins, and is induced upon 2,3,7,8- tetrachlorodibenzo-p-dioxin (dioxin) treatment.

Methods: By combining RNA-sequencing (RNA-seq) and murine models, we have analyzed Cyp2s1 expression under steady-state and inflammatory conditions.

Results: We found that both macrophages and epithelial cells express Cyp2s1 with more pronounced expression in epithelial cells. Ultimately, the re-analysis of published RNA sequencing data sets of colon-derived organoids revealed decreased expression of Cyp2s1 in the absence of AhR compared to WT-derived organoids. In line, stimulation of bone marrow-derived macrophages with the AhR agonist (FICZ) induced Cyp2s1 expression in a time-dependent manner. In addition, we noted a microbiota-dependent regulation of Cyp2s1 expression by using germ-free and Myd88^{-/-}/Trif^{-/-} mice. Employing murine colitis models (DSS, CD40, TNBS, *C. rodentium*) resulted in decreased Cyp2s1 expression. Accordingly, biopsies from patients with active ulcerative colitis and Crohn's disease presented reduced expression of Cyp2s1. Genetic ablation of Cyp2s1 in epithelial cells induced a lower frequency of colonic ILC3 and TCR \downarrow CD8 $\alpha\alpha$ intraepithelial lymphocyte populations in steady-state conditions. Specific deletion of Cyp2s1 in macrophages ameliorated the course of DSS-induced colitis. Moreover, mice lacking epithelial Cyp2s1 displayed a slower recovery phase upon DSS challenge.

Conclusion: Our preliminary results suggest that inflammatory conditions and AhR agonists modulate Cyp2s1 expression. Next, we aim to uncover the potential implication of the AhR-Cyp2s1 axis in the pathogenesis of IBD.

G4

Optimal Dosage of Upadacitinib in Crohn's Disease Patients: Experience from Real World Setting

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Background: Small molecules are revolutionizing current management of the inflammatory bowel diseases. Upadacitinib (UPA; Rinvoq®) in a 15mg daily dosing for rheumatic and skin diseases is already approved by Swissmedic, and higher dosages of 30 to 45mg for ulcerative colitis is approved outside Switzerland. The aim of this study is to describe the experience of off label use of this drug and to identify the dose most prescribed in a real-world setting.

Methods: A chart review since 2019 of the Crohn's and Colitis Center Beaulieu Lausanne and Gastroenterology center Bulle of CD patients was conducted.

Results: Among 48 CD patients (71% women), 73% were on ongoing therapy: 51% were on 30mg/d, 40% on 15mg and 9% on 45 mg UPA daily. During a mean treatment follow up of 10 months, a mean dosage of 28 mg /d was used by the patients. A total mg drug exposure of ≥ 30 mg/d over ≥ 10 mo, was set as a specific outcome and was seen in more than 40% of the patients. Intolerant patients or primary non responders were less likely to reach this goal, as well as men, and CD patients with ileal location or stenosing behavior. In UPA responders (35/48 patients (73%)) mean maintenance treatment duration was 8 mo (range 0,5 – 23) with 30 mg, and 7 mo (range 0,5 – 17) with 15 mg. In the total UPA cohort, the 30 mg daily dosage had a longer treatment duration compared to the 15 mg daily dosage (11,2 vs. 6,7 mo; $p < 0.11$). The higher doses (30 mg or 45 mg) did not increase the number of intolerances, but slightly increased viral infections (2 vs. 4) and headaches (1 vs 3).

Conclusion: This large, prospective real-world cohort, in medically multi-resistant CD patients confirms the current recommendations to use UPA 15–30 mg/day as maintenance treatment. In this cohort of patients 30 mg/day of UPA resulted in good treatment responses and was well tolerated.

We advocate for using clinician discretion in determining appropriate dosing, but >30 mg/day is advised based on our results.

G5

Upadacitinib in Crohn's Disease Patients: for what type of patients in real world setting?

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Background: The oral selective JAK kinase inhibitor, Upadacitinib (UPA; Rinvoq®) has been shown to induce and maintain clinical response and remission in Crohn's disease (CD), but also in rheumatic and skin diseases. We report here on the largest Swiss experience of off label use of this drug.

Methods: A chart review of the Crohn's and Colitis Center Beaulieu Lausanne and Gastroenterology center Bulle of CD patients was conducted.

Results: Eighty IBD patients were exposed to UPA treatment. After exclusion of 22 patients (UC and unknown consent status) we analyzed patient characteristics of 48 CD patients (71% women) treated between April 2019 and May 2023. All patients had previous exposure to at least one anti-TNF agent, 77% had failed or were intolerant to 4 or more biologics and 80% had received all classes of biologics. Disease location and behavior were mostly ileo-colonic and inflammatory (L3B1) or ileal only and stricturing (L1B2) Crohn's diseases. Half of the patients had co-existing extraintestinal manifestations (mostly spondylarthritis and arthralgias). UPA was combined with other treatments in 23% of cases: equally with steroids, anti-TNF agents, vedolizumab and ustekinumab. UPA was prescribed after a median disease duration of 15 years (range 1-43) for a mean treatment duration of 10 months (mo) (range 1-26). Thirty-five CD patients (73%) were still on UPA at the time of study completion: A partial or complete response was observed in 35/48 patients (73%) with a mean decrease of CRP of 7.5 mg/l (range +12 to -44) and calprotectin of 281 mcg/g (range 0 – 1132). Adverse events were mostly viral infections and headaches.

Conclusion: Upadacitinib is a good treatment option in difficult to treat CD patients with aggressive disease behavior, alone or in combination in case of concomitant rheumatic and gastrointestinal indications.

G6

Improvement in fatigue with mirikizumab therapy is associated with improvements in patient-reported outcomes in patients with moderately to severely active Crohn's disease

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Background: Mirikizumab (miri), a humanized immunoglobulin G4 (IgG4) monoclonal antibody directed against the p19 subunit of IL-23, was shown to be efficacious and well tolerated in patients with Crohn's disease (CD) in a phase 2 randomized clinical trial. Fatigue is a debilitating, underrecognized, multifactorial symptom experienced by many patients with CD. Here we assessed the association between changes in selected patient reported outcomes (PROs) and changes in fatigue during the AMAG study.

Methods: Patients (N = 191) with moderately to severely active CD were randomized 2:1:1:2 into 4 treatment arms (placebo, 200 mg, 600 mg, and 1000 mg miri); miri or placebo was administered intravenously every four weeks at Week (W) 0, W4, and W8. At W12 patients were switched from placebo to miri and re-randomized between miri doses based on response. Fatigue was assessed using the Functional Assessment of Chronic Illness Therapy- Fatigue (FACIT-F) questionnaire, which has been validated in patients with inflammatory bowel disease. Data were pooled for all treatment arms including placebo.

Results: Change in FACIT-F at W12 or W52 showed strong correlations with changes at the same timepoint in numerous PROs:

Correlation of FACIT-F improvement with changes in patient reported outcomes						
PRO	Week 12 (N = 191)			Week 52 (N = 176)		
	Pearson corr	95% CI	p-value	Pearson corr	95% CI	p-value
IBDQ total score	0.714	(0.632, 0.781)	<.0001	0.791	(0.721, 0.845)	<.0001
IBDQ bowel symptoms dimension	0.588	(0.480, 0.678)	<.0001	0.709	(0.617, 0.782)	<.0001
IBDQ systemic symptoms dimension	0.669	(0.577, 0.745)	<.0001	0.777	(0.703, 0.835)	<.0001
IBDQ emotional function dimension	0.672	(0.580, 0.747)	<.0001	0.733	(0.647, 0.800)	<.0001
IBDQ social function dimension	0.608	(0.503, 0.695)	<.0001	0.674	(0.574, 0.754)	<.0001
SF-36 Physical Component Score	0.614	(0.511, 0.700)	<.0001	0.613	(0.500, 0.705)	<.0001
SF-36 Mental Component Score	0.621	(0.519, 0.706)	<.0001	0.687	(0.590, 0.764)	<.0001
Patient's Global Rating of Severity	-0.389	(-0.512, -0.250)	<.0001	-0.469	(-0.591, -0.327)	<.0001
Abdominal pain NRS	-0.365	(-0.491, -0.224)	<.0001	-0.421	(-0.550, -0.272)	<.0001

Abbreviations: CI = confidence interval; corr = correlation; FACIT-F = Functional Assessment of Chronic Illness Therapy-Fatigue; IBDQ = Inflammatory Bowel Disease Questionnaire; N = number of patients in the analysis (including patients with non-missing change scores); NRS = Numeric Rating Scale; PRO = patient reported outcome; SF-36 = 36-Item Short Form Survey.

Conclusion: Improvement in fatigue during treatment for CD was correlated with some aspects of physical symptom improvement, including abdominal pain, but also correlated strongly with emotional, social, and mental well-being. Investigations of bidirectional effects of brain-gut interactions could

be helpful in understanding the relationship between subjective perception of well-being and physical symptom improvement in CD.

G7

Improvement in fatigue with mirikizumab therapy is associated with clinical remission and pain improvements but not with endoscopic response in patients with moderately to severely active Crohn's disease

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Background: Mirikizumab (miri) is a humanized immunoglobulin G4 (IgG4) monoclonal antibody directed against the p19 subunit of IL-23 which was efficacious and well tolerated in a phase 2 randomized clinical trial in patients with Crohn's disease (CD). Fatigue is common in CD and negatively impacts quality of life. The association between changes in clinical and inflammatory markers and fatigue might reveal the mechanism of fatigue relief.

Methods: Patients (N = 191) with moderately to severely active CD were randomized 2:1:1:2 into 4 treatment arms (placebo, 200 mg, 600 mg, and 1000 mg miri), administered intravenously every four weeks at Weeks (W) 0, 4, and 8. At W12 patients were switched from placebo to miri and re-randomized between miri doses based on response. Fatigue was assessed using the Functional Assessment of Chronic Illness Therapy-Fatigue (FACIT-F) questionnaire. Endoscopic response was defined as ≥50% reduction from baseline in total Simplified Endoscopic Activity Score for Crohn's Disease. CD Patients reported clinical scores were also assessed.

Results: Overall, mean change in FACIT-F scores for patients with and without endoscopic response at W12 were 8.1 and 7.2, respectively (p = 0.33) and at W52 were 13.9 and 13.7, respectively (p = 0.54). At W12, change in FACIT-F showed a moderate but statistically significant correlation with change at the same timepoint in Crohn's Disease Activity Index (CDAI) total score (r = -0.404), abdominal pain (r = -0.380), and stool frequency (r = -0.354). Weak but statistically significant correlations were observed with calprotectin (r = -0.269), and C-reactive protein (r = -0.165). At W52, change in FACIT-F was moderately but significantly correlated with change in CDAI total score, abdominal pain, and stool.

Conclusion: Improvement in fatigue during treatment for CD was correlated with some aspects of physical symptom improvement, including abdominal pain, but also correlated strongly with emotional, social, and mental well-being. Investigations of bidirectional effects of brain-gut interactions could be helpful in understanding the relationship between subjective perception of well-being and physical symptom improvement in CD.

G8

Non-invasive Assessment of Diseases Activity in Patients with Eosinophilic Esophagitis

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Background: Eosinophilic Esophagitis (EoE) is a chronic inflammatory condition of the esophagus triggered by food and airway allergens. Non-invasive biomarkers reliably detecting EoE in patients with suspicious symptoms or predicting treatment response to reduce the need of endoscopy are lacking.

Methods: Non-asthmatic patients ≥ 18 years with suspected or known EoE, GERD or healthy controls (HC) who underwent scheduled endoscopy were included prospectively (November 2020 – May 2022). Body plethysmography with FeNO level determination and serum and stool biomarker determination by ELISA were performed. Patients with active EoE were scheduled for follow-up after treatment initiation.

Results: 69 patients of whom 38 suffered from EoE, 14 from GERD and 17 HC were included. Median FeNO level in active EoE was 20ppb and higher compared to GERD (15ppb, $p = 0.038$) and HC (14ppb, $p = 0.046$). Median FeNO did not differ in 11 EoE patients who underwent follow-up during successful treatment (before 20ppb, during 18ppb, $p = 0.77$). Serum EDN, ECP and eosinophil blood levels (AEC) were significantly elevated in active EoE compared to HC, but not to GERD. Serum EDN, ECP, CCL17 and AEC showed a significant decrease at follow-up endoscopy. None of the fecal biomarkers were elevated relevantly in active EoE nor during treatment.

Conclusion: FeNO, serum ECP, EDN and AEC levels help in the detection of yet undiagnosed active EoE and are significantly higher compared to non-EoE patients. Serum ECP, EDN, CCL17 and AEC levels could be used for monitoring of diseases activity in EoE.

G9

Assessment of histological phenotypes in EoE and their impact on disease activity and response to treatment

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Background: Eosinophilic esophagitis (EoE) is a patchy disease with an uneven histological distribution throughout the esophagus. However, an in-depth description of naturally occurring inflammatory patterns and their impact on disease presentation and response to treatment is still missing.

Methods: This was a *post-hoc* analysis of steroid-treated EoE patients included in the phase 3 EOS-1/2 trials. We analyzed esophageal eosinophil distribution and compared different histological phenotypes with regards to disease presentation, development of complications and response to treatment with a budesonide orodispersible tablet (BOT). Patients were histologically phenotyped into proximal esophagus predominant, mid esophagus predominant, distal esophagus predominant disease or diffuse disease depending on whether or not one segment had a peak eosinophil count that was >48 eos/mm² (or 20%) higher compared to the other segments.

Results: We included a total of 263 patients (81% males, median age 36.0 years) who were recruited into EOS-1/2 and treated with BOT for 6 weeks. 56 patients (21.3%) had the highest peak eosinophil counts in the proximal esophagus, 86 patients (32.7%) in the mid esophagus, and 120 patients (45.6%) in the distal esophagus (1 patient had equal values in proximal and distal esophagus). 28 patients were classified as having proximal (10.6%), 42 as having mid (16.0%), 84 as having distal esophagus predominant disease (31.9%), and 109 as having diffuse disease (41.4%). No differences were seen between these histological phenotypes, when looking at demographics, clinical and endoscopic disease activity. However, histological disease activity, assessed by overall peak eosinophil count, was most severe in proximal esophagus predominant (342.9 eos/mm²), with higher levels compared to distal esophagus predominant disease (215.3 eos/mm², $p = 0.001$) and diffuse disease (178.9 eos/mm², $p < 0.001$). Clinico-histological remission rates to treatment with BOT were not statistically different in

proximal (64.3%), mid (76.2%), distal esophagus predominant (72.6%), and diffuse disease (63.3%).

Conclusion: In EoE, the highest eosinophil density was observed in the distal esophagus. Accentuation of eosinophilic infiltration in one single segment of the esophagus is frequently seen and associated with histological, but not clinical disease activity. Importantly, histological phenotypes have no impact on response to treatment, as BOT induces remission irrespective of the inflammatory pattern.

G10

Endoscopy detects histologic remission with high accuracy in adults with eosinophilic esophagitis

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Background and aims: Endoscopic reference score (EREFS) assesses the severity of endoscopic findings in patients with eosinophilic esophagitis (EoE). Given the lack of data, we aimed to determine the optimal cutoff value of inflammatory component of EREFS to detect adults with EoE in histologic remission.

Methods: We used data of 350 consecutive adult EoE patients (78% male; median age 42 years old; 537 visits) enrolled into the prospective Swiss EoE Cohort Study. Histologic remissions were defined as a peak count of <15 and ≤ 6 eosinophils/high-power field (eos/hpf). Inflammatory component of EREFS (EEF) was calculated two-ways: 1) the simple EEF score (range from 0-4); and 2) proximal+distal EEF score (range 0-8). We used receiver operating characteristic (ROC) analysis to determine the optimal EEF cutoff values for detecting histologic remission.

Results: During 233 and 191 study visits patients were in histologic remission of <15 and ≤ 6 eos/hpf, respectively. When the simple EEF was examined, patients in histologic remission of <15 and ≤ 6 eos/hpf were detected with area under the curve (AUC) values of 0.850 and 0.829, respectively. When the proximal+distal EEF was used, patients in clinical and histologic remission were detected with AUC values of 0.853 and 0.830, respectively. Using histologic remission definitions, we identified optimal cutoff values of 1.5 for both simple and proximal+distal EEF. Simple EEF score of 2 identified patients in histologic remission of <15 and ≤ 6 eos/hpf with overall accuracy of 79% and 77%, respectively. Proximal+distal EEF score identified patients in histologic remission of <15 and ≤ 6 eos/hpf with overall accuracy of 79% and 78%, respectively.

Conclusions: Endoscopy can be used to predict histologic remission in adults with EoE with reasonable degree of accuracy. The cutoff value of 2 should be evaluated as EREFS-based inflammatory remission definition in clinical trials.

G11

Systematic assessment of subepithelial histologic alterations in adults with eosinophilic esophagitis

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Background and aims: Assessment of inflammatory activity of eosinophilic esophagitis (EoE) is based on eosinophil counts in the epithelial layer. Standard esophageal biopsies allow assessment of subepithelial alterations in only half of the tissue samples. As of yet, it is unknown if systematic assessment of subepithelial alterations adds clinically relevant information when compared to taking esophageal biopsies alone. There-

fore, we aimed to assess the relationship between epithelial alterations, subepithelial alterations, endoscopic activity, and symptoms.

Patients and methods: Adults with established EoE diagnosis were prospectively included during a yearly follow-up visit. Patients underwent assessment of clinical, endoscopic, and histologic disease activity using EoE-specific scores.

Results: A total of 774 visits in 151 EoE patients were analyzed (75.5% males, 40.2±16.1 years at inclusion). Median peak eosinophil count was higher in the epithelial compared to the subepithelial layer (31 [IQR 8-65] vs 12 [2-40], $p < 0.001$). We found a strong positive relationship between subepithelial peak eosinophil count and epithelial peak eosinophil count (ρ 0.644), epithelial histology score (ρ 0.654), endoscopy score (EREFS, ρ 0.436, all p -values < 0.001). Adding subepithelial to epithelial eosinophils did not improve the relationship with endoscopic activity (ρ 0.576 vs. 0.521) or symptoms (ρ 0.192 vs. 0.256) compared to epithelial eosinophils alone.

Conclusions: The addition of subepithelial inflammatory activity to epithelial alterations did not improve the relationship with endoscopic activity or symptoms. As such, we cannot advocate that subepithelial biopsies should be routinely taken. However, in selected cases, subepithelial biopsies might be of interest to assess the degree of underlying fibrosis.

G12

Update 2023 on the Swiss Eosinophilic Esophagitis Cohort

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Background and aims: Eosinophilic Esophagitis (EoE) is diagnosed with increasing incidence and has a current prevalence of 1 in 2,000 persons in Switzerland. The Swiss EoE Cohort Study (SEECs starting in 2016) collects longitudinal data on adult patients with eosinophilic esophagitis (EoE) to better characterize natural history, long-term treatment outcomes and clinical uptake/impact of emerging treatment options, safety aspects, EoE-specific quality of life, and socio-economic impact.

Patients and methods: Patients are included using validated online instruments (via redcap) for capture of symptoms, EoE-specific quality of life, endoscopic and histologic activity. A follow-up visit is performed once a year. A biobank (located at CHUV) stores biopsies and blood samples. In addition to patients with EoE, samples of patients with gastro-esophageal reflux disease (GERD) and esophagus-healthy controls are collected. SEECs is supported by the Swiss National Science Foundation. Approval from the major Swiss IRB's has been granted.

Results: As of May 2023, 703 patients with EoE, 29 with GERD, and 33 esophagus-healthy controls have been included. Recruitment performance is on track with anticipated 70 EoE patients per year. Biosamples have been provided to collaborators for evaluation of novel diagnostic and therapeutic approaches. As of May 2023, seven papers were published with SEECs data and several projects are ongoing.

Conclusions: Over the last years, SEECs evolved into one of the largest prospective long-term cohort studies in the world for adult EoE patients. Besides fostering research collabora-

tions in the field of translational and clinical science, it is an excellent tool to monitor efficacy and safety aspects of novel therapeutics after market approval.

G13

Elevated Mucosal Alterations (EMA) – a novel endoscopic sign of Eosinophilic Esophagitis (EoE)

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Background: EoE is a chronic-inflammatory disease of the esophagus typically inducing non-lesional and non-elevated mucosal abnormalities, classified as EREFS. However, in addition to these well-established features we frequently observe elevated mucosal alterations (EMA), either in a plaque- or in a polypoid-shaped form. Currently EMA are neither described nor characterized and their potential significance is currently not understood.

Methods: We prospectively included EoE-Patients presenting to our EoE-Clinic between 12/2022 and 04/2023. In all patients 3-4 biopsies were taken (proximal and distal oesophagus). We classified patients as EMA+, EMA- or EMA $_{indeterminate}$ and took ≥ 1 biopsy in EMA+ patients from the lesion in addition to the standard biopsy regimen. Biopsies were HE-stained and evaluated using the EoEHSS.

Results: In total 36 were included ($m = 80\%$) in the analysis. 24 (66%) were EMA- whereas 12 (33%) were EMA+. Among EMA+ patients 7 (58%) had an active EoE out of which 4 (57%) had also significantly elevated eosinophil counts in the EMA. No dysplasia was found within the EMA. Overall patients with an active EoE were more likely to have EMAs than EoE patients in remission (58% vs. 20%).

Conclusions: EMA represents a novel endoscopic feature frequently seen in EoE patients, which likely indicates active inflammation and is a guide for biopsy sampling. Further analyses are necessary to determine the significance of this newly described feature.

G14

Dual-targeted therapy with Certolizumab and Risankizumab for the treatment of Crohn's disease and spondylarthritis

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Background: The treatment of Crohn's disease (CD) presenting with a treatment-refractory disease course and concomitant axial spondyloarthritis (SpA) is challenging. Combination therapies with novel therapeutics, such as the interleukin 23 antibody Risankizumab and anti-TNF antibodies, might be novel options.

Methods: The treatment of Crohn's disease and SpA with Dual-targeted therapy (DTT) Risankizumab and Certolizumab pegol was assessed using the Harvey Bradshaw index (HBI), simple endoscopy score of Crohn's disease (SES-CD) and SpA disease activity score (ASDAS-CRP) before and after initiating DTT.

Results: We started Risankizumab treatment in CD refractory to TNF-neutralization with concomitant SpA. CD showed a response to Risankizumab. However, the patient developed a severe flare of the SpA under Risankizumab treatment. Considering CD's response to Risankizumab and SpA to Certolizumab, a

DTT with Risankizumab and Certolizumab was initiated. All disease activity scores decreased after starting DTT, including the HBI (decrease of 6 points), the SES-CD (decrease of 8 points), and the ASDAS-CRP (decrease of 3.5 points). Two common cold episodes were two adverse events (AE) that spontaneously resolved. No other AE was described during the reviewed period of 19 months.

Conclusion: The Risankizumab and Certolizumab pegol combination therapy is safe in this patient with refractory CD and SpA. Randomized controlled trials are needed for further understanding of their safety and efficacy. DTT for CD and SpA provides a promising perspective to improve IBD treatment outcomes in patients who fail to achieve remission with monotherapy.

G15

First description of azilsartan-induced sprue-like enteropathy

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Case: A 74-year-old man presented with excessive non-bloody diarrhea, nausea, and weight loss. Medical history included hypertension treated with azilsartan (AS). Clinical examination was unremarkable and neither laboratory investigations nor stool analysis for pathogenic bacteria and protozoa demonstrated any explaining cause. Abdominal ultrasound and contrast-enhanced CT revealed only accelerated peristalsis. Upper endoscopy and colonoscopy showed distinct villous atrophy in the duodenum and terminal ileum with intraepithelial lymphocytosis and crypt hyperplasia. Results were typical for celiac disease but anti-transglutaminase antibodies were negative. Nevertheless, a gluten-free diet was implemented. Additionally, AS was stopped because of hypotension. As symptoms disappeared, the patient was discharged. After 3 months AS therapy was reinitiated. Acute severe diarrhea reoccurred 11 days later. Comprehensive medical examination was repeated, but still being inconclusive except for discovering *C. difficile* toxin in the stool analysis which was treated with metronidazole. A second upper endoscopy confirmed villous atrophy of the duodenum. AS was immediately stopped. Without further specific treatment, symptoms improved after 8 days. In addition, gluten-containing food was reinitiated and tolerated well with documented clinical and histological remission of villous atrophy in the duodenum 5 months later.

Conclusion: AS exposure, de-challenge, and re-challenge combined with the clinical and histological findings showed sprue-like enteropathy as a potential side effect of AS. To our knowledge, this is the first description of a patient with sprue-like enteropathy caused by AS.

G16

First description of simultaneous Sweet's syndrome and tracheal stenosis in a patient with highly active ulcerative colitis

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Background: Sweet's syndrome and tracheal stenosis are very rare extraintestinal manifestations (EIM) of inflammatory bowel diseases (IBD). Here, we present a patient with ulcerative colitis (UC), in which these two very uncommon EIM occurred simultaneously.

Case presentation: A 33-year-old woman with a 4-year history of mild distal UC, which was treated with topical therapy, presented at our department with a 2-weeks history of recurrent pyrexia, myalgia, arthralgia, headache, and rhinosinusitis. The laboratory findings revealed leucocytosis, a strongly elevated serum CRP level (314 mg/l), and elevated liver enzymes (4x ULN). Infections, including viral hepatitis, were excluded. Abdominal imaging demonstrated thickening of the colonic wall at the splenic flexure. The disease course was further complicated by a sudden onset of progressive neck pain, hoarseness, and stridor. MRI and fibre-optic assessment of the trachea demonstrated tracheal stenosis, requiring urgent admission to the ICU. Simultaneously, the patient developed an abrupt onset of tender erythematous nodules on both lower extremities, suspicious of a cutaneous EIM of UC. Histology of skin biopsy sampling revealed a subcutaneous neutrophilic infiltration, consistent with the diagnosis of Sweet's syndrome. Intravenous steroids were initiated with a prompt response of both the cutaneous and the pulmonary EIM. The further diagnostic work-up included colonoscopy which demonstrated highly active, segmental, left-sided colitis with rectal sparing.

Discussion: Sweet's syndrome is a rare but important differential diagnosis in IBD patients with active intestinal inflammation and painful erythematous nodules in the absence of an infection. This syndrome has been described as EIM of IBD or other autoimmune diseases and may also be associated with hematologic neoplasia. Some cases have been linked to azathioprine treatment which was not used in the patient described here. Typically, it parallels IBD activity, particularly in colonic IBD, and there is an association with female gender. In our patient, the rectal sparing, which is likely attributed to topical treatment, probably accounted for the absence of clinical signs of increased IBD activity. However, the very high serum CRP level and the simultaneous occurrence of several EIM (cutaneous Sweet's syndrome, arthralgia, pulmonary involvement with tracheal stenosis), which all responded to steroid therapy, demonstrated a massive inflammatory syndrome in our patient.

Conclusion: To our best knowledge, this is the first patient, in which these two very rare EIM of IBD (Sweet's syndrome and tracheal stenosis), which showed an excellent response to i.v. steroids, have been described in the same patient.

G17

A case report of intestinal tuberculosis in Switzerland

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Background: Tuberculosis (TB) is a world- wide deadly infectious disease with predominately pulmonary manifestations. Abdominal TB comprises around 5% of tuberculosis worldwide.¹

Case presentation: A 34 yo male patient, from Eritrea, was adressed for endoscopic workup due to abdominal pain and 20kg weight loss in recent months. The colonoscopy showed severe inflammatory lesions in terminal ileon and caecal pole (figure 1) as well as an excavated lesion in the sigmoid colon. The positive Quantiferon and histology findings (figure 2) confirmed the diagnosis of intestinal tuberculosis. Quadruple anti-biotherapy was started with rapid clinical improvement.



Figure 1: Caecal pole

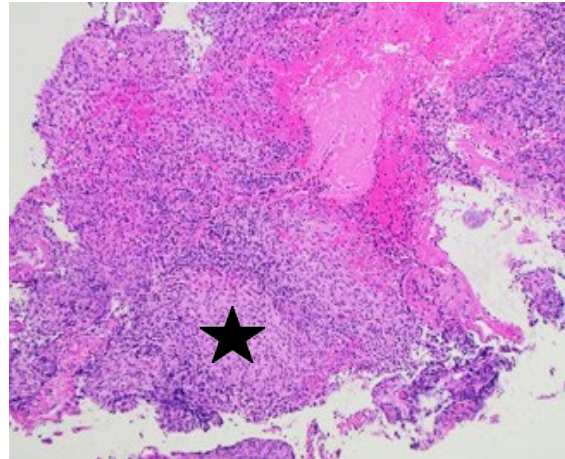


Figure 2: Histology (★ granuloma)

Discussion: Intestinal tuberculosis (IT) typically affects the ileocaecal region (75% of cases) and leads to ulcerohyper-trophic lesions. [1] IT can lead to severe complications (fistula, abscess, stenosis and perforation). [2]

Conclusion: Don't forget tuberculosis in foreign patients with B-symptoms.

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POSTER: ENDOSCOPY

E1

Routine endoscopy prior to surgical ostomy closure: an obsolete concept

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Background: Closure of temporary diverting ostomies is routinely preceded by an endoscopic study of the colonic mucosa and anastomosis, despite lacking evidence of its relevance and impact on subsequent operative management. We sought to determine the incidence of pathological findings and thereby evaluate the clinical benefit of routine pre-operative endoscopy in asymptomatic patients, hypothesizing sole evaluation of the anastomotic integrity to be sufficient in these cases.

Methods: Retrospective analysis of patients evaluated endoscopically prior to ostomy reversal between 2002 and 2020 at the University Hospital Zurich.

Results: Endoscopy results of 214 patients were evaluated, with focus in patients asymptomatic at time of endoscopy. Mucosal findings in asymptomatic patients were documented in 30.7% of cases (61/199). Findings at the anastomotic site were detected in 9.6% of all asymptomatic cases. A change in subsequent patient and surgical management was noted in 23 patients of the entire cohort (11.6%) and in 11 (5.5%) of all asymptomatic cases.

Conclusions: Our findings strongly suggest ostomy closure surgery without previous routine colonoscopy to be acceptable in asymptomatic patients. The assessment of the anastomotic site, but not the entire colon, by means of endoscopy or alternatively contrast studies prior to stoma closure is sufficient and remains justified.

E2

Contribution of ineffective motility and absent peristaltic reserve to the severity of gastroesophageal reflux disease

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Background: Peristaltic reserve is the normal augmentation of peristaltic contraction amplitude at the end of a series of multiple-rapid swallows (MRS). Normal peristaltic reserve in patients with ineffective esophageal motility (IEM) has been reported to a predictor of good outcome after fundoplication. Conversely, absent peristaltic reserve following MRS is associated with poor esophageal clearance.

Aim: Evaluate esophageal acid exposure and mean nocturnal baseline impedance (MNBI) in patients with IEM and patients with normal motility with and without peristaltic reserve.

Methods: Patients undergoing high-resolution esophageal manometry (HRM) and 24-h impedance-pH monitoring (24h-Imp-

pH) were classified as having IEM or normal esophageal manometry according to Chicago 4.0 criteria. Peristaltic reserve was declared present (PR+) if distal contraction integral (DCI) following a series of 4x5ml rapid swallows $\geq 25\%$ greater than the average DCI following 10 single 5ml swallows. We compared esophageal acid exposure (% time pH <4), number of reflux episodes and MNBI in patients with IEM/normal motility with (PR+) and without (PR-) peristaltic reserve.

Results: Between February 2020 and December 2022 we identified 220 patients (132;60% females, avg (\pm SD) age 54 (\pm 15) years with IEM (49;22%) and normal motility (171;78%). Esophageal acid exposure, number of reflux episodes and MNBI are summarized below.

Summary/conclusion: Absent peristaltic reserve combined with ineffective esophageal motility is associated with higher esophageal acid exposure and lower mean nocturnal baseline impedance suggesting that patients with IEM and absent peristaltic reserve have a more severe form of GERD compared to patients with normal motility with normal peristaltic reserve.

Parameter	IEM/PR- (N = 17)	IEM/PR+ (N = 32)	Normal/PR+ (N = 88)	Normal/PR- (N = 83)	p-value
% #me pH <4	7.9 \pm 2.8*	6.5 \pm 1.2	5.7 \pm 1.0	3.4 \pm 0.6*	0.056
# reflux episodes	71.6 \pm 14.0*	90.4 \pm 17.5	65.7 \pm 9.8	46.3 \pm 3.8*	0.034
MNBI (Ohm)	1667.1 \pm 267.7*	1726.2 \pm 209.4	2074.7 \pm 117.4	2325.7 \pm 110.6*	0.020

Data are presented as mean \pm SEM
* p <0.05 in post-hoc comparison IEM/PR- vs. Normal/PR+

E3

Is colorectal endoscopic submucosal dissection (ESD) ready for prime time? Results from the Geneva experience

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Background: Endoscopic submucosal dissection (ESD) is a curative treatment for superficial colorectal lesions. However, data on its results in Switzerland are scarce. The purpose of this study is to evaluate the feasibility, the efficacy and the morbidity of ESD in the colon.

Methods: We retrospectively collected data on all consecutive ESD performed at HUG from February 2020 to May 2023.

Results: In total, 37 patients were analyzed (46% male, 67 years old). 90% of lesions were granular lateral spreading tumors (LST) with 48% presenting at least one macronodule. Their size ranged from 20 to 120mm (mean 58mm). They were located in the right (16%) or left (14%) colon and in the rectum (70%). Histologically, these lesions corresponded to low (32%) or high (54%) grade dysplastic adenomas and 14% adenocarcinomas. The average duration of the procedure was 66 min (average speed of 25 mm²/min). Monobloc resection, R0, curative rates (i.e presence of normal tissues on all margins) were 73%, 84% and 76%, respectively. Regarding carcinomatous lesions 4 out of 5 were curatively treated by ESD alone. Overall, the complication rate was 10% (5% perforation and 5% postoperative bleeding). Surgery was performed based on surgical evaluation in the 2 cases of perforation, and histological specimen of the colectomy showed no residual lesion. The mean duration of hospitalization was 0.5 days.

Conclusion: ESD is a safe and effective treatment of superficial colorectal lesions. It can be performed in ambulatory conditions in most patients. These results confirm those of European studies and should help promoting the development of ESD in Switzerland.

E4

Assessment of human gut-vascular- and epithelial barrier in-vivo and real-time by probe-based confocal laser endomicroscopy: Concept-paper and pilot-trial in liver cirrhosis

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This study aimed to evaluate intestinal permeability in cirrhotic patients using confocal laser endomicroscopy (CLE).

A total of 14 participants, including 5 healthy controls and 9 cirrhotic patients (3 Child A, 3 Child B, and 3 Child C), were recruited from patients undergoing endoscopy at the Inselspital in Bern between January 2018 and February 2023. The study employed various methods to analyze CLE images, including the three-line method for calculating the apex-base ratio and the three-layer method for comparing fluorescence in the lamina propria, epithelium, and lumen. Additionally, the Confocal Leak Score (CLS), developed by Chang et al., and the epithelial gap density score, developed by Turcotte et al., were adopted to quantify intestinal permeability.

The results revealed a significant difference in the apex-base ratio between the healthy controls and each of the cirrhotic groups. Furthermore, the Child A group exhibited a significant difference compared to the Child B and C groups. The three-

layer analysis demonstrated an increase in luminal fluorescence in cirrhotic patients compared to the controls.

These findings indicate enhanced intestinal permeability in cirrhotic patients relative to controls, contributing to the understanding of intestinal permeability in cirrhosis. The study highlights the potential of CLE as a valuable tool for assessing barrier dysfunction in patients with liver cirrhosis.

E5

Characteristics of Pancreatic Fluid Collections Predict Disconnected Pancreatic Duct Syndrome in Acute Pancreatitis Requiring Endoscopic Intervention: A Single-Center Cohort Study

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Background: Disconnected Pancreatic Duct Syndrome (DPDS) is an important but often underdiagnosed pathophysiologic entity of acute pancreatitis (AP). A delayed diagnosis of DPDS results in increased morbidity and duration of hospital stay, and early diagnosis is therefore crucial. We aimed to investigate the prevalence of DPDS in patients with pancreatic fluid collections (PFC) and risk factors associated with the presence of DPDS.

Methods: Retrospective cohort study including all patients with PFC requiring endoscopic intervention after AP from a Swiss tertiary referral center between 2015 and 2019. Primary outcome was a diagnosis of DPDS, secondary outcome were risk factors predicting DPDS using multivariate regression analysis.

Results: 71 patients (50 men), mean age 57.1 +/-14.2 years were studied. In 24 patients (33.8%) a DPDS was diagnosed. The recurrence rate of PFC after endoscopic treatment was significantly higher in patients with DPDS compared with patients without DPDS (58.3% vs. 2.1%, p = <0.001). Need for multiple interventions (>3 interventions, OR 4.8; 95% CI, 1.6-14.5), multifocal PFC (OR 3.7, 95% CI 1.8-14.5), and pancreatic necrosis >4 cm (OR 5.2, 95% CI 2.3- 18.3) were predictors of DPDS.

Conclusions: DPDS is common in patients with PFC and associated with a high recurrence rate of PFC after endoscopic intervention. Early imaging to confirm DPDS in the presence of large pancreatic necrosis and multifocal PFC requiring recurrent interventions may have a critical impact on patient management.

E6

Left-Sided Portal Hypertension With Progressive Gastric Varices: Splenosis as an Uncommon Etiology

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Background: Left-sided portal hypertension (LSPH) is a rare and distinct form of portal hypertension typically resulting from thrombosis or stenosis of the splenic vein. As a consequence, splenic venous blood will drain via the short gastric veins to the stomach leading to the development of gastric varices. LSPH can manifest as either asymptomatic gastric varices or life-threatening variceal bleeding. Various causes of LSPH, such as splenic vein thrombosis/occlusion secondary to pancreatitis, cysts, or tumors, have been reported. However, splenosis, the ectopic placement of normal splenic tissue following traumatic spleen injury or splenectomy, has only rarely been identified as a cause of LSPH.

Methods: In this report, we present the management of an unusual case of LSPH with extensive gastric fundal varices due to splenosis following traumatic spleen rupture.

Results: We evaluated a 56-year-old Caucasian female, without a history of bleeding or thrombocytopenia, who visited our clinic for portal hypertension following the incidental discovery of isolated gastric varices (IGV-1 according to Sarin classification). Three decades earlier, the patient had undergone splenectomy following spleen rupture in a traumatic car accident. During a recent routine gastroscopy conducted for dyspepsia, we observed numerous and atypical submucosal dilated vessels lining the gastric fundus. Hepatic venous pressure gradient (HVPG) measurement yielded a normal value of 3 mmHg, indicating pre-sinusoidal and/or left-sided portal hypertension. Liver histology revealed no abnormalities. Subsequent evaluation by endoscopic ultrasound (EUS) revealed the presence of convoluted varicose veins with unexpected arterio-venous shunts. This finding was attributed to a 70 mm large splenule infiltrating the left subdiaphragmatic peritoneum and gastric wall, as demonstrated by MRI. CT angiography delineated the arterial supply of the fundal varices through branches of the splenic and left gastric arteries, which were feeding the splenosis. Considering these distinctive findings, we elected to pursue primary surgical correction of the LSPH by gastric wedge resection as well as resection of the splenosis and gastric varices.

Conclusions: LSPH requires careful evaluation and individualized management to address the underlying causes and minimize the risk of complications associated with portal hypertension. Treatment options, depending on the clinical context (primary vs. secondary prophylaxis vs. active bleeding) encompass non-selective beta-blockers, cyanoacrylate injections/coiling, shunt placement, and surgical resection.

E8

At night all cats are black? A young patient with Gurrvis' syndrome

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Background: Black oesophagus (Gurrvis' syndrome) is rare (incidence 0.01-0.28%) with less than 150 cases reported in the literature and high mortality up to 32%. Male gender, age >60, diabetes mellitus, diabetic ketoacidosis, hypertension, cardiovascular, liver and kidney disease as well as alcohol abuse are predisposing factors.

Methods: We report the clinical course of 28-year-old patient diagnosed with Gurrvis' syndrome that had presented to the emergency room with nausea, vomiting and severe chest pain

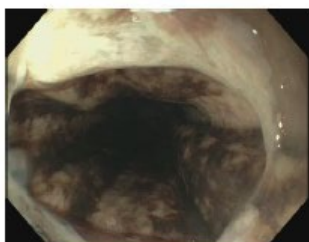


Image 1 and 2: AEN (clear delineation of gastric folds



Image 3: Endoscopy 7 days after intital diagnosis

E7

Video-session: A gastro-gastric anastomosis after old gastroplasty

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An 89 years old woman presented with dysphagia, abdominal pain and vomiting worsening for four days and no bowel movement for one week. She had malnutrition features with low albumin and pre albumin, respectively at 29 g/L and 0.15 g/L. She needed artificial nutrition, via enteral tube and parenteral. A Mason's vertical banded gastroplasty was performed in 1982 and a gastric band surgery in 1990 which was then removed. In total, she lost 60 kg. CT scan showed narrowing of the gastro-gastric anastomosis and liquid stase in the esophagus and stomach. Oeso gastric oral transit was performed showing oeso-gastric reflux but inconclusive regarding gastro-gastric transit. Gastroscopy showed food stasis in the esophagus and gastric pouch secondary to lumen narrowing of this pouch. A gastric tube in aspiration was placed with low volume evacuated. A gastro-gastric anastomosis with a 20-mm LAMS was performed, dilatation of LAMS lumen at 15-mm. Oeso gastric transit was then performed showing improvement of the transit. The patient was discharged 24 hours after the procedure. Since the intervention, she has been able to gradually resume an almost normal diet. One year after the procedure, she no longer suffers from dysphagia and can eat all kind of food except meat, causing discomfort. She gained 2 kg since her last hospitalization.

after a week of fasting and intermittent alcohol abuse and a history of borderline personality treated with venlafaxine.

Results: At presentation, laboratory results showed non diabetic ketoacidosis (pH 7.1) with impaired kidney function and leukocytosis. The patient developed septic shock. Gastroscopy showed inflammation and necrosis from the proximal to distal oesophagus with clear delineation of the gastric mucosa (image 1 and 2). CT scan revealed minimal pneumomediastinum but no perforation.

Conclusions: A diagnosis of black oesophagus was made and oesophageal necrosis improved with conservative management. For acute bleeding or perforation stent or sengstaken placement is highly controversial due to aggravation of ischemia. In case of perforation, management is mainly surgical. Strictures are common and are managed endoscopically. Our patient is the youngest reported in the literature. Increased alcohol intake and prolonged fasting with consecutive metabolic acidosis lead to acute oesophageal necrosis (AEN).

E9

Combining ESD and Endoscopic Full Thickness Resection (hybrid ESD-EFTR) for complete endoscopic resection of a gastric schwannoma mimicking GIST

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Background: Gastric schwannomas are benign tumours, originating from the so-called Schwann cells, which cover peripheral nerves. They are usually slow-growing and can occur at any location of the body. They represent a rare entity of a submucosal lesion in the upper GI tract.

Case Presentation: Here, we present the case of a 67-year old male Caucasian, who presented with fatigue and severe iron deficiency anaemia. In the gastroscopy, we found an 11 x 8 mm submucosal tumour in the gastric antrum. Upper EUS revealed a tumour originating from the muscularis propria without lymphadenopathy, suggestive of a gastrointestinal stroma tumour (GIST).

Submucosal biopsies were not diagnostic. Assuming a gastric GIST of small size, annual endosonographic follow-up exams were performed. Because of increasing size, endoscopic resection was discussed with the patient.

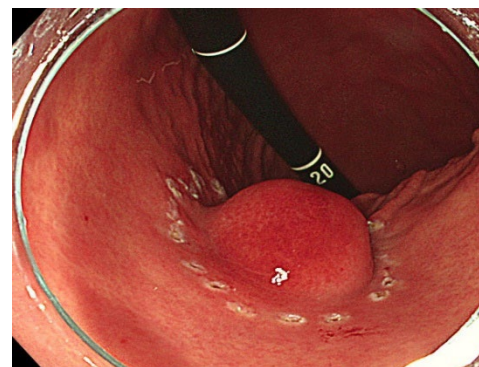
Given the localization in the muscularis propria, the intervention was planned as Endoscopic Full Thickness Resection (EFTR). Considering the size of the lesion, which would not allow a safe R0 resection by EFTR alone, a combined ESD and EFTR (hybrid ESD-EFTR) was performed. Initially the lesion was incised circumferentially with a triangle tip knife. With this technique, the amount of mucosal tissue was reduced, allowing to completely pull the lesion into the cap of the FTRD device and in order to reach a safe and macroscopically complete resection. Histology revealed R0 resection of a gastric schwannoma.

Conclusions: This case illustrates an efficient and safe endoscopic hybrid technique for the removal of submucosal gastric lesions which would be too large for an R0 resection by EFTR alone.

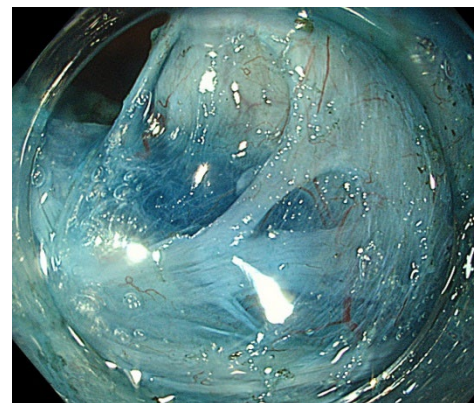
Conclusion: We present a case of a complete endoscopic resection of a gastric GIST as an alternative to gastric surgery in selected cases.



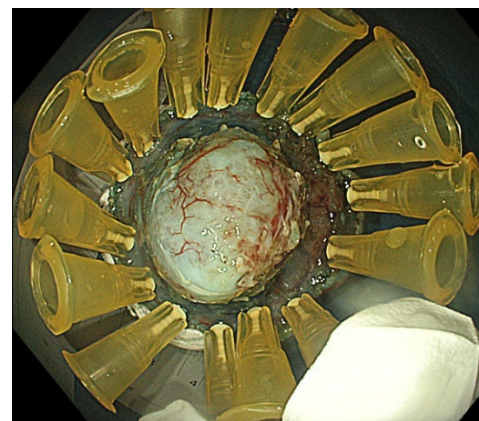
Endosonographic presentation



Endoscopic presentation



Residual muscular fibers



En-bloc resection

E10

Endoscopic submucosal dissection of a gastric GIST

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Background: Gastrointestinal stromal tumors (GIST) origin typically from the deep muscular layer of the stomach and were considered as a surgical entity before the arrival of new endoscopic techniques.

Case presentation: We present a 2.1cm subepithelial tumor in an 83-year-old woman. The size of the tumor was increasing over the last 2 years without metastasis on CT scan. The tumor originated endosonographically only with few bundles from the muscularis propria layer. A previous biopsy had already confirmed the diagnosis of a GIST. As the patient refused abdominal surgery, we planned an endoscopic resection using endoscopic submucosal dissection (ESD) technique.

Treatment: Using traditional ESD technique, the tumor was slowly dissected from the deep muscle layers. A traction device was used. Few residual muscular fibers were transected without perforation. Finally, the defect was closed with conventional clips. There were no postinterventional complications. The resection was histologically complete.

POSTER: HEPATOLOGY

H1

Thy-1 expression in liver histology correlates with fibrosis grading in patients with primary biliary cholangitis

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**shared senior authorship*

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Background: Thy-1 is an adhesion molecule of fibroblasts expressed by periportal myofibroblasts but not hepatic stellate cells. It is also present in serum in a soluble form (sThy-1). Our aim was to investigate whether Thy-1 expression in liver histology and serum sThy-1 levels correlate with the degree of liver fibrosis in patients with primary biliary cholangitis (PBC).

Methods: Liver histologies were stained with a Thy-1 antibody and anti-alpha-smooth muscle actin antibody (SMA). The analysis was semi-quantitative. Three disease groups were defined according to METAVIR (F0/1, F2, F3/4). sThy-1 was measured using an enzyme-linked immunosorbent assay.

Results: Samples from 68 patients with PBC were included. Median (IQR) age at histology was 59 years (46-58.5), with 82.3% being women. METAVIR F0/F1 was present in 30.9% of patients on histology, F2 in 32.35%, and F3/4 in 36.7%. Thy-1 staining intensity correlated significantly with fibrosis severity (OR 10.8, CI 4.07-28.7, $p < 0.001$). The association between sThy-1 and fibrosis groups was significant with however a small effect size (OR 1.00029, CI 1.000031-1.000549, p -value 0.028).

Conclusion: Our findings indicate that Thy-1 expression in liver histology in patients with PBC correlates significantly with the degree of fibrosis. Shedding of sThy-1 from Thy-1 positive cells seems present, but not relevant enough for it to be a valuable marker for fibrosis grading in the blood in PBC.

H2

Primary sclerosing cholangitis with features of autoimmune hepatitis: phenotypic characterization and prognosis

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Background and Aims: A minority of patients with primary sclerosing cholangitis (PSC) display features of autoimmune hepatitis (AIH), which is called PSC-AIH overlap syndrome (OS). The prognosis of OS is poorly known. Our aim was to compare the prognosis of OS and PSC patients.

Method: This retrospective analysis included OS and PSC patients followed in a tertiary referral center for cholestatic diseases from 1984 to 2023 with at least one year of follow-up. OS was defined by the presence of two out of three criteria for AIH (ALAT >5x upper limit of normal; IgG ≥ 1.5 ULN or smooth muscle antibody titer >1:80; typical/compatible signs on liver histology). The primary outcome was survival without being listed for liver transplantation (LT) and was assessed using log-rank test and adjusted with inverse probability weights.

Results: 27 patients with OS and 253 with PSC were included. Median age at diagnosis was 21 years (15-28) in OS and 30 years (21-43) in PSC ($p = < 0.001$). 70.4% were male in the OS group and 68.7% in the PSC group ($p = 0.8$). Median follow-up time was 8.87 years (5.8-15.2) in OS and 7.22 years (4-11.7) in PSC patients. Survival without being listed for LT was not significantly different between OS and PSC patients, even after adjustment for sex, age and cirrhosis at diagnosis.

Conclusion: OS patients treated with immunosuppressive treatment have a survival similar to the one of PSC patients.

H3

Extensive Teriflunomide-Induced Liver Injury Requiring Accelerated Drug Elimination by Cholestyramine

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Background: Teriflunomide (Aubagio®) is a once-daily oral immunomodulator approved for the treatment of multiple sclerosis (MS). In contrast to its active metabolite leflunomide, teriflunomide has only rarely been reported to cause severe drug-induced liver injury (DILI). A unique characteristic of teriflunomide is its long half-life (20 days) due to enterohepatic recycling, which is critical in case of adverse events and pregnancy.

Methods: Herein, we report the occurrence and management of two cases of extensive and long-lasting DILI with jaundice attributed to teriflunomide.

Results: More than a year post-teriflunomide initiation, two MS patients developed distinctive liver injuries: hepatocellular (R ratio >5) with ensuing jaundice in Patient A, and cholestatic (R ratio <2) in Patient B (Fig. 1). Other potential liver injury causes (viral, metabolic/alcohol, autoimmune, biliary obstruction, paracetamol) were ruled out, rendering the RUCAM DILI causality assessment as possible/probable. Liver biopsies conformed to DILI characteristics, and liver function remained preserved in both patients (grade 3 and 4 DILIN severity, respectively). Accelerated teriflunomide elimination was achieved using cholestyramine (4-8 g tid) and activated charcoal (50 g bid). Patient A, whose transaminases remained elevated >10x ULN, was also administered a brief prednisone course. Both patients eventually recovered and switched to alternative MS treatments.

Conclusions: Regular liver tests are paramount for teriflunomide-treated patients. If DILI occurs, teriflunomide should be discontinued and eliminated using cholestyramine or activated charcoal.

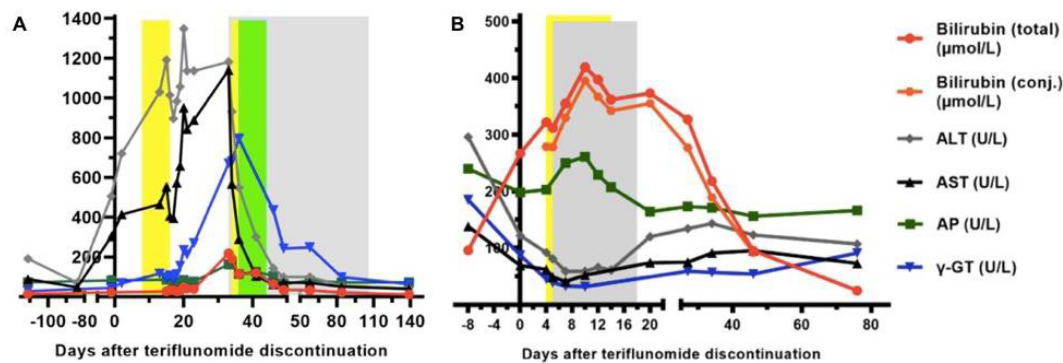


Fig. 1: Evolution of liver enzyme activities and the bilirubin level. X-axis represents days after teriflunomide was stopped. Y-axis represents the concentration and enzyme activity levels, respectively. The period of the cholestyramine administration is highlighted in yellow (Case A: Cholestyramine administration and rechallenge had to be stopped after 8 and 3 days respectively due to an allergic reaction; Case B: 11 days from hospital admission). The period of activated charcoal administration is marked in green, the period of the prednisone trial is marked in grey.

H4

Prolonged Drug-Induced Liver Injury After Ingestion of Dietary Supplement “ECA Extreme Fat Burner” Containing Ephedra

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Background: Ephedra (*Ephedra sinica*), also known as Ma Huang, is a plant used in traditional Chinese medicine. In recent years, it has found use as a weight loss agent and bodybuilding aid in the U.S. and Europe. However, Ephedra preparations have been implicated in multiple instances of acute liver injury including fatal liver failure, with symptoms mirroring acute viral hepatitis and recovery varying from one to six months (LiverTox database). The plant’s sale is banned due to its potential side effects, but it is still illegally available in several countries, including Switzerland, through websites (Figure) or fitness studios.

Methods: We report on a 29-year-old obese female (BMI 35 kg/m²), previously healthy, who developed severe drug-induced liver injury (DILI) likely due to Ephedra contained in the dietary supplement “ECA Extreme Fat Burner”.

Results: The patient presented with fever, weight loss (8 kg in 4 weeks), cough, jaundice, frequent pale stool, and dark urine 3 weeks after starting the dietary supplement. Initial tests indicated hepatocellular pattern DILI (R ratio 11, ALT 671 U/l, ALP 130 U/l, total bilirubin 201 umol/l, direct bilirubin 121 umol/l) with normal liver synthetic function (INR 0.9, Factor V >100%). Imaging studies showed normal intra- and extrahepatic ducts, except for unrelated hemangioma. Other liver injury causes were ruled out, yielding a RUCAM DILI causality assessment of “highly probable” (9 points). Liver biopsy was consistent with DILI, presenting lobular, lymphocytic hepatitis with hepatocellular cholestasis. With severe pruritus and a rise in serum bile acid concentration (129 umol/l, normal 1-6 umol/l) as well as bilirubin (394 umol/l, DILI Network severity grade 3), the patient was treated with prednisone (40 mg qd) and plasmapheresis due to intolerance of cholestyramine. These measures rapidly improved symptoms and liver blood test. The patient eventually recovered with normalized liver tests (12 weeks).

Conclusions: Physicians and patients must be aware of DILIs caused by both legal and illegal dietary supplements, highlighting the need for stringent regulation and education regarding the use and risks of such products.



ECA EXTREME Fatburner Ingredients / Nutritional Information:

servicing size: 1 capsule, 780mg
 servings: 60 servings
 container: 60 capsules

*% RDA = percentage of recommended daily intake (based on a daily requirement of 2000 calories)

Ephedra Extrakt	50 mg
Koffein	200 mg
Aspirin	150 mg
1,3-Dimethylamylamin (DMAA)	50 mg
ECA EXTREME BLEND	330 mg
further ingredients	Synephrine, Bioperine, Higenamine, Yohimbine HCL, 11-Hydroxy Yohimbine, B-Phenylethylamine, Hyperzin A, Hordenine HCL, Green Tea Extract

Found on <https://swisspharmaceuticals-shop.com/>

H5

Severe Hepatic Decompensation As Long-Term Complication After Distal Very Long Roux-en-Y Gastric Bypass

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Background: While bariatric surgeries such as Roux-en-Y gastric bypass and sleeve gastrectomy often improve metabolic disorders, including non-alcoholic fatty liver disease (NAFLD), some surgeries leading to malabsorption can exacerbate these conditions. Notably, distal gastric bypass with a very short common channel may prompt NAFLD progression, increased fibrosis, cirrhosis, and liver failure.

Methods: This retrospective study examined patients who underwent distal very long Roux-en-Y gastric bypass (DVLRYGB) and subsequently developed severe hepatic decompensation.

Results: A total of eight patients with hepatic decompensation after gastric bypass were identified (six females, two males, initial BMI 43–56 kg/m²). All patients received DVLRYGB with very short common channel (range 30 to 100 cm). Decompensation occurred on average 10 (5–13) years after bypass surgery (2007–2010) at the age of 45 (32–59). All patients presented with malnutrition, hypoalbuminemia and severe episodes of hepatic encephalopathy (West Haven grade 3 and 4) necessitating hospitalization and intensive therapy (lactulose, rifaximin, L-ornithine-L-aspartate). 6/8 (75%) patients presented with ascites. 5/8 (63%) patients had histologically verified progression to liver cirrhosis with steatohepatitis after gastric bypass (all Child-Pugh class C, range MELD scores 19–29 points) and documented clinically significant portal hypertension (range HVPG 10–20 mmHg). At the time of data assessment, 4/8 (50%) patients had undergone successful proximalization of the gastric bypass with improvement of liver function and resolution of symptoms (hepatic encephalopathy, ascites, malnutrition). The remaining 4 patients are currently being prepared for proximalization surgery. A pre-operative TIPS shunt was placed in 3 patients with severe portal hypertension (HVPG ≥16 mmHg).

Conclusions: Distal gastric bypass with very short common channel heightens the risk of long-term hepatic decompensation. Regular surveillance (i.e. labs, ultrasound, elastography, liver biopsy) and early conversion to proximal gastric bypass are necessary for DVLRYGB patients to prevent liver failure.

H6

Rifaximin-resistant *C. difficile* in hospital transmission in patients sharing a room: A case report

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Background: Rifaximin, a rifampicin derivative poorly absorbed in the gut, is used to prevent hepatic encephalopathy (HE) in cirrhotic patients. Also, it is a reserve antibiotic in the treatment for *C. difficile* infections (CDI). To date there is no major concern about rifaximin resistance to *C. difficile* in patients with cirrhosis. Method: We report the case of putative development of *C. difficile* rifaximin resistance under prolonged therapy HE, and subsequent transmission among patients.

Results: A 42-year-old (A) and a 53-year-old patient (B), respectively, both hospitalised for decompensation of cirrhosis and sharing one room, were evaluated for new onset diarrhoea. Both patients had been treated with rifaximin, patient A after an episode of HE since 12 months, Patient B for current HE since 4 weeks. Patient B developed serious diarrhoea and was tested positive for toxin producing *C. difficile*. One day later, patient A, who suffered from bloody diarrhoea intermittently, was also tested positive for toxin producing *C. difficile*. Given there is no standardised test for rifaximin resistance, rifampicin resistance was tested. Both samples revealed a rifampicin and thus also rifaximin resistant *C. difficile* strain. Sequencing showed an almost identical gene sequence (only 1 SNP difference), supporting the hypothesis that a rifaximin resistant *C. difficile* strain was transmitted from patient A to B or vice versa.

Conclusion: The indication for rifaximin therapy has been established in patients with cirrhosis. Little is known about bacterial resistance development to rifaximin under long-term therapy. CDI is a potentially life-threatening disease, especially in patients with advanced cirrhosis. The case demonstrates the need for further scientific investigation in the future.

H7

Liver Complex Care Management Rounds: Evaluation Highlights Interprofessional Collaboration and Learning Opportunity

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Background: The liver complex care management rounds (LCCMR, Swiss classifications of surgical interventions (CHOP) 99.B1) was introduced 2018/2019 primarily for billing reasons in order to adequately charge for complex medical inpatient liver care (mandatory inclusion of surgeons). At our KSSG GI inpatient service with an annual average of 76 LCCMR patients, nurses were later integrated to strengthen interprofessional work. Our aim was to evaluate how the current LCCMR was perceived by all team members and to better understand their motivation for involvement.

Methods: Between 05–10/2022, all team members (physicians, registered nurses RN, advanced practice nurses APN; n = 37) who had participated at an LCCMR in the last six months were asked to fill in a written survey. A subsample was additionally invited for individual interviews (n = 9).

Results: *Quantitative:* Totally, 25 of 37 responded. Of them, 84% considered participation as “important to very important”. Main reasons were to give advice, broaden horizons, get help in decision-making and benefit from other expertise. Almost exclusively, surgeons (4 out of 5) were critical of their participation. As most of these critically ill patients had no surgical issues and/or were inoperable, surgeons argued to only participate in terms of obligation. Nevertheless, 88% recognized the benefit of an improved understanding of patient situations through the exchange of clinical information. 84% valued their participation as an important contributor for education. *Qualitative:* In line, nine interview participants further described that listening to the teams clinical reasoning and recommendations was perceived as particularly beneficial. Next to learning, this allowed a holistic decision-making and all participants felt more actively involved. Importantly, participation of APN and/or RN in the LCCMR was perceived as supportive because they strengthened the decision-making process with their input on psychosocial components and inclusion of patient’s perspective.

Conclusions: Our analysis demonstrates that the LCCMR is perceived as an important and ideal setting for decision-making

and learning. In contrast to the originally required interdisciplinary exchange including the mandatory presence of surgeons, the expansion to an interprofessional round enables joint decision-making in complex medical-psychosocial patient situations. It is therefore open for discussion whether the required presence of a surgeon in mostly non-operable patients at the LCCMR should rather be replaced by specialized APN/RN.

H8

Advanced practice nurses' scope of practice in liver care

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Background: Evidence suggests that interprofessional collaboration of Advanced Practice Nurses (APNs) and Hepatologists improves outcomes in patients with liver diseases. In Switzerland, the number of APNs involved in liver care remains limited, with their roles primarily developed by individual patients' needs within each unique clinical setting. Our aim was to compare the scope of practice of two APN roles in Swiss liver care to gain a better understanding of their utilization.

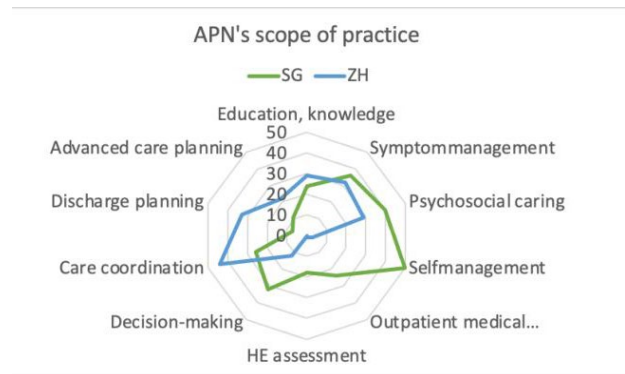
Methods: An APN from St. Gallen (SG) and an APN from Zurich (ZH) prospectively collected data from 08/2022-12/2022. The collected dataset included patient-specific information, process variables, and designated tasks. The data were descriptively analyzed at the organizational level.

Results: The APN-SG predominantly engaged with outpatients (68%), while the APN-ZH almost exclusively participated in inpatient care (80%). Accordingly, more patients in ZH suffered

from liver cirrhosis with higher MELD scores than in SG (93%; 42% MELD >20 vs. 66%; 10% MELD >20).

The APNs' scope of practice reflected these differences (Figure). The APN-ZH largely participated in care coordination (44%), discharge planning (33%) and advanced care planning (22%), while the APN-SG focused on promoting self-management (50%), instructing outpatient medical treatment (e.g., DAAs, multikinase inhibitor etc.) (24%) and conducting hepatic encephalopathy (HE) assessment (18%).

Conclusions: The study findings underscore the diverse scope of APN roles in varying clinical contexts (in- or outpatient setting) thereby mirroring the varied patient needs across the care continuum. These insights might guide other decision-makers in tailoring APN roles to their specific clinical context and resource availability.



POSTER: SURGERY

S1

Glued suture-less peritoneum closure in laparoscopic inguinal hernia repair reduces acute postoperative pain.

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Background: Inguinal hernia repair is one of the most commonly performed operations worldwide. While atraumatic mesh fixation during TAPP is widely accepted, the gold standard technique for closing the peritoneal flap is not addressed in current guidelines yet. This study investigates the use of laparoscopic glue applicators as a suture-less alternative for peritoneal flap closure in regard to postoperative pain.

Methods: A retrospective single- surgeon cohort study comparing acute postoperative pain before and after implementation of glue for peritoneal flap closure. Data between 2016 and 2022 were collected from the Herniated registry. Patient and hernia characteristics were compared descriptively and the effect of suture-less peritoneal flap closure was assessed using a multivariate regression model.

Results: Among 183 patients undergoing TAPP hernia repair, 126 underwent peritoneal flap closure by suturing, while 57 underwent closure using glue. The ratio of patients with pain 7-10 days after procedure was 54% in the suture group and 37% in the glue group ($p=0.032$). The mean pain level was higher in the suture group (VAS= 1.50 vs. 1.31, $p=0.029$) and more patients were still using painkillers (78 vs. 52%, $p=0.023$). Female gender, young age and the presence of preoperative pain were identified as additional independent predictors of acute postoperative pain.

Conclusion: Closure of the peritoneal flap after TAPP with cyanoacrylate glue instead of a suture is less painful and at least equally safe.

S2

Outcomes and Benchmarks in Pancreatic Surgery

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Background: Pancreatic surgery is complex and subject to postoperative morbidity. Various pancreatic surgery trials have sought to find interventions, which reduce postoperative complications.

Aim: The objective of this study was to summarise the outcomes and benchmarks of all existing randomised-controlled trials (RCT) on pancreatic surgery.

Methods: A systematic literature search was performed in CENTRAL, MEDLINE (via PubMed) and Web of Science for all RCTs investigating pancreatic surgery. An analysis was performed to determine which outcomes were investigated and in how many RCT. Further, a benchmark was defined for each outcome after partial pancreateoduodenectomy (PD) or distal pancreatectomy (DP) with a 99% confidence interval (CI) and statistical heterogeneity among trials (I^2). Results: A total of 355 RCT with 41,866 patients were included and analysed. Mortality after PD was investigated in 170 RCT with 19138 patients and had a pooled incidence of 1% (99%-CI 1% to 2%; $I^2 = 80%$). After

DP, mortality was investigated in 24 RCT with a total of 3011 patients and the pooled incidence was near 0% (99%-CI 0% to 1%; $I^2 = 29%$). Overall complications had a pooled incidence of 51% (99%-CI 45% to 59%; $I^2 = 92%$) after PD (64 RCT with 8500 patients) and 47% (99%-CI 35% to 65%; $I^2 = 91%$) after DP (12 RCT with 1869 patients). Postoperative pancreatic fistula occurred in 14% (99%-CI 12% to 16%; $I^2 = 89%$) after PD (109 RCT with 14124 patients) and 22% (99%-CI 17% to 28%; $I^2 = 89%$) after DP (26 RCT with 3723 patients). Further outcomes investigated were bile leak, postpancreatectomy hemorrhage, delayed gastric emptying, chyle leak, and intraabdominal fluid collection.

Conclusion: The presented data provides pancreatic surgery centres a benchmark based on high-quality trials. More RCT should report chyle leak after PD and DP. Further, outcomes need validated definitions to allow for comparability and currently such a definition is needed for intraabdominal fluid collection.

S3

Implementation of an Enhanced Recovery after Surgery (ERAS) Program in Colorectal Surgery: the benefits of late adoption

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Introduction Enhanced recovery after surgery (ERAS) protocols have shown beneficial outcomes in the last 20 years. Nevertheless, some benefits might be related to other, simultaneously implemented technical improvements such as a minimally-invasive access or modified anaesthesia care.

Methods This is a propensity score matched single-centre study comparing the short-term outcomes and cost analysis of patients undergoing elective colorectal surgery in an ERAS program from January 2021 to August 2022 to standard perioperative care from January 2019 to December 2020.

Results: 456 patients were included in the propensity score matched analysis with 228 patients per group (ERAS vs. standard care). Minimally-invasive access was used in 80.2% vs. 77.6% ($p = 0.88$) and there were 16.6% vs. 18.8% ($p = 0.92$) rectal procedures in the ERAS and standard care group, respectively. Major complications (grade 3a or higher according to Clavien-Dindo) occurred in 11.4% vs. 10.1% ($p = 0.65$) and anastomotic leakage demanding operative revision in 2.2% vs. 2.6% ($p = 0.68$) in the ERAS and standard care group, respectively. The number of non-surgical complications in ERAS compared to standard care was lower (57 vs. 79; $p = 0.02$). Mean length of stay (LOS) and mean costs per case were lower in the ERAS compared to the standard care group (9.2 ± 5.6 days vs. 12.7 ± 7.4 days; $p < 0.01$; costs $33'727 \pm 15'883$ USD vs. $40'309 \pm 29'738$ USD; $p < 0.01$).

Conclusion: Late adoption to an ERAS protocol still leads to a reduction of LOS and costs without increasing perioperative morbidity and with a lower number of non-surgical complications.

S4

Outcomes of oncologic colon surgery in primary care: consecutive cohort comparison of conventional laparoscopic vs. robotic approach

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Introduction: MIS offers measurable benefits for the patient in colon cancer without compromise in surgical radicality. Robotics is the further development of conventional MIS. In Switzerland, according to current data (Schneider 2021), only a small proportion of colon carcinomas are operated on via MIS.

Methodology and Objective: In this cohort study, we compare our consecutive outcomes of the last 53 laparoscopic (LR) (2015-2017) with the first 86 robotic (RR) (2018-2022) oncologic colon resections to determine whether robotics adds measurable value in a primary care hospital.

Results: Both groups had comparable age (n.s.), gender distribution (n.s.), BMI (n.s.), and comorbidities (n.s.). There were more ASA III patients in the robotics group ($p = 0.016$). There were more rectal carcinomas in the LR group (43%) and more right-sided carcinomas in the RR group (41%) ($p < 0.001$). There were 6% conversions in the LR group and none in the RR group. Surgical time was shorter in the LR group. The 90-day complication rate was lower in the RR group ($p = 0.023$), and the insufficiency rate was higher in the LR group (17%) than in RR group (6%) ($p = 0.032$). T and N stages and the number of lymph nodes were comparable (n.s.).

Conclusion: We significantly reduced complication and anastomotic insufficiency rates with the robotic procedure, with comparable oncologic outcome and despite more ASA III patients; the spectrum shifted to more transverse resections and right hemicolectomy/CME with RR, but fewer rectal resections (due to loss of HSM). The change to RR further improved the quality of care in our community hospital.

S5

Outcomes from Randomized Controlled Trials comparing Inpatient versus Outpatient Laparoscopic Cholecystectomy

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Background: Laparoscopic cholecystectomy (LC) is the treatment of choice for cholelithiasis and it is among the most common surgical interventions. Randomized trials have sought to determine whether this procedure can be performed on an outpatient basis. This study aimed to summarize outcomes from RCT comparing LC in an outpatient versus inpatient setting.

Methods: A scoping literature search was performed using CENTRAL, MEDLINE (via PubMed) and Web of Science for all RCT investigating LC.

Results: 8 RCT were found investigating a total of 609 patients. The discharge rate varied between 82% and 100% in the outpatient group within 4-8 hours postoperatively. The single trials reported no differences in complications, readmission and quality of life with less postoperative pain in the outpatient group. No statistical significant difference was found regarding intervention's cost.

Conclusion: The available RCT show the feasibility and safety of LC. No differences were found in terms of complications in an outpatient setting. However, outcomes have not yet been confirmed by large trials and the eligible population is unclear.

Outcomes of interest are morbidity, mortality, readmission, cost of intervention and patient satisfaction. Due to the increasing costs in the health care system, further trials are needed to perform a risk-cost-benefit analysis of outpatient LC.

S6

Characteristics of Emergency General Surgery Services in Switzerland: A Nationwide Survey

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Background: The aim of this study was to achieve an overview of the EGS service organizations in public hospitals in Switzerland.

Methods: All Swiss public hospitals with a surgical and emergency department were interviewed by telephone using a standardized questionnaire.

Results: 72 out of 79 public hospitals (91.1%) agreed to the survey. The median number of surgeons per hospital was 20.5 (IQR 13.0-29.0). Higher level of care (intermediate or intensive care unit) was significantly less available in small hospitals (<100 beds). The median hour of designated emergency operating room capacity per day was 14 hours (IQR 14-24) for all hospitals with <600 beds and 24 hours (IQR 14-24) for the largest hospitals (>600 beds). The median number of surgeons on-call per hospital and per 24 hours was 5.0 (IQR 3.3-6.0).

Conclusion: Lack of higher-level of care, limited designated emergency OR capacity and lack of continuity of EGS teams are major drawbacks of many current EGS systems in Switzerland.

S7

Utero-Ovarian "out of field" Transposition Before Pelvic Radiation in a Patient with Rectal Cancer: A First Swiss Experience

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Introduction: Fertility preservation is an essential point in the management of young women requiring pelvic radiotherapy for oncological diseases. Ovaries and oocytes are very sensitive to radiation, and current fertility preservation strategies include oocytes, embryos, or ovarian tissue cryopreservation, and ovarian transposition out of the radiation field. Nevertheless, patients have little probability of procreating due to irreversible uterine radiation damage, such as myometrial fibrosis, vascular alterations, and endometrial injuries. It is now generally accepted that age of rectal cancer diagnosis is lowering in that clinician are facing with new challenges like fertility preservation. Uterus transplantation and pregnancy surrogacy were the only alternatives until Ribeiro et al. first reported successful utero-ovarian transposition (UOT) in 2017. This surgical technique protects the uterus through its mobilization out of the radiation field, followed by its reimplantation after radiotherapy. Although successful pregnancies have been observed after UOT, this procedure has been reported less than 20 times and remains an experimental approach. Hereby, we report the first Swiss experience in performing UOT.

Case report: A 28-year-old nulligravida patient was diagnosed with a low-grade rectal adenocarcinoma (uT3N1cM0). The suggested oncological treatment consisted of neoadjuvant chemoradiotherapy, rectosigmoidectomy with total mesorectal excision, and adjuvant chemotherapy. Before starting neoadjuvant oncological therapies, the patient underwent oocytes cryopreservation, followed by a laparoscopic UOT. This technique involves mobilizing the uterus and adnexa from the pelvis, allowing their transposition to the upper abdomen to be fixed to the anterior abdominal wall. All utero-ovarian connections to the pelvis are sectioned except for the infundibulopelvic ligaments, which allow proper organ perfusion. The intervention was performed without complications, and the patient received neoadjuvant oncological treatments as planned. Six weeks after the end of radiotherapy, TaTME, and uterus repositioning were successfully completed. No complications were observed during the first 8 postoperative weeks. Adequate utero-ovarian perfusion was assessed by Doppler ultrasound, cervicovaginal anastomosis appeared healed correctly, and the patient experienced menstrual bleeding.

Conclusion: We report the first Swiss experience with UOT. This protects the uterus and ovaries from radiation, allowing the patient to sustain a pregnancy. This represents a valuable option to preserve fertility in patients requiring pelvic radiotherapy. Such possibility should be widely diffused and spread among the colorectal surgeon community as part of the therapeutic arsenal.

Video description:

1. Case presentation
2. First step surgery: laparoscopy complete uterine, broad ligament, fallopian tube and ovary dissection. Uterine artery control and hemostasis, vaginal opening and cervical dissection followed by vaginal closure. Gonadal vessel dissection with right and left colonic mobilization. Supra umbilical parietal uterine fixation.
3. Second step surgery: laparoscopy double team TaTME. Vaginal opening and trans vaginal specimen extraction. Low colorectal anastomosis (colo-sus anal). Uterine parietal liberation and cervical-vaginal anastomosis. Epiploplasty transposition.
4. Presentation closure.

S8

The BiLe Trial: a 2-year update and considerations

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Background: The Bile Trial (NCT04523701) is a randomized controlled, parallel group, double-blinded, multicentric, superiority trial, investigating the role of an intraoperative white test via the cystic duct. Primary endpoint is the rate of postoperative bile leakage within 30 days after anatomic resection of at least 2 liver segments. This abstract reports the current status of the trial in regard to sample size and drop-out rate.

Methods: On March 1st 2021 patient recruitment has been started. According to the estimated case load/centre/year, which was assessed before study begin by the 4 participating centres (KSA, EOC, KSSG and LUKS), the study duration was assumed to be 36 months, in order to achieve the target number of 210 included patients. No interim analysis has been planned.

Results: During the first 9 months of recruitment, only 45% of the anticipated patients (24/54) could be included, representing 11.5% of the total needed patients. Six of these patients (25%) were screening failures due to inoperability or impossibility to identify the cystic stump. Due to the slow recruitment the number of participating centers was enlarged on December 1st 2021. Thereafter, a total of 133 out of 210 needed patients (64%) could be included until May 2023. Again 18 out of 133 included patients were intraoperative screening failures (13.5%), resulting in 115 (55%) successfully included patients after 26 months of recruitment.

Conclusions: An accurate estimation of the case load/centre is necessary for a good calculation of study duration. Although COVID might had an impact on the inclusion rate for the study, intraoperative drop-out rate has a bigger impact on study duration than expected.

S9

Esophagectomy after previous pancreatic surgery – challenges and approaches

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Background: Esophagectomy (EE) is the mainstay of a curative cancer treatment in esophageal cancer (EC). After resection, continuity is usually restored by gastric pull-up. However, previous abdominal procedures may jeopardize the use of stomach as conduit. Currently, data on EE after pancreatic resection is sparse.

Methods: We present two cases of EE after pancreatic surgery. In the first case, a 65-year-old patient underwent left pancreatic resection 11 years prior to diagnosis with distal EC. Mesenteric angiography ruled out an injury to the gastroepiploic arcade. McKeown-EE with gastric conduit was performed. In the second case, a 61-year-old patient had previous duodenopancreatectomy 5 years prior to diagnosis of distal EC. He underwent McKeown-EE with colonic interposition with cologastrostomy.

Results: Adhesions, altered anatomy and changes in the blood supply following major abdominal surgery can complicate EE. Division of the gastroepiploic arcade, as routinely performed during pancreatic surgery, prohibits the use of stomach as a conduit. Preoperative angiography and colonoscopy are mandatory to evaluate alternative conduits. Functional aspects such as diabetes, gastroparesis or malassimilation after pancreatic surgery places patients at further risk for complications.

Conclusion: EE for EC after pancreatic surgery is challenging but feasible. Adequate patient selection and preoperative preparation are crucial to manage the difficulties associated with previous abdominal surgery.

S10

Congenital prepubic sinus (CPS): a rare case of urethral incomplete duplication with an transpubic tract in an adult woman

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Background: The congenital prepubic sinus (PCS) is a rare urinary tract abnormality in which there is an incomplete urethral duplication. It can be asymptomatic or have different clinical presentations, with pain in the pre-pubic region or the leakage of material from a chronic inflammation. The pathogenesis has not yet been identified and various embryological theories and classifications have been proposed. The diagnosis is based on clinical evaluation and imaging with ultrasound, CT, or MRI. The treatment of choice is the surgical resection, but a complete removal is not always possible.

Methods: We report the case of a CPS in a 19-year-old female with a rather rare variant of incomplete urethral duplication, with a transpubic course. Since birth the patient presented the presence of an orifice above the anterior labial commissure with a recurrent discharge. She underwent surgery by the pediatric surgeons with the removal of a 2 cm subcutaneous cyst. During the follow up the persistence of the problem was observed and an MRI highlighted the presence of CPS with a transpubic trait. The most of the lesion was surgically removed, deciding not to remove the transpubic portion, a maneuver that would have required the opening of the pubic symphysis.

Results: The indication for a surgical treatment of CPS depends on the clinical presentation and the associated symptoms. If left untreated chronic ailments and recurring infections may occur. MRI is the most useful exam for confirming the diagnosis and studying the anatomy of the lesion, an extremely important element for correctly planning the operation and minimizing the risk of urethral lesions.

Conclusions: It is important to evaluate the functional importance of the urethra and to determine the course of the sinus tract before any intervention, aware of the possible consequences of a surgical operation in that anatomical region.

S11

Anti-reflux surgery and medical therapy for the treatment of gastroesophageal reflux disease (GERD)

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Background: Gastroesophageal reflux disease (GERD) is a very common disease, compromising quality of life and affecting millions of individuals worldwide. Treatment includes a first-line drug therapy and surgery, which appear to be safe and effective. The current study aims to perform a systematic literature review comparing pharmacological management and anti-reflux surgery in adult patients with GERD.

Methods: We performed a systematic search of reviews, meta-analyses and randomized clinical trials (RCT) in PubMed and MEDLINE of the most relevant studies published between January 2002 and September 2022. Keywords related to GERD were used in combination with "medical", "surgery" and "fundoplication", as well as a filter for randomized clinical trials. The primary endpoint is the comparative efficacy of pharmacological and surgical treatment in terms of need for continuation of oral proton pump inhibitors (PPIs) or antacids, quality of life, and recurrences. The aim is to evaluate the benefits and the possible contraindications of laparoscopic fundoplication compared to pharmacological treatment for people suffering from gastroesophageal reflux disease.

Results: We included in this review studies published in the last twenty years (2002-2022). Two meta-analyses and six RCTs were selected, two of which were followed by publications on the results after 3 and 5 years of follow-up. Three studies focusing on recurrences and complications of surgery were also included, and articles focused on specific patient groups, particularly patients not responding to PPIs or patients with Barrett's esophagus.

Conclusions: Both surgical treatment and PPI therapy are good treatment options for GERD patients. The surgical fundoplication and the other surgical treatments for GERD are considered to be safe and effective. It would be useful to perform specific studies comparing laparoscopic fundoplication to pharmacological treatment alone, possibly blinded to the investigator to obtain an objective view outcomes, including patient-oriented long-term outcomes, considering treatment-related adverse events, their severity, quality of life, and their social and economic impact.

S12

Adenoma-Induced Left-sided Colic Intussusception

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Background: Intussusception is a very rare condition in adult population and an unusual cause of intestinal obstruction. Intussusception is most frequently enteric, followed by ileo-colic and colic. In contrast with intussusception in children, a leading cause is found in 90% of the cases in adult patients.

Methods: We report the case of a 67-year-old female patient with a mechanical ileus due to a left-sided colic intussusception.

Results: The patient had a one month history of intermittent abdominal pain, progressive stool irregularity with haematochezia, and an acute abdomen on the day of presentation. Computed tomography revealed an extensive intussusception of the left colon (A). Emergency laparotomy confirmed this finding (B) and a subtotal oncologic colectomy with ileosigmoidostomy was performed. The specimen showed a circumferentially growing tumour at the site of intussusception (C), histologically compatible with a sessile tubulovillous adenoma. The postoperative recovery was uneventful.

Conclusions: Colic intussusception in adults warrants a surgical oncologic resection without prior reduction, as it originates mostly from a benign or malignant tumour.



S13

Cerebral Metastases as a First Sign of Metastatic Hepatocellular Carcinoma – a Case Report and Review of the Literature

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Background: Hepatocellular carcinoma (HCC) is a primary tumour of the liver, usually developing from cirrhosis in 80-90% of cases. HCC is the 2nd most common cause of cancer linked mortality in men. Brain metastases from hepatocellular carcinoma are extremely rare occurring in 1% of patients.

We present a patient whose brain metastases lead to the diagnosis of HCC.

Methods: A 78-year-old male known for alcohol related cirrhosis (Child-Pugh A6) presented to our institution with monosyllabic dysarthria of sudden appearance. A cerebral CT-scan showed acute non-traumatic frontal left lobe bleeding caused by a neoplastic lesion, later confirmed to be a HCC metastasis.

Conclusions: Despite being rare, symptomatic, metastatic brain disease should not be ruled out as the primary manifestation of HCC.



S14

Lumen-apposing metallic stent (LAMS) in endoscopic treatment of peripancreatic necrotic collections: preliminary data from a tertiary Swiss center and review of literature

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Background: Pancreatic walled-off necrosis (WON) is a complication of acute or chronic pancreatitis whose approach is individualized: endoscopic debridement (ED) of WON should ideally be delayed 4 weeks from the onset. We report our preliminary experience of ED of WON with a fully covered LAMS.

Materials & Methods: From October 2022 to May 2023 six patients diagnosed with WON underwent endoscopic ultrasound (EUS)-guided transgastric drainage with the placement of Hot AXIOS™ System and mechanic endoscopic necrosectomy (EN) (Figure 1). In-hospital and out-of-hospital data were collected (Figures 2-3: A: before EN, B: after EN).

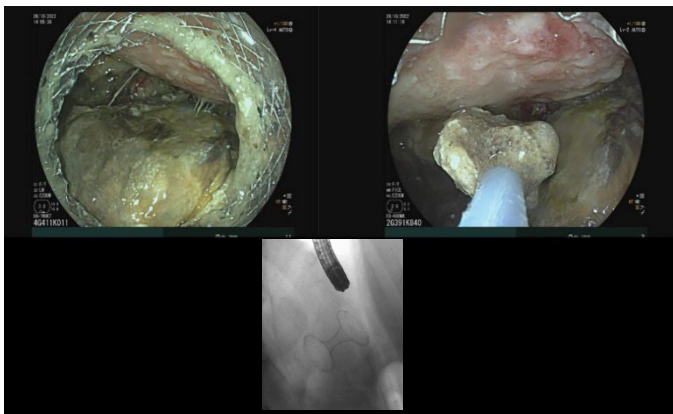


Figure 1. Endoscopic necrosectomy

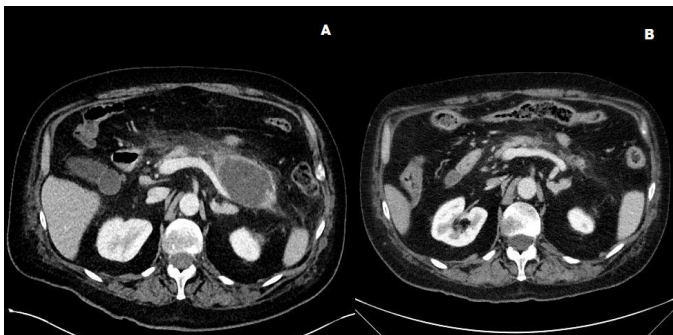


Figure 2. CT scan axial view: A: before endoscopic procedure; B: at follow-up

Results: Mean age was 60 years, mostly were men (♂ 5 ♀ 1). Etiologies were equally biliary and alcoholic. 5/6 patients presented with acute necrotic collection (ANC), while one displayed signs for acute peripancreatic fluid collection (APFC). Decision to proceed was dictated by the presence of WON plus associated complications (e.g., gastrointestinal luminal or biliary obstruction or persistent systemic inflammatory response syndrome). Technical success rate was 100%. Two patients presented AGREE grade IIIb. No stent migrations were reported, and 100% of the stents were removed easily up to 4 weeks. Follow-up is ongoing.

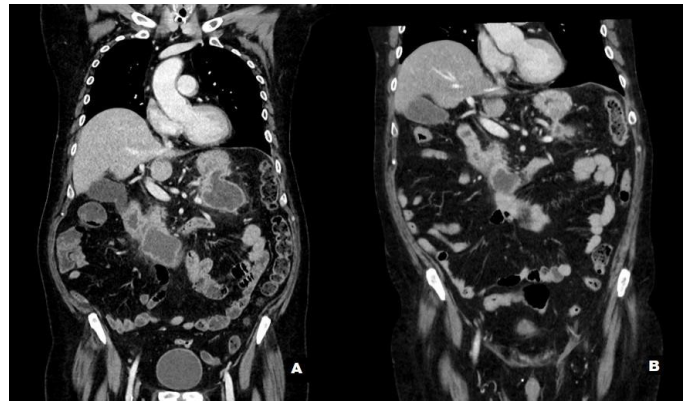


Figure 3. CT scan coronal view

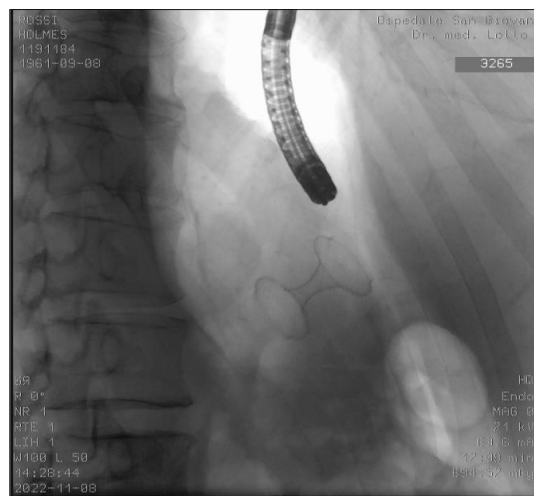


Figure 4. Hot-axios device scan

Conclusions: This procedure performed by expert endoscopist seems to be an effective, feasible and safe alternative technique. Management of such patients requires a multidisciplinary approach involving radiologists, interventional gastroenterologists and surgeons.

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