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VORTRÄGE

V01 Predicting the outcome of patients with hepatocellular carcinoma treated with immunotherapy - the CRAFITY score

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Background Immunotherapy with atezolizumab plus bevacizumab represents the new standard of care in systemic front-line treatment of hepatocellular carcinoma (HCC). Biomarkers to predict treatment success are an unmet need.

Methods Patients with HCC treated with PD-(L)1-based immunotherapy between July 2015 and May 2020 in 6 European centers (training set; n = 104) and between August 2015 and February 2020 in 7 European centers (validation set; n = 73) were included. We investigated the prognostic value of baseline variables by using a Cox regression model in the training set and developed the CRAFITY (**CR**P and **AF**P in **I**mmuno**T**herap**Y**) score. The score was validated in the independent, external cohort.

Results Baseline serum alpha-fetoprotein (AFP) ≥200 ng/ml (HR, 2.0; p = 0.009) and C-reactive protein (CRP) ≥1 mg/dl (HR, 2.0; p < = 0.016) were identified as independent negative prognostic factors in multivariable analysis and were used to develop the CRAFITY score. Patients who fulfilled none or only one criterion (0-1 point; CRAFITY-low) had a significantly longer median overall survival (21.8 (95 %CI, 13.4-30.2) months) than patients meeting both criteria (2 points; CRAFITY-high; 5.3 (95 %CI, 1.9-8.6) months; p < 0.001). Additionally, they had a significantly better disease control rate (70 % vs. 32 %; p = 0.001). These results were confirmed in the independent validation set and remained significant irrespective of Child-Pugh stage and treatment line.

Conclusions The CRAFITY score identifies patients with favorable disease control and survival. The score may help to guide treatment decisions and patient counseling.

V02 Prediction of hepatocellular carcinoma after sustained virologic response in patients with compensated advanced chronic liver disease

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Background & Aims Hepatocellular carcinoma (HCC) is a main cause of morbidity and mortality in patients with advanced chronic liver disease (ACLD) due to chronic hepatitis C (CHC) who have achieved sustained virologic response (SVR).We aimed to elaborate the optimal risk stratification algorithms for *de-novo*-HCC-development after SVR and to validate them in an independent cohort.

Methods Derivation cohort: 527 patients with pre-treatment advanced chronic liver disease (ACLD) receiving interferon (IFN)-free therapy for CHC were evaluated for *de-novo*-HCC-development post-treatment. Among other potential risk factors, non-invasive surrogates of portal hypertension including liver-stiffness measurement (LSM) and von Willebrand factor, as well as levels of alpha-fetoprotein (AFP) were assessed pre- and post-treatment. Validation cohort: 1500 patients with compensated ACLD (cACLD) from other European centers.

Results During a median follow-up (FU) of 41 months, 22/475 cACLD patients (4.6 %) developed HCC (1.45/100 patient-years) vs. 12/52 decompensated patients (23.1 %, 7.00/100 patient-years, $p < 0.001$). Since decompensated patients were at substantial HCC-risk, we focused on cACLD for all further analyses.In cACLD, post-treatment-values showed a higher accuracy for predicting HCC than pre-treatment-values or absolute/relative changes. A model based on post-treatment age ≥ 59years - 2 points, albumin < 42gxL^{-1} -1 point, LSM≥19.0kPa - 1 point, and AFP≥4.6ngxmL^{-1} - 3 points most-accurately predicted *de-novo*-HCC-risk during FU (bootstrapped Harrel's C: 0.874). Importantly, these parameters also provided independent prognostic information in competing risk analysis and accurately stratified patients into low- (0-3 points; ≈2/3 of patients) and high-risk (4-7 points; ≈1/3) groups in the derivation (HCC at 4 years: 0.5 % vs. 16.7 %) and validation cohort (3.2 % vs. 19.1 %). An alternative approach based on age/FU-albumin/FU-LSM (i.e., without FU-AFP) also showed a robust performance.

Conclusions Simple algorithms based on post-treatment age/albumin/LSM, and optionally, AFP, accurately stratified *de-novo*-HCC-risk in cACLD patients with SVR. Approximately 2/3 were identified to have an HCC-risk < 1 %/y, thereby clearly falling below the cost-effectiveness threshold for HCC-surveillance.

V03 Dietary-derived ω-3 and ω-6 polyunsaturated fatty acids induce metabolic enteritis as a fuel of Crohn's disease

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Introduction The incidence of Crohn's disease (CD) has increased drastically in recent years, which is mainly explained by environmental factors and changes in our diet. A Western-style diet, characterized by increased consumption of sugars and fats such as polyunsaturated fatty acids (PUFAs), triggers inflammation in metabolically active tissues, termed metabolic inflammation However, a non-toxic dietary component driving gut inflammation hasn't been identified yet. Here, we demonstrate how ω-3 and ω-6 PUFAs fuel intestinal inflammation and assessed the implication of PUFA-consumption on human CD.

Methods An intestinal epithelial cell (IEC) line (termed MODE-K) was used for *in vitro* experiments. *Gpx4*$^{+/-IEC}$, *Xbp1*$^{-/-IEC}$ and *Ern1*$^{-/-IEC}$/*Gpx4*$^{+/-IEC}$ (IRE1α-knockout) mice were fed a Western diet enriched with ω-3 and ω-6 PUFAs for three months. In a CD cohort comprising 160 patients the relation between PUFA-intake (estimated by a dietary questionnaire) and the clinical disease course over an observation period of ~5 years was assessed.

Results ω-3 and ω-6 PUFAs trigger chemokine production in IECs and drive intestinal inflammation in mice, which is limited by the anti-oxidative enzyme Glutathione peroxidase 4 (GPX4) and X-box binding protein 1 (XBP1). PUFAs are incorporated into cellular membranes at the endoplasmic reticulum (ER), where they are targeted for oxidation. This causes ER stress and induction of the unfolded protein response (UPR) in IECs, which is similarly observed in PUFA-induced enteritis. Activation of the UPR and specifically IRE1α drives enteritis dependent on JNK-signalling. In CD, ~50 % of patients display a serum signature comprising lipid peroxidation, ER stress and chemokines. Furthermore, dietary PUFA-intake correlates with longitudinal disease activity and severity.

Conclusions We demonstrate how PUFAs fuel gut inflammation mimicking metabolic inflammation by analysing IECs, transgenic mice, and a CD patient cohort. As such, we identify a non-toxic dietary constituent as driver of inflammation in human CD, providing a basis for targeted nutritional therapy.

POSTER

CED

P01 Ustekinumab bei Colitis ulcerosa - Real-world experience

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Einleitung Ustekinumab (UST) bei Colitis ulcerosa (CU) ist eine neuartige und sichere Therapieoption. UST ist ein monoklonaler humaner Antikörper

mit Bindung an die p40-Untereinheit von IL12 und IL23 mit Hemmung der Überproliferation von naiven T-Zellen in Th1- und Th17-Zellen.

Methoden Wir präsentieren eine retrospektive Datenanalyse von 26 mit UST behandelten PatientInnen mit CU von Februar 2019 bis April 2021. Ziel dieser Arbeit ist die Beschreibung der Patientencharakteristika. Die Krankheitsaktivität wurde anhand des Mayo-Subscores (0-9 Punkte) analysiert und der endoskopischen Mayo-Scores (1-3 Punkte) vor Therapiebeginn erhoben. Ein Mittelwert von zwei fäkalen Calprotectinmessungen vor (median 7 Wochen) sowie nach (median 11 Wochen) Therapiebeginn wurde bei 14 PatientInnen verglichen.

Resultate Zur Remissionsinduktion wurden durchschnittlich 5,7 mg UST pro Kilogramm Körpergewicht verabreicht. Die mittlere Krankheitsdauer bis zum Therapiebeginn betrug 7,8 Jahre, das mediane Patientenalter 27 Jahre. 30,7 % unserer PatientInnen waren weiblich. In der Erhaltungsphase wurde eine Intervallverkürzung auf 6 beziehungsweise 4 Wochen bei 30,8 bzw. 23,1 % durchgeführt. Von unseren PatientInnen waren 69 % mit einem, 19 % mit zwei und 8 % mit drei TNF-α-Blocker sowie 65,4 % mit Vedolizumab vorbehandelt. 26,9 % hatten einen steroidabhängigen Verlauf. Vor Therapiebeginn zeigte sich ein medianer endoskopischer Mayo-Subscore von 3 Punkten (n= 20). 11 Wochen (IQR = 7) nach Therapiebeginn konnte ein Rückgang der fäkalen Calprotectinwerte um durchschnittlich 58,4 % (n= 14) beobachtet werden. Ein Rückgang von ≥ 3 Punkte im klinischen Subscore konnte bei 76,5 % (UNIFI = 61,8 % nach 8 Wochen) erzielt werden.

Das in der Zulassungsstudie beschriebene Sicherheitsprofil können wir in unserer Kohorte bestätigen, es kam zu keinem Therapieabbruch aufgrund von Nebenwirkungen. Bei einem Patienten wurde die Therapie aufgrund einer Kolektomie bei Kolorektalkarzinom beendet. Bei einem Patienten kam es zu einer kolonischen CMV-Reaktivierung.

Diskussion Im Vergleich zur Zulassungsstudie hatten unsere PatientInnen bei ähnlicher Erkrankungsdauer deutlich häufiger Biologicals als Vortherapien erhalten. Ein Therapieansprechen konnte nachgewiesen werden.

P02 Polyunsaturated fatty acids in a Western diet trigger TLR2-dependent Crohn's-like enteritis in mice

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Introduction Westernisation of diet is suspected to contribute to a rising incidence of inflammatory bowel diseases across the globe, while specific macronutrients that would trigger gut inflammation remain largely elusive. We recently demonstrated that Crohn's disease (CD) patients exhibit impaired activity of the antioxidative enzyme glutathione peroxidase 4 (GPX4) specifically in intestinal epithelial cells. Mice lacking one allele of *Gpx4* in the intestinal epithelium develop a Crohn's-like enteritis after dietary challenge with a Western diet enriched with polyunsaturated fatty acids (PUFA). Here, we illustrate how PUFAs evoke gut inflammation in the context of impaired epithelial GPX4 activity.

Methods We studied immortalized intestinal epithelial cells (IECs), namely MODE-K IECs, with reduced *Gpx4* expression or genetically impaired enzymatic GPX4 activity. To translate the identified mechanism to mice, we generated double mutant mice that lack one allele of *Gpx4* in IECs and both alleles of toll-like receptor 2 and exposed these mice (and respective controls) to a PUFA-enriched Western diet for 3 months. Gut inflammation was analysed biochemically and histologically.

Results GPX4 enzymatic activity restricts PUFA-induced lipid peroxidation and accumulation of oxygen specific epitopes (i.e. stress related by-products). Lipid peroxidation and oxygen specific epitopes triggered toll-like receptor 2 activation and downstream MAPK signalling, which drives the production of chemokines in GPX4-deficient IECs upon ω-3 and ω-6 PUFA exposure. Likewise, TLR2 co-deletion in $Gpx4^{+/-IECs}$ mice protected against Crohn's-like gut inflammation evoked by a PUFA-enriched Western diet, similar to pharmacologic inhibition of MAPK signalling or blockade of the IL-8 pathway.

Conclusion We identify a mechanism of PUFA-induced gut inflammation in mammals, highlighting a pivotal role for GPX4-restricted lipid peroxidation as driver of TLR2 activity in intestinal epithelial cells. Our findings may set the basis for targeted nutritional therapy in CD.

P03 Initial Clearance of Infliximab is a predictor for long-time mucosal healing and biomarker response

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Background Anti-tumor necrosis factor (TNF) alpha therapy poses a mainstay in the treatment of patients with Inflammatory Bowel Disease (IBD). Nevertheless, the pharmacokinetic of Infliximab (IFX) has a high inter- and intra-variability, which can result in loss of response. One possible cause of failure is high initial clearance consequently triggering anti-drug antibody (ADA) formation or result in IFX underexposure. Here, we are exploring initial clearance of IFX as predictor of maintenance outcome in patients with Crohn's disease (CD).

Methods We developed a population pharmacokinetic model using data from a Phase 3 clinical trial of biosimilar CT-P13 and originator infliximab comparing efficacy and safety in moderately to severely active CD (CDAI of 220–450). Data from 220 patients with 1607 IFX serum concentrations were modeled. The model was qualified and the first estimated clearance for each patient was subsequently merged with patients' baseline data together with selected endpoints. The data were fit as binary logistic regression analyses. Probability of outcome at week 54 versus predictors of interest (initial IFX clearance, age, IFX dose, disease duration, sex), along with 80 % confidence intervals (CI) were generated.

Results Initial IFX clearance was the only predictor for mucosal healing (SES-CD ≤2; p = 0.00070) at week 54. Initial IFX clearance as well as disease duration and age also predicted serum CRP within normal range at (< 10 mg/L) at that visit. For clinical remission defined by CDAI < 150 no predictors were identified. Initial clearance was predictive of the development of ADAs at any time.

Conclusion Initial IFX clearance is the only independent predictor of maintenance mucosal healing and biomarker response, but not for clinical remission. Pro-active management of early rapid elimination of biologics might pose an opportunity of long-term inhibition of objective disease activity.

P04 Initial Clearance of Infliximab is a predictor for the time of formation of anti-drug antibodies.

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Background Treating patients with biologics like infliximab (IFX), may cause the formation of antidrug antibodies (ADA). ADA are associated with faster drug clearance, reduced treatment efficacy and increased risk of infusion-related side effects. The aim of this study is to identify possible predictors for ADA-formation.

Methods A time to first detection of ADA model was developed by using data from a Phase 3 clinical trial of biosimilar CT-P13 and originator infliximab comparing efficacy and safety in moderately to severely active Crohn's disease (CD). We analyzed data from 220 patients initiating IFX. Seven subjects with ADA present at baseline were discarded. The following baseline covariates were evaluated in this analysis: age, weight, first estimated drug clearance, disease duration, dose, sex and concomitant immune-modulators. The data was then modeled parametrically with NONMEM. Hazard ratios and probability of ADA at time points of interest were calculated for significant covariates.

Results Initial IFX clearance, concomitant immunomodulators and IFX dose were identified as being statistically significant predictors of the time to first ADA. The model suggested that the hazard of ADA increases by 61 % for every increase on 0.1 L/day in clearance, it decreases by 41 % with concomitant administration of immunomodulators and decreases by 29 % for every increase in dose of 100 mg. Thus, for a patient with initial IFX clearance of 0.2 L/day, no immunomodulators and a dose of 328 mg the average time to first ADA is 374 days (range 221-451).

Conclusion We have identified initial infliximab clearance as an independent predictor for onset of ADA in CD patients. Our results suggest that early assessment of clearance should guide treatment optimization with IFX in patients with CD, including the addition of concomitant immunosuppressants or increasing the dose during induction.

P05 Efficacy and Safety of Filgotinib as Induction Therapy for Patients with Moderately to Severely Active Ulcerative Colitis: Results from the Phase 2b/3 SELECTION Study

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▶**Tab. 1** Efficacy summary for Cohort A and Cohort B

	Cohort A Induction Study (Biologic naïve)				Cohort B Induction Study (Biologic experienced)			
	PBO (n = 137)	FIL 100mg (n = 277)	FIL 200mg (n = 245)	Δ% FIL 200mg vs PBO (95 % CI); p value	PBO (n = 142)	FIL 100mg (n = 285)	FIL 200mg (n = 262)	Δ% FIL 200mg vs PBO (95 % CI); p value
EBS remission, n (%)	21 (15.3)	53 (19.1)	64 (26.1)	10.8(2.1, 19.5); p = 0.0157	6 (4.2)	27 (9.5)	30 (11.5)	7.2 (1.6, 12.8), p = 0.0103
MCS remission, n (%)	17 (12.4)	47 (17.0)	60 (24.5)	12.1 (3.8, 20.4); p = 0.0053	6 (4.2)	17 (6.0)	25 (9.5)	5.3 (−0.1, 10.7); p = 0.0393
Endoscopic remission, n (%)	5 (3.6)	16 (5.8)	30 (12.2)	8.6 (2.9, 14.3); p = 0.0047	3 (2.1)	6 (2.1)	9 (3.4)	1.3 (−2.5, 5.1); p = 0.4269
Geboes histologic remission, n (%)	22 (16.1)	66 (23.8)	86 (35.1)	19.0 (9.9, 28.2); p < 0.0001	12 (8.5)	39 (13.7)	52 (19.8)	11.4 (4.2, 18.6); p = 0.0019

EBS remission=endoscopic subscore ≤1, rectal bleeding subscore=0, and ≥1-pt decrease in stool frequency subscore from baseline and stool frequency subscore ≤1; MCS remission = MCS ≤2 and no single subscore > 1; Endoscopic remission=Mayo endoscopic subscore=0; Geboes histologic remission=Grade 0 of ≤0.3, Grade 1 of ≤1.1, Grade 2a of ≤ 2A.3, Grade 2b of 2B.0, Grade 3 of 3.0, Grade 4 of 4.0, and Grade 5 of 5.0.CI, confidence interval; EBS, endoscopy/bleeding/stool; FIL, filgotinib; MCS, Mayo Clinic Score; PBO, placebo

Introduction Filgotinib (FIL) is a Janus kinase 1 inhibitor being investigated for ulcerative colitis (UC).

Aims and Methods The SELECTION (NCT02914522) Induction Studies evaluated efficacy and safety of FIL as induction therapy for patients with moderately-severely active UC (CohortA: biologic-naïve, but failed conventional therapy; CohortB: biologic-experienced). Both studies randomized patients 2:2:1 to oncedaily FIL 200mg/FIL 100mg/placebo(PBO). The primary endpoint for both studies was endoscopic/rectal-bleeding/stool-frequency (EBS) remission at Wk10 (definition see ▶**Table**). Key secondary endpoints included Mayo Clinic Score(MCS) remission, endoscopic remission (ES=0), and Geboes histologic remission at Wk10.

Results Baseline demographics, UC disease characteristics and concomitant medications were generally similar across treatment groups and cohorts. CohortA (n = 659) baseline: mean MCS=8.6, 56 % severe endoscopic disease (ES=3). 625(95 %) completed treatment; most common reason for treatment discontinuation was an adverse event (AE). A significantly higher proportion of patients treated with FIL 200mg vs PBO achieved EBS-remission and all key secondary endpoints. CohortB (n = 689) baseline: mean MCS=9.3, 78 % had ES=3. Prior anti-TNF-failure: ≈86 %; prior vedolizumab-failure: 52 %; 43 % had failed both. 635 (92 %) completed treatment; most common reason for treatment discontinuation was an AE. A significantly higher proportion of patients receiving FIL 200mg vs PBO achieved EBS-remission (▶**Table**).Incidence of AEs, serious AEs and discontinuations due to AEs were similar across FIL and PBO. In PBO, FIL 100mg and FIL 200mg groups, serious infection occurred in 0.7 %, 0.7 % and 0.4 % of patients in CohortA, and 1.4 %, 1.4 % and 0.8 % in CohortB. Herpes zoster infection occurred in 0 %, 0 % and 0.8 % of patients in CohortA, and 0 %, 0.4 % and 0.4 % in CohortB.

Conclusions The SELECTION study population included a high proportion of dual-refractory patients, and patients with severe endoscopic disease. Both doses of FIL were well tolerated. FIL 200mg was effective as induction treatment for both biologic-naïve and biologic-experienced patients with moderately to severely active UC.

P06 Efficacy and Safety of Filgotinib as Maintenance Therapy for Patients with Moderately to Severely Active Ulcerative Colitis: Results from the Phase 2b/3 SELECTION Study

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▶**Tab. 1** SELECTION Maintenance Study Summary of Efficacy and Safety

Induction Treatment	**FIL 200mg**		**FIL 100mg**		
Maintenance Treatment	**PBO**	**FIL 200mg**	**PBO**	**FIL 100mg**	
EBS remission, n/N (%)	11/98 (11.2)	74/199 (37.2)*	12/89 (13.5)	41/172 (23.8)†	
6-month corticosteroid-free -clinical remission, n/N (%)	3/47 (6.4)	25/92 (27.2)*	2/37 (5.4)	11/81 (13.6)	
Sustained clinical remission, n/N (%)	5/98 (5.1)	36/199 (18.1)*	7/89 (7.9)	15/172 (8.7)	
MCS remission, n/N (%)	9/98 (9.2)	69/199 (34.7)*	12/89 (13.5)	39/172 (22.7)	
Endoscopic remission, n/N (%)	6/98 (6.1)	31/199 (15.6)*	7/89 (7.9)	23/172 (13.4)	
Geboes histologic remission, n/N (%)	13/98 (13.3)	76/199 (38.2)*	16/89 (18.0)	48/172 (27.9)	
Induction Treatment	**PBO**	**FIL 200mg**		**FIL 100mg**	
Maintenance Treatment	**PBO (n = 93)**	**PBO (n = 99)**	**FIL 200mg (n = 202)**	**PBO(n = 91)**	**FIL 100mg (n = 179)**
AE, n (%)	57 (61.3)	59 (59.6)	135 (66.8)	60 (65.9)	108 (60.3)
Discontinued due to AE, n (%)	3 (3.2)	2 (2.0)	7 (3.5)	4 (4.4)	10 (5.6)
Serious AE, n (%)	4 (4.3)	0	9 (4.5)	7 (7.7)	8 (4.5)
Death, n (%)	0	0	2 (1.0)	0	0
Infections, n (%)	21 (22.6)	25 (25.3)	71 (35.1)	27 (29.7)	46 (25.7)
Serious infections, n (%)	1 (1.1)	0	2 (1.0)	2 (2.2)	3 (1.7)
Herpes zoster, n (%)	0	0	1 (0.5)	1 (1.1)	0
Any venous thrombosis, n (%)	2 (2.2)	0	0	0	0
Any arterial thrombosis, n (%)	0	0	0	0	1 (0.6)

* p < 0.025, †p < 0.05 FIL dose arm vs PBOEBS remission=ES of 0 or 1, rectal bleeding subscore of 0, and ≥1-point decrease in SFS from baseline to achieve a SFS of 0 or 1; 6-month corticosteroid-free EBS remission =EBS remission with no corticosteroid use for the indication of UC for ≥6 months prior to Wk58 among patients who were on corticosteroids at baseline of maintenance study; Sustained EBS remission=EBS remission at both Wk10 and Wk58; MCS remission=MCS of ≤2 and no single subscore > 1; Endoscopic remission=ES of 0. Geboes histologic remission= Grade 0 of ≤0.3, Grade 1 of ≤1.1, Grade 2a of ≤2A.3, Grade 2b of 2B.0, Grade 3 of 3.0, Grade 4 of 4.0, and Grade 5 of 5.0.AE, adverse event; FIL, filgotinib; MCS, Mayo Clinic Score; PBO, placebo

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Introduction Filgotinib (FIL) is a Janus kinase 1 inhibitor being investigated for ulcerative colitis (UC).

Aims and Methods The SELECTION (NCT02914522) Maintenance-Study was a double-blind, randomized trial of FIL as maintenance therapy for patients with moderately to severely active UC who achieved clinical remission or Mayo Clinic Score (MCS) response after 10 weeks induction with FIL 200mg, FIL 100mg or placebo (PBO). Patients randomized to FIL induction were rerandomized 2:1 to their induction FIL dose or PBO. Patients randomized to induction PBO continued PBO maintenance. Steroid tapering was mandatory. Primary endpoint was endoscopic/rectal-bleeding/stool-frequency (EBS) remission (definition in ▶**Table**) at Wk58. Key secondary endpoints included 6-month corticosteroid-free clinical remission, sustained clinical remission, MCS remission, endoscopic remission and Geboes histologic remission at Wk58.

Results A total of 664 patients were enrolled and treated (n = 93 PBO, n = 270 FIL 100mg, and n = 301 FIL 200mg; efficacy analyses included only patients who received FIL during induction (n = 558). Baseline demographics were generally balanced across treatment arms; ≈40 % of patients were biologic-experienced.A significantly higher proportion of patients on FIL 200mg or FIL 100mg achieved EBS remission vs PBO. Significantly higher proportions of patients achieved key secondary endpoints with FIL 200mg vs PBO.Incidences of adverse events (AEs), serious AEs and discontinuations due to AEs were similar across treatment arms. Serious infection and herpes zoster infection were infrequent. No opportunistic infections occurred. No venous thromboses, including pulmonary embolism, occurred among FIL-treated patients. Two patients on FIL 200mg died (1 asthma exacerbation, 1 left ventricular failure), both considered unrelated to FIL.

Conclusions FIL 200mg and 100mg were effective as maintenance treatment and well tolerated for patients with moderately to severely active UC who had achieved clinical response to induction treatment with FIL. FIL 200 mg met all key secondary endpoints including endoscopic, histologic and 6-month corticosteroid-free remission.

P07 Potential of managed care programmes for patients with inflammatory bowel diseases - results from a large survey study among physicians and IBD-patients in Germany, Austria and Switzerland (the $EASE_{IBD}$study)

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Introduction IBD-care benefits from a multidisciplinary, cross-sectoral treatment approach and active patient involvement. However, occasionally a lack of patients´ empowerment and additionally, a necessity for the optimisation of physicians´ treatment is apparent. Furthermore, the evidence regarding the effectiveness of structured care approaches (“managed care”) on patient-related outcomes is limited. Therefore, our study aims to evaluate the potential of managed care programmes for IBD patients.

Methods $EASE_{IBD}$ is a cross-border study conducted by IBD-DACH, an IBD working group in Germany (D), Austria (A) and Switzerland (Ch). Within the DACH-region, a cross-sectional survey of patients and physicians from IBD hospital-outpatient departments and gastroenterology practices was carried out. The questionnaire evaluated the effect of instruments and contextual factors of IBD-care with regard to quality of life (QoL). Additionally, the effects of “managed care” instruments were examined. The analysis was performed using a multivariate multilevel regression model, controlled by various physician and patient characteristics.

Results 2536 IBD-patients from 66 centres (643 IBD-patients/quarter; 31 % hospital out-patient departments) were consecutively enrolled in $EASE_{IBD}$ (centres/IBD-pat.: D-52/1735; A-10/647; Ch-4/154). Overall, patient satisfaction (77-84 %) as well as perceived quality of care (82-87 %) was high and comparable in the descriptive analysis between German, Austrian and Swiss IBD-patients. Significant differences were only found in single characteristics, e.g. in quality of life (EQ5D-VAS; 47-64) (p = 0.004). In the entire DACH-region detectable effects of elements representing structural quality and assessments of the centres, with regard to the perceived quality of patient care, were, especially, a positive influence of web-based instruments (e.g. homepage) (p = 0.040) and potential use of homecare calprotectin (0.046).

Conclusion Our study shows that managed care programmes resulted in a high process quality, which is evident from the reported high patient satisfaction and quality of care by IBD-patients in the entire DACH region, and qualifies this area as a suitable common study landscape.

P08 Impact of skin examination prior to initiation of treatment with biologics in Inflammatory Bowel Disease patients: preliminary data

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Background Mucocutaneous findings are common in patients with Crohn's disease (CD) and ulcerative colitis (UC). Adverse skin reactions induced by anti-inflammatory treatment schedules for inflammatory bowel disease (IBD) add to the overall increased risk of skin reactions. We aimed to determine if a skin investigation prior to initiation of biologics in IBD patients will detect relevant skin diseases and change further patient management.

Methods This is an ongoing multicenter cohort study performed in 4 tertiary IBD centers and dermatological departments. IBD patients requiring biological treatment underwent a dermatological screening prior to initiation of biologics. All pathological findings, as well as IBD-specific data, were recorded. A descriptive analysis was performed.

Results 502 patients (50 % female) with a median disease duration (IQR) of 6.9 (2, 15) years were eligible for inclusion. 364 patients (72.5 %) had CD, 125 (24.9 %) UC and 13 (2.6 %) inflammatory bowel disease unclassified (IBDU). Median age (IQR) was 37 (29, 49) years. 330 (65.7 %) patients had previously received any kind of immunosuppressive therapy, 168 (33.5 %) patients had a prior biological therapy. Melanoma was diagnosed in 5 patients (1.0 %), 4 cases were staged as T1a, one was a Tis. Non-melanoma skin cancers were detected in 24 patients (4.8 %). IBD associated skin diseases, such as pyoderma gangrenosum, hidradenitis suppurativa and erythema nodosum were present in 5 (1.0 %), 16 (3.2 %) and 3 (0.6 %) patients, respectively. Viral warts were found in 77 patients (15.3 %). All patients received appropriate treatment. Melanoma patients were successfully treated by excision and are currently in remission without requiring adjuvant treatment.

Conclusion A dermatological screening before initiation of biologicals is helpful in identifying patients with skin cancer and other high-impact dermatological diseases and should therefore be part of the pre-treatment screening program.

P09 Safety and efficacy of the mRNA-1273 SARS-CoV-2 vaccine in a cohort of patients with inflammatory bowel disease

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Background The Covid-19 pandemic has evolved a global burden that catalyzed the rapid development of new mRNA vaccines. In general population studies show that the effectiveness of the mRNA-1273 SARS-CoV-2 vaccine is 94,1 %. There is insufficient data about the SARS-CoV-2 mRNA-1273 vaccine in patients with inflammatory bowel disease (IBD) with and without immunosuppressive therapy.

Methods In this single-center prospective cohort-analysis we investigate the immune response to the mRNA-1273 SARS-CoV-2 vaccine in a cohort of patients with IBD with or without immunomodulatory therapy. Patients received two vaccinations that were organized in house at our clinic at baseline and day 28. We obtained blood samples at baseline, day 28 and day 56. The vaccination offer was received very well by our patients. We measured antibody levels against the surface spike protein and the nucleocapsid of SARS-CoV-2. Furthermore we performed interferon-gamma-release-assays for the spike and nucleocapsid proteins and a virus-neutralisation test. Side effects were observed on day 28 and day 56 with the questionnaire of the Austrian ministry of health.

Results In total, we included 64 patients from the Kepler University hospital in our study, 36 patients with IBD and 28 healthy controls. Regarding the immunomodulatory treatment, the cohorts comprised 8 patients on adalimumab, 9 on infliximab, 6 on vedolizumab, 6 on ustekinumab and 7 on mesalazine therapy. To this point we just have preliminary data of the blood samples at baseline and day 28. The increase of antibody levels was significant in all cohorts with no significant difference throughout the cohorts. Moderate side effects like fever or muscle pain were observed equally in our cohorts. No severe side effect occurred.

Conclusion The mRNA-1273 SARS-CoV-2 vaccine seems to be safe and effective in patients with IBD and immunomodulatory treatment regimens but there is a need for more high-quality data on this topic.

P10 Corticosteroid therapy of flares in ulcerative colitis is less effective in patients with prior biologic therapy

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Background and aims Corticosteroids are still widely used to treat flares of ulcerative colitis (UC) but steroid-refractory UC has been reported in 24-33 % of patients in historic cohorts. This study aimed to assess factors influencing efficacy of corticosteroid therapy for active UC in the biologic era.

Methods Investigator-initiated, prospective, multi-center study of the Austrian IBD study group. Patients with UC were eligible if suffering from an acute flare (Lichtiger score ≥4) and scheduled for treatment with systemic corticosteroids. Patient characteristics and Lichtiger score were assessed at baseline and after 28 days. Clinical response was defined as decrease of Lichtiger score ≥ 50 % from baseline, clinical remission as Lichtiger score ≤ 3. Statistical analyses were done using Mann-Whitney U or Chi-square tests as appropriate.

Results 98 UC patients (46 % females) were included in the analysis. Median (IQR) age was 44 (31, 57) years, 18 % of patients have been previously treated with biologics, 18 % with immunomodulators and 15 % had ongoing therapy with biologics at study inclusion. 11 % suffered from proctitis, 42 % from left-sided colitis, 47 % from pancolitis. Lichtiger Score at baseline was 11 (9, 13), 66 % had severe UC according to a Lichtiger score ≥10. The median initial steroid dose was 50 (40, 50) mg prednisolone. Therapy with corticosteroids led to a significant drop of the Lichtiger Score to 3 (1, 5) ($p < 0.001$) at day 28. 56 % of UC patients experienced remission, 18 % responded without remission and 26 % had no response to steroid therapy. Patients with prior, but not with ongoing, biologic therapy had higher rates of non-response to corticosteroids than biologic naïve patients (60 % vs. 19 %, $p = 0.001$).

Conclusion Corticosteroids induce clinical remission in more than 50 % of patients with active UC. Biologic experienced patients have higher rates of treatment failure to corticosteroids.

P11 A risk variant within the 'interferon induced with helicase C domain 1' (IFIH1) gene render epithelial cells susceptible for microbial stimuli

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Background Variants in the gene for IFIH1 have been associated with an increased risk for both Crohn's disease (CD) and ulcerative colitis (UC). IFIH1 represents a member of the RIG-I-like-receptor family capable of recognizing intracellular viral and bacterial double-stranded RNAs. Thus, we hypothesized that IFIH1 may be involved in microbe-host interaction particularly in intestinal epithelial cells (IEC), the major cell type of the intestinal mucosal border.

Methods Mucosal biopsy samples were collected from patients with CD, UC and healthy controls and stained immunohistochemically for IFIH1. Mucosal expression of IFIH1 was quantified by qPCR. For functional experiments Caco2 cells were silenced for IFHI1 (and/or RIG-I) and features of epithelial cell biology were determined after stimulation with *Salmonella enterica serovar typhimurium* and synthetic RNAs. Finally, colonic organoids were derived from healthy biopsy samples obtained from patients expressing different IFIH1 variants, namely wt/wt, wt/mut, and mut/mut.

Results Our data highlight strong IFIH1 expression in IECs in CD and UC. However, mRNA expression revealed a wide distribution within all studied groups, namely healthy controls, UC and CD patients from involved and non-involved mucosal sites. In cell culture experiments we found that IFIH1-silenced Caco2 cells are hardly responsive to major microbial stimuli both in terms of cytokine expression and induction of autophagosomes. Strikingly, by developing human organoid models from patients wildtype, heterozygous, or homozygous for the IFIH1 risk locus, we were able to reproduce and verify major mechanistic aspects.

Conclusion Herein, we provide a mechanistic explanation of how the human IBD risk variant in the IFIH1 gene links to an increased risk for the development of inflammation in IBD.

P12 Antibody response to bnt162b2 mRNA vaccine in patients with IBD or chronic liver disease

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Background Patients with inflammatory bowel disease (IBD) or chronic liver disease (CLD) on immunosuppressive therapy show poor response to different vaccinations, and were not included in registrational trials for BNT162b2. The aim of our study was to evaluate serologic antibody response and safety of BNT162b2 mRNA vaccine in patients with IBD or CLD on immunosuppressive therapy.

Methods By this retrospective data analysis, serological antibody response and adverse events were assessed in patients with IBD or CLD vaccinated with two 30µg doses of BNT162b2 administered 21 days apart. Serological antibody response was assessed by ELECSYS® Anti-SARS-CoV-2-S immunoassay before vaccination (T0), 21 days after first (T1), and 21 days after full immunization (T2). Standardized safety questionnaire was used for safety assessment.

Results A total of 84 patients were included in the data analysis, including 67 patients with IBD and 17 patients with CLD. After the 2nd vaccination, seroconversion of the SARS-CoV-2 antibodies to S/RBD was seen in all (100 %) included patients. Strikingly, we could show that patients with Crohn's disease had lower antibody titer in comparison to the other subgroups ($p = 0.02$), furthermore higher mean antibody titers at T1/T2 were seen in patients seropositive at baseline ($p < 0.001$). Vaccinations were well tolerated overall, with a total of 6 events of grade 4 adverse reaction, but no grade 5 adverse reaction. Side effects after the 2nd vaccination were more frequent under ongoing therapy with TNF blockers ($p = 0.026$) and in patients under 50 years ($p = 0.012$).

Conclusion In patients with IBD and CLD serologic antibody response after BNT162b2-vaccination is comparable to the general population. The occurrence of side effects, is more common in patients on TNF blocker therapy and in younger patients, yet BNT162b2 is safe to use in this patient population under real world condition.

Chirurgie

P13 IL-37 - a regulation relevant cytokine in liver regeneration?

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Background Despite numerous advances in liver surgery one of the limiting factors is the functional capacity of the future-liver-remnant. Enhancing the regenerative capacity is crucial for expanding indications for hepatic resections (HR). This could either be done by augmentation, but new advances in optimizing the liver for eg. extended resections could be of high interest. Interleukin-37 (IL-37) is widely expressed in the liver, exerts anti-inflammatory effects in hepatic diseases and reduces liver injury induced by ischemia-reperfusion-injury. However, the impact of IL-37 on liver regeneration (LR) is unknown. Endpoints consisted of: i) defining the role of IL-37 in the regulation of LR following liver resection; ii) elucidating the mechanistic context of IL-37 and LR by using a model of 2/3 partial hepatectomy (PH); iii) characterizing the metabolic profile of murine LR and identifying IL-37 as regeneration relevant cytokine that regulates LR via metabolic pathways.

Methods Serum levels of IL-37 were assessed in 52 patients undergoing HR. Evaluation of LR after PH in transgenic (*IL-37tg*) mice and wild-type (WT) controls. Serum samples of both genotypes were analyzed in a targeted metabolomic approach covering 630 different compounds.

Results An upregulation of IL-37 was noticed during hepatic resection and especially in major resections and primary liver tumours. In mice, IL-37 increased cell proliferation during LR 48 hours post PH (BrdU, PCNA, liver-to-body-weight-ratio). Interestingly, only 5 significant regulating metabolites were identified, either dependent on genotype and time and/or the interaction of these two factors. These were namely 5-AVA, alpha-AAA, phenylalanine and the sum of indoles.

Conclusion IL-37 is a regulation relevant cytokine in the liver by using a metabolomic pathway (eg. production of 5-AVA). This is an interesting finding which should be worked up and may be implemented in clinical studies.

P14 Assoziation der Adenomentdeckungsrate und Charakteristika abgetragener Adenome mit der Mortalität des kolorektalen Karzinoms nach einer Vordorgekoloskopie

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Hintergrund Die Adenomentdeckungsrate (ADR) und die Charakteristika abgetragener Adenome sind mit der Inzidenz und Mortalität des kolorektalen Karzinoms (KRK) assoziiert. Der kombinierte Effekt dieser beiden Faktoren wurde jedoch bisher nicht untersucht.

Methoden Der kombinierte Effekt von ADR und Charakteristika abgetragener Adenome auf das Risiko an einem KRK zu versterben wurde anhand von Vorsorgekoloskopien, die in Österreich im Rahmen des‚Qualitätszertifikat Darmkrebsvorsorge" durchgeführt wurden, analysiert. Wir verglichen Mortalitätsraten von Personen mit Niedrig-Risiko Adenomen (1-2 Adenome < 10 mm), Personen mit Hoch-Risiko Adenomen (fortgeschrittenen Adenome, oder ≥3 Adenome), und Personen mit negativer Koloskopie, die von einem Endoskopiker mit einer ADR < 25 % untersucht wurden mit Mortalitätsraten von Personen, die von einem Endoskopiker mit einer ADR ≥ 25 % untersucht wurden. Die Assoziation dieser kombinierten Risikogruppen mit der Mortalität an einem KRK wurde alters,- und geschlechtsadjustiert mittels Cox-Regressionsanalysen berechnet.

Ergebnisse Insgesamt wurden 259.885 Koloskopien, die von 361 Endoskopikern durchgeführt wurden, eingeschlossen. In einem Beobachtungszeitraum von 12, 2 Jahren wurden 165 KRK assoziierte Todesfälle beobachtet. Die Wahrscheinlichkeit an einem KRK zu versterben war in allen Risikogruppen höher, wenn die Koloskopie von einem Endoskopiker mit einer ADR < 25 % durchgeführt wurde. Niedrig-Risiko Patienten hatten ein vergleichbares Risiko an einem KRK zu versterben wie Patienten mit einer negativen Koloskopie unabhängig von der ADR. Verglichen mit einer qualitativ hochwertigen negativen Koloskopie hatten Personen mit Hoch-Risiko Adenomen ein signifikant höheres Risiko an einem KRK zu versterben, wenn die Koloskopie von einem Endoskopiker mit einer ADR <25 % (adj. HR 2.25, 95 % CI 1.18-4.31), nicht jedoch wenn die Koloskopie einem Endoskopiker mit einer ADR ≥25 % durchgeführt wurde (adj. HR 1.35, 95 % CI 0.61-3.02).

Fazit Die Ergebnisse dieser Studie unterstreichen die Wichtigkeit einer Qualitätssicherung in der Vorsorgekoloskopie. Eine qualitative hochwertige Untersuchung war mit einer niedrigeren Mortalität des KRK assoziiert. Der Einfluss der ADR war am stärksten bei Hoch-Risiko Patienten.

P15 Neue Risikostratifizierung nach kolorektaler Polypektomie reduziert die Bürde an Nachsorekoloskopien ohne die Mortalität zu erhöhen

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Hintergrund Das 2020 publizierte Leitlinien-Update zur Post-Polypektomie Nachsorge der Europäischen Gesellschaft für Gastrointestinale Endoskopie (ESGE) definierte eine restriktivere Gruppe an Patienten, die einer Nachsorgekoloskopie nach 3 Jahren zugewiesen werden sollen.

Ziel Ziel dieser Studie war eine Validierung der neuen Nachsorge-Empfehlungen

Methoden Basierend auf einem nationalen Qualitätssicherung Programm verglichen wir Assoziation der Risikogruppen nach Definition der 2020 Leitlinie mit jener der 2013 Leitlinie in Hinblick auf Darmkrebs-assoziierte Mortalität und die allgemeine Sterblichkeit.

Ergebnisse Es wurde 265,608 Vorsorgekoloskopie analysiert. Das Durchschnittsalter der Patienten lag bei 61,1 Jahren (SD ±9.0), und 50,6 % waren Frauen. In einem Beobachtungszeitraum von 59,3 Monaten wurden 7.723 Todesfälle beobachtet, 170 davon waren Darmkrebs assoziiert. 62,4 % der Vorsorgekoloskopien waren negativ, 4,9 % der Patienten wurden anhand der 2020 Leitlinie der Hochrisikogruppe, die einer Nachsorgekoloskopie nach 3 Jahren bedarf, zugeordnet, im Vergleich zu 10,4 % anhand der 2013 Leitlinie. Das entspricht einer relativen Reduktion von 47 %. Die Definition der Hochrisikogruppe anhand der 2020 Leitlinie war deutlich stärker mit der Mortalität an Darmkrebs assoziiert als die der 2013 Leitlinie (HR 2.56, 95 %CI 1.62-4.03, vs. HR 1.73, 95 %CI 1.13-2.62), die der Niedrigrisikogruppe war etwas niedriger (HR 1.17, 95 % CI 0.83-1.63 vs.1.25, 95 % CI 0.88-1.76).

Fazit Die Risikostratifizierung der 2020 Post-Polypektomie Leitlinie der ESGE reduziert die Anzahl der Nachsorgekoloskopien um 47 % während die Effektivität der Nachsorge auf die Prävention der Darmkrebs-assoziierten Mortalität erhalten bleibt.

P16 Flexible endoskopische Therapie des Zenker Divertikels

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Hintergrund und Ziele Das Zenker-Divertikel betrifft mit einem Erkrankungsgipfel in der 7. und 8. Lebensdekade vor allem ältere Patienten mit einem erhöhten Operations- und Narkoserisiko. Die flexible endoskopische Divertikulotomie stellt eine schonende und breit anwendbare Behandlungsmethode dar. In dieser Studie wurde die Effektivität und Sicherheit dieses Verfahrens untersucht.

Methodik Die retrospektive Studie umfasst alle endoskopisch-flexiblen Divertikulotomien, die im Zeitraum von 01.01.2010 bis 31.12.2019 durchgeführt wurden. Dabei wurden Endoskopiebefunde, Arztbriefe, Operationsprotokolle sowie und Pflegedokumentationen ausgewertet und mit dem Exakte Test nach Fisher statistisch verglichen.

Ergebnisse Insgesamt wurden 78 flexible Divertikulotomien erfasst. 53 (68 %) wurden an männlichen und 25 (32 %) an weiblichen Patienten vorgenommen. Das durchschnittliche Alter zum Interventionszeitpunkt betrug 71 ± 12 Jahre. Die Patienten präsentierten sich großteils mit Dysphagie (82,2 %) und Regurgitation (45,2 %). Präinterventionell betrug die Divertikelgröße durchschnittlich 3,1 ± 1,4 cm. Ein primärer Eingriffserfolg konnte bei 94 % der Eingriffe erzielt werden. Es kam zu keinen letalen und lediglich bei zwei (2,6 %) Eingriffen zu schweren intensiv-pflichtigen Komplikationen. Bei 10 (12,8 %) weiteren Eingriffen kam es zu leichten Komplikationen. Im Median betrug die Hospitalisationsdauer 4 Tage.Im Follow-Up konnten 52 Patienten beurteilt werden. Hiervon entwickelten 11 (22 %) ein Rezidiv und wurden zum Teil erneut behandelt. Letztendlich konnte nach Ausschöpfung der

interventionellen Möglichkeiten lediglich 4 Patienten (7,7 %) nicht zufriedenstellend geholfen werden. Der primäre Eingriffserfolg, die Minor-Komplikationsrate sowie die Rezidivrate zeigten eine signifikant positive Entwicklung im zeitlichen Verlauf dieser Studie. Daraus lässt sich auf eine relativ flache Lernkurve schließen.

Schlussfolgerung Die flexible Divertikulotomie gewinnt zunehmend an Bedeutung in der Behandlung des Zenker-Divertikels. Sie stellt eine sichere und effektive Behandlungsoption dar. Um den Eingriffserfolg in Zukunft besser quantifizieren zu können, ist die Anwendung validierter Scores wie des Dysphagiescores zu empfehlen. Des Weiteren könnte eine Validierung weiterer klinischer Scores für Zenker-Divertikel, wie des bei Achalasie verwendeten Eckardt-Scores, nützlich sein.

P17 Perorale endoskopische Myotomie am Ordensklinikum Linz

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Einleitung Die perorale endoskopische Myotomie (POEM) ist ein minimal invasives Verfahren zur Therapie der Achalasie. Wir analysieren die Ergebnisse in unserem Klinikum.

Patienten und Methodik Unsere retrospektive Datenanalyse umfasst alle Achalasie-Patienten, die von 2015 bis 2018 mit POEM behandelt wurden. Die präoperative Evaluierung beinhaltete Anamnese, HR-Manometrie, ÖGD und Videokinematographie. Nachkontrollen wurden 6 Wochen nach POEM mit ÖGD und Reevaluierung der klinischen Beschwerden durchgeführt. 43 Patienten wurden mit POEM behandelt. 22 (52 %) waren Frauen, 21 (49 %) waren Männer. Das durchschnittliche Alter betrug 55 (17-84) Jahre. 6 Patienten (14 %) waren mit Botoxinjektion, 12 Patienten (28 %) mit Ballondilatation vorbehandelt worden. Entsprechend der Chicago Klassifikation wurden 30 Patienten (85.7 %) mit einer Achalasie Typ II, 4 Patienten (11 %) mit einer Achalasie Typ III und 2 Patienten (6 %) mit einer Achalasie Typ I diagnostiziert. Die mittlere Länge der Myotomie betrug 8.5±0.5cm und wurde bis 2cm über den gastroösophagealen Übergang ausgedehnt.

Ergebnisse Von 36 auswertbaren Eingriffen wurde in 33 Fällen (92 %) ein initialer Therapieerfolg (definiert als Eckardt Score ≤3) erzielt. 3 Patienten (8 %) entwickelten ein Rezidiv. Insgesamt konnte eine signifikante Reduktion des Eckardt Scores von 7.0±0.3 auf 1.0±0.2 nach POEM erreicht werden (p<0,0001). Wir beobachteten 5 Komplikationen (11 %), welche aber alle konservativ behandelt werden konnten. Bezüglich postoperativ neu aufgetretener Refluxerkrankung konnten 24 Datensätze ausgewertet werden. 9 Patienten (37,5 %) zeigten eine erosive Ösophagitis oder eine symptomatische Refluxerkrankung: bei 7 Patienten wurde endoskopisch eine erosive Ösophagitis Grad A (21 %) oder Grad B (8 %) nach der Los Angeles Klassifikation diagnostiziert. Weitere 2 Patienten berichteten nur typische Symptome. Die Komplikationsrate sank im Verlauf von 4 Jahren von 25 % auf 0, ebenso nahmen die Rezidive im Zeitverlauf ab (Lernkurve).

Fazit Die perorale endoskopische Myotomie ist eine effektive und sichere Methode zur Therapie der Achalasie. Sie weist eine flache Lernkurve auf.

P18 The impact of Artificial Intelligence on the adenoma detection rate (ADR): a comparison between experienced and trainee endoscopists' ADR

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Aims Colorectal cancer (CRC) is the second most common cause of cancer death in the European Union. Most cases of CRC arise out of adenomas, which could be easily treated in a timely manner by endoscopic removal. Many studies have proven that a high adenoma detection rate (ADR) reduces the incidence of CRC. Artificial Intelligence (AI) is a promising new tool to achieve a high ADR. The aim of this study is to evaluate the impact of AI on the frequency of adenoma detection by endoscopists in training in comparison to the frequency of detection by senior endoscopists. Methods: Data from all patients who underwent colonoscopy with a GI Genius™ enhanced colonoscope were collected within a period of two months. Endoscopists were divided into two groups, a trainee group (7 endoscopists; < 500 colonoscopies) and an expert group (4 endoscopists; > 1000 colonoscopies). The polyp and adenoma detection rates of both groups were calculated and compared using cross tabulation and the chi-square test.

Results So far 150 patients (77 male, 73 female), mean age: 60 (SD± 16) years have been included. The most common indications for colonoscopy were screening (21,3 %), surveillance (17,3 %), GI disturbances (12,7 %), bleeding/anemia (12 %), CED (10,7 %) and elective polypectomy (10 %). Most procedures were done by the trainee group (n = 94). In total 311 polyps were removed. The polyp detection rate (PDR) was 69,1 % in the trainee group and 67,9 % in the expert group. The adenoma detection rate was 48,9 % in the trainee group and 46,4 % in the expert group. There was no significant difference between both groups in terms of PDR (p = 0,869) and ADR (p = 0,766).

Conclusion Our interim analysis shows that Artificial Intelligence can help to minimize the difference of ADR between experienced and trainee endoscopists.

P19 Endoskopische Raritäten

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Das Endoskopie-Team der 1. Med. Abt. der Klinik Hietzing/Wien freut sich, eine interessante Auswahl an endoskopischen Raritäten und Kuriositäten präsentieren zu dürfen: 1. Aus der ERCP: Ein typischer Fall von Clipolithiasis, neugierig geworden? 2. Aus der Kapselendoskopie: Wie eine Endo-Kapsel auf luftigen Abwegen wieder auf den rechten Weg gelangte. 3. Aus der Gastroskopie: Ein Drahtseilakt im Bulbus duodeni, oder: Spirali di metalli - wenn Coils auf Wanderschaft gehen. 4. Warum der Wechsel einer auswärts gesetzten PEG-Sonde auf einen Gastro-Tube zu unstillbarer Diarrhoe führte. 5. Wenn die Varizenligatur übers Ziel hinaus schießt - oder: Er hat ein knalldichtes Gummiband, Gummiband.

P20 Red-green-blue (RGB) profiling of pancreatic mass-elastographies: validation of a predictive model for non-invasive assessment of malignancy

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Introduction Red-green-blue (RGB) profiling is a well-accepted method in imaging science.

Aim To evaluate the accuracy of quantitative image analysis of pancreatic tumor elastographies obtained by EUS to predict malignancy.

Methods Elastographies of solid pancreatic masses between 04/2017-04/2020 were extracted from our ultrasound device (Arrieta Hitachi-V70). A validation group was defined (since the software update in 08/2019) to validate the predictive model for malignancy. Quantitative RGB analysis was performed using ImageJ software (NIH). The exact amount of blue (hard), green (intermediate), and red (soft tissue-elasticity) was measured and expressed in pixels and percentages. Only the tumor tissues inside well-defined margins

set by the operator were analyzed. The color intensity was measured on a scale of 0-255 for an 8-bit image. The intensity ratio for each color was defined as the relation between the absolute value for this color and the intensity of the sum of all three colors (R+G+B). The final diagnosis was made by histopathology, or a combination of radiological findings, tumor markers and clinical follow-up.

Results In main cohort, 59 solid pancreatic lesions evaluated by strain elastography were included: 45(75 %) malignant-60 % adenocarcinomas, 8.3 % metastasis and 6.6 % NETs, and 14(23.3 %) benign masses. In the validation cohort, 20(76.9 %) malignant-73.1 % adenocarcinomas, 3.8 % metastasis, and 6(23.1 %) benign tumors were included. Cut-off values (CO) for 4 variables (criteria) of the main cohort correlating with the presence of malignancy were calculated: blue color (CO >55 %-Se 93.3 %, Spe 35.7 %, AUC 0.62), green color (CO <42.5 %-Se 97.8 %, Spe 42.5 %, AUC 0.64), green color intensity ratio (CO <56 %-Se 71.1 %, Spe 78.6 %, AUC 0.76), red color intensity ratio (CO <18.5 %-Se 42.2 %, Spe 92.9 %, AUC 0.63). Good concordance between the main and the validation group was seen (Table).

Conclusion Quantitative image analysis of tumor elastographies obtained by EUS may predict or exclude malignancy with high accuracy.

Criteria	Main cohort (04/2017-07/2019)	*Risk of malignancy*	Validation cohort (08/2019-04/2020)	*Risk of malignancy*
0	n=5	0%	n=1	0%
1 or 2	n=15	60%	n=11	63.6%
3 or 4	n=39	92.3%	n=14	92.9%

▶ **Tab. 1**

P21 Factors affecting the diagnostic performance of EUS-guided sampling in solid pancreatic lesions by trainee endoscopists

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Introduction EUS is associated with a long learning curve. Both technical and cognitive skills of the operator are needed to reach the necessary level of competence.

Aim To assess the factors which may influence the accuracy and sensitivity for malignancy in EUS-guided sampling of solid pancreatic lesions by trainees.

Methods Our study included EUS-guided punctures of solid pancreatic masses identified in a prospectively collected database of two Austrian centers. Examinations were performed by eight endosonographers (six trainees). An experienced operator was defined as having performed at least 250 EUS examinations, including 75 FNA/FNBs. The final diagnosis was determined by cyto-histopathology or clinical follow-up with a combination of tumor-markers and radiological findings.

Results 283 EUS-FNA/FNB of solid pancreatic lesions (75.6 % malignant) in 239 patients (median age 69 years, 57.6 % males) were enrolled. Trainees performed 149/283 (52.7 %) interventions. Overall accuracy and sensitivity for malignancy were significantly lower in the trainee group compared to the expert group (73.2 % vs. 85.8 %,p = 0.01, and 68.4 % vs. 82.5 %,p = 0.02). The operator's experience was the only significant factor in the multivariate analysis to predict correct diagnosis (OR 2.08, 95 % CI 1.05-4.13,p = 0.03). The highest odds for a correct diagnosis were observed in experts performing EUS-FNB (OR 3.07, 95 % CI 1.15-8.23,p = 0.02). Experts reached higher accuracy in sampling via the trans-duodenal approach (86.7 % vs. 68.5 %,p = 0.004). There was a notable numerical difference in diagnostic performance for small lesions (<20mm). However, sensitivity for malignancy in large lesions (>40mm) was similar good in both groups (80.9 % vs. 81.3 %,p = 0.64; Table). Biopsy devices and 22 gauge needles were used more frequently by experienced endosonographers than by trainees. Four out of six procedure-related adverse events occurred early in the training process.

Conclusion During EUS training, it would be reasonable to perform punctures of smaller lesions via transduodenal approach by more advanced trainees.

EUS-FNA and FNB						
	Accuracy			Sensitivity		
Variables	***Expert***	***Trainee***	***p***	***Expert***	***Trainee***	***p***
Puncture						
Trans-gastral	84.1 (37/44)	85.4 (35/41)	0.89	75.9 (22/29)	81.3 (26/32)	0.84
Trans-duodenal	86.7 (78/90)	68.5 (74/108)	**0.004**	85.3 (58/68)	63.5 (54/85)	**0.004**
Tumor Type						
Malignant	82.5 (80//97)	68.4 (80/117)	**0.02**	82.5 (80/97)	68.4 (80/117)	**0.02**
Benign	94.6 (35/37)	87.5 (28/32)	0.53	/	/	/
Tumor Size						
< 20 mm	88.2 (15/17)	66.7 (14/21)	0.24	78.6 (11/14)	62.5 (10/16)	0.57
20-40 mm	80 (44/55)	72 (72/100)	0.36	76.6 (36/47)	65.8 (52/79)	0.28
> 40 mm	94.4 (17/18)	80.9 (17/21)	0.43	93.3 (14/15)	81.3 (13/16)	0.64
Needle Size						
19 G	81.6 (31/38)	72.4 (71/98)	0.37	75.9 (22/29)	67.9 (53/78)	0.57
22 G	87.5 (84/96)	74.5 (38/51)	0.07	85.3 (58/68)	69.2 (27/39)	0.08
EUS-FNB technique only						
Puncture						
Trans-gastral	90 (27/30)	93.3 (14/15)	0.85	83.3 (15/18)	92.3 (12/13)	0.84
Trans-duodenal	87.7 (57/65)	63.3 (19/30)	**0.01**	87.8 (43/49)	56.5 (13/23)	**0.007**
Tumor Type						
Malignant	85.5 (59/69)	69.4 (25/36)	0.08	85.5 (59/69)	69.4 (25/36)	0.08
Benign	93.1 (27/29)	88.9 (8/9)	0.76	/	/	
Tumor Size						
< 20 mm	100 (7/7)	80 (4/5)	0.85	100 (5/5)	66.7 (2/3)	0.78
20-40 mm	82.1 (32/39)	74.1 (20/27)	0.63	80 (28/35)	69.6 (16/23)	0.55
> 40 mm	92.3 (12/13)	62.5 (5/8)	0.26	90.9 (10/11)	66.7 (4/6)	0.55
Needle Size						
19 G	100 (2/2)	87.5 (7/8)	0.42	100 (1/1)	87.5 (7/8)	0.18
22 G	87.5 (84/96)	70.3 (26/37)	/	85.3 (58/68)	64.3 (18/28)	/

P22 Endoscopic ultrasound (EUS) dependent decision to perform endoscopic retrograde cholangiopancreatography (ERCP) in biliary pancreatitis without cholestasis on conventional imaging

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Introduction In patients with acute biliary pancreatitis (ABP) with cholangitis or biliary obstruction, an early ERCP is recommended.

Aim To assess the outcome of ABP patients using EUS for deciding to perform an ERCP or not.

Methods Our prospective study included ABP patients without cholangitis or obvious cholestasis on conventional imaging admitted to our Department between 01/2018-03/2021. Biliary etiology was defined as the presence of at least one of the following three criteria: a) gallstones, b) history of cholecystectomy, or c) elevated liver enzymes (ALT, AST and/or AP >2 x ULN), without recent excessive alcohol consumption. All patients were first

evaluated by EUS, and in cases where choledocholithiasis was diagnosed, an ERCP was performed subsequently.

Results 81 ABP patients with a mean age of 63.5 ± 18.1 years (51.8 % female) were included. Gallstones were diagnosed in 80.2 % of cases, and 19.8 % had previously undergone cholecystectomy. By EUS, choledocholithiasis was diagnosed in 32/81 (39.5 %) patients. ERCP could be successfully performed in 29/32 (90.6 %) of these cases. We did not observe ABP-related mortality in our cohort. Development of severe pancreatitis, organ failure, cholangitis, readmission because of biliary complications, and hospital stay were similar in patients with choledocholithiasis in EUS (and consecutive ERCP) compared to those without choledocholithiasis in EUS (and no ERCP, Table). Two out of three patients (66.6 %) with choledocholithiasis diagnosed by EUS and unsuccessful ERCP developed severe pancreatitis with persistent organ failure and intensive care admission.

Conclusion EUS is a very good method for diagnosing choledocholithiasis in ABP patients without obvious cholestasis on conventional imaging and helps to decide whether ERCP is needed or not.

	Positive EUS and successfully ERCP (n=29)	Negative EUS and no ERCP (n=49)	p
Pancreatitis severity (revised Atlanta criteria)			
-mild	68.9%	69.4%	0.90
-moderately severe	31.1%	28.5%	0.94
-severe	0 %	2.1 %	0.79
New organ failure	0 %	2.1 %	0.79
ICU admission	0%	0%	-
Cholangitis	3.4%	0%	0.79
Pancreatic necrosis	10.3%	6.1%	0.77
Readmission because of biliary complications	3.4%	6.1%	0.96
Hospital stay (days)	7 (3-23)	6 (3-43)	0.21

P23 Combined use of endoscopic ultrasound (EUS) and endoscopic retrograde cholangiopancreatography (ERCP) for evaluation of obstructive jaundice and distal biliary strictures

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Introduction EUS and ERCP are complementary methods in the diagnostic workup of patients with obstructive jaundice.

Aim To assess the accuracy of EUS and ERCP combined and compared with radiologic imaging (CT, MRT/MRCP) in patients with obstructive jaundice and distal biliary strictures.

Methods Our retrospective study included consecutive patients between 01/2017-10/2020 with painless jaundice, who received EUS with fine-needle aspiration (FNA), and ERCP with brush cytology and/or biliary duct biopsy. Before the procedure, at least one radiological examination (CT, MRT/MRCP) was performed. Positive cyto-/histopathology was defined as the finding of at least atypical cells with dysplasia. The final diagnosis was established through a combination of histopathology, surgery, radiological findings, autopsy, and clinical follow-up.

Results We identified 72 patients (mean age 68.5±11.3 years, 59.7 % males) with painless obstructive jaundice evaluated by both EUS and ERCP. In 34/72 cases (47.2 %), both examinations were performed on the same day. The final diagnosis (79.1 % malignant) was as follow: pancreatic adenocarcinoma 45 (62.5 %), cholangiocarcinoma 10(13.9 %), chronic pancreatitis 7(9.7 %), inflammatory benign biliary strictures 7(9.7 %), neuroendocrine pancreatic tumor 1(1.4 %), autoimmune pancreatitis 1(1.4 %) and sarcoma 1(1.4 %). Tissue sampling was performed more often in EUS than in ERCP (86.1 % vs.47.2 %) and tended to have a better accuracy (83.8 %vs.70.5 %,p = 0.20). With the combination of EUS and ERCP, 65/72(90.2 %) of all and 50/57 (87.7 %) of malignant cases were diagnosed correctly. In malignant tumors, EUS guided sampling was performed more often than ERCP guided (92.9 % vs.35.1 %) and showed better sensitivity for malignancy (81.1 %vs.50 %, p = 0.01). In 8/57(14.1 %) of cases, only EUS could detect the tumor (CT and/or MRT were negative), while no cases detected by conventional imaging and missed by EUS were documented.

Conclusion The combination of EUS and ERCP in the diagnostic workup of patients with painless obstructive jaundice is a useful and more accurate strategy to exclude malignancy in distal biliary stenosis compared to conventional imaging alone.

P24 ERCP in Österreich: Hat die Zentrumsgröße Einfluss auf Erfolgs- und Komplikationsraten?

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Hintergrund und Methoden Seit 2006 besteht das Qualitätssicherungsprogram‚Benchmarking ERCP“ der ÖGGH. Anhand dieser Daten werden Erfolgsraten und Komplikationen bei ERCPs ausgewertet. Wir gingen für den Zeitraum von 2013-2020 der Frage nach, ob die Zentrumsgröße (‚high volume centers“ (HVC) ≥200 ERCPs/Jahr‚‚low volume centers“ (LVC) < 200 ERCPs/Jahr) einen Einfluss auf Erfolgs- und Komplikationsraten darstellt. Um HVC mit LVC vergleichbar zu machen, wurde die Schwierigkeitsgrade nach Cotton (SGC) herangezogen, und die Ergebnisse innerhalb der Schwierigkeitsgrade gegenübergestellt.

Ergebnisse Im angeführten Zeitraum wurden von 29 Zentren, davon 7 HVC und 22 LVC, insgesamt 23.634 ERCPs dokumentiert, davon 13.5 % SGC 1, 51.5 % SGC 2, 27.7 % SGC 3 und 6.3 % SGC 4. Die Darstellung und Sondierung des gewünschten Gangs sowie das Erreichen der therapeutischen Zielsetzung gelang häufiger in HVC und waren bei niedrigem SGC signifikant (siehe Tabelle). Post ERCP Pankreatitiden, Perforationen, klinisch relevante

Tabelle: Erfolgs- und Komplikationsraten in HVC vs. LVC innerhalb der Schwierigkeitsgrade nach Cotton

Erfolgs- und Komplikatiosraten	Schwierigkeitsgrad Cotton 1	Schwierigkeitsgrad Cotton 2	Schwierigkeitsgrad Cotton 3	Schwierigkeitsgrad Cotton 4
Pankreatitis (%)				
LVC	2,9	6,4	4,5	5,7
HVC	1,5	2,9	3,7	3,7
	p=0,007	p<0,001	N.S.	N.S.
Perforation (%)				
LVC	0,3	0,8	0,4	0,7
HVC	0,1	0,5	0,7	0,6
	N.S.	p=0,025	N.S.	N.S.
Blutung schwer (%)				
LVC	0,8	0,3	0,4	1,5
HVC	0,2	0,2	0,3	0,8
	p=0,042	N.S.	N.S.	N.S.
Cholangitis (%)				
LVC	0,8	1,3	1,6	2,0
HVC	0,8	0,8	0,9	1,6
	N.S.	p=0,004	p=0,006	N.S.
Kardiopulmonale Ereignisse (%)				
LVC	0,6	0,9	1,3	1,2
HVC	0,2	0,3	0,4	0,5
	N.S.	p=<0,001	p=<0,001	N.S.
Darstellung gewünschter Gang (%)				
LVC	85,0	92,1	94,8	87,3
HVC	90,9	94,4	95,7	88,7
	p<0,001	p<0,001	N.S.	N.S.
Sondierung gewünschter Gang (%)				
LVC	84,5	91,8	94,6	86,8
HVC	90,1	93,9	95,1	88,3
	p<0,001	p<0,001	N.S.	N.S.
Therapeutische Zielsetzung erreicht (%)				
LVC	82,4	86,0	85,4	72,4
HVC	87,6	90,7	86,6	75,4
	p<0,001	p<0,001	N.S.	N.S.

LVC=low volume centers, HVC=high volume centers, N.S. = nicht signifikant

Blutungen, Cholangitiden und kardiopulmonale Komplikationen waren in HVC seltener, allerdings nicht in allen SGC statistisch signifikant (siehe Tabelle).

Zusammenfassung Die vorliegenden Daten zeigten, dass HCV bessere Erfolgs- und niedriger Komplikationsraten als LVC aufweisen. Dazu wurden die SGC herangezogen, um die Zentren untereinander vergleichbar zu machen. Interessanterweise sind die Erfolgsraten in HVC nur bei niedrigem Schwierigkeitsgrad (SGC 1 und 2) signifikant besser. Auch die Rate der Post-ERCP-Pankreatitis war in HVC nur bei SGC 1 und 2 signifikant niedriger. Welche Faktoren dafür verantwortlich sind, wird weiter statistisch analysiert werden.

P25 Outcomes and safety of endoscopic submucosa dissection at a university clinic in Austria

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Introduction Endoscopic submucosa dissection (ESD) has evolved to an excellent treatment option for early carcinomas in the upper and the lower gastrointestinal tract as well as for large lateral spreading tumors (LST) of the colorectal area and is often preferred to surgery.

Methods In this retrospective analysis we included all ESD procedures performed at Kepler University hospital from March 2020 until May 2021. Before each ESD a second look endoscopy was performed to check on the feasibility of the procedure. We analysed the rate of successful ESDs, en bloc resections and short-term complications within seven days. Furthermore we checked if the procedure was curative and the rate of carcinomas in the resection specimens.

Results In total, 53 ESDs were performed during the observational interval. The mean age of patients was 64 years (range 38-84). 18 ESDs were performed in the oesophagus (both barret´s and squamous epithelial), 10 ESDs in the stomach, 23 in the rectum and 2 in the colon.Overall, the success rate was 94 % (50/53) and the en bloc resection rate was 87 % (46/53). Complications happened four times. One perforation (2 %) with the need for acute surgery and three delayed bleedings (6 %) with sufficient endoscopic bleeding control. The need for stopping the procedure was two times (4 %) because of deep submucosal invasion.

Regarding the established histologic criteria, the rate of curative ESDs was 76 % (40/53). In eleven cases (21 %) surgery after the ESD was indicated. The rate of carcinomas was 49 % (26/53).

Conclusion ESD is a safe and effective procedure for treating LST and early carcinomas in the gastrointestinal tract but should only be performed in centres with enough cases and expertise. In comparison to published literature the outcome and safety of the procedure at Kepler University hospital is comparable.

P26 Short-term outcome and safety of peroral endoscopic myotomy for treating achalasia in a university hospital in Austria

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Introduction Achalasia is a rare condition with a disturbed oesophageal peristalsis resulting in a failing relaxation of the lower oesophageal sphincter due to a degeneration of myenteric plexus. Peroral endoscopic myotomy (POEM) has increasingly become the preferred treatment option over laparoscopic Heller´s myotomy for treating achalasia.

Methods In this retrospective analysis we included all POEMs performed from March 2020 to May 2021 at Kepler University hospital. We assessed the short-term outcome both clinical and via barium swallow imaging. Furthermore we assessed the length of the myotomy, procedure-inherent complications, post-interventional level of C-reactive protein (CRP) and length of hospitalisation.

Results In total we performed 10 POEMs during the observational period. The mean age of patients was 53 years (range 16-75), 4 of 10 were male. The mean length of myotomy was 10,7 centimetres (range 7-15). The initial success rate (no dysphagia and a normal imaging) was 100 %. Complications happened in 5 cases (50 %), all of these were a pneumoperitoneum, which could be treated successful via cannulation. There was no need for surgery in any case. Perforations did not happen. The mean level of CRP on the post-procedure day was 4,05 mg/dl. Hospital dismission was possible in mean at day 3 (range 2-5). After a period of six weeks we did not observe reflux oesophagitis in any patient.

Conclusion POEM is a safe and effective procedure and preferred over Heller´s myotomy because of the advantages like minimal-invasiveness and a shorter need for hospitalisation. Short-term outcomes and safety in our hospital is comparable to published literature.

Gastroenterologie

P27 Gastrointestinal Bleedings are common adverse events in Secondary Sclerosing Cholangitis in Critically Ill Patients (SC-CIP)

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Background and aims The rare cholestatic liver disease secondary sclerosing cholangitis in critically ill patients (SC-CIP) is induced by long-term intensive care treatment with invasive ventilation in patients without prior liver damage. The aim of this retrospective, single-center, investigator-initiated study was to describe the frequency and characteristics of gastrointestinal bleedings in SC-CIP.

Methods Patients with the established diagnosis SC-CIP were identified retrospectively and compared to a prospectively recruited control group of patients with the need for cardiac surgery and subsequent intensive care treatment who did not develop the liver disease. The patient records were screened for gastrointestinal bleedings. Vascular anatomy of SC-CIP patients was assessed with available cross-sectional imaging modalities.

Results Fifty-three patients with SC-CIP and 19 controls were identified for the study. Gastrointestinal bleedings occurred with a frequency of 30 % in SC-CIP (16 patients) and 5 % in the control group (1 patient) ($p = 0.03$). Bleeding onset was in the mean more than a year after admission to an intensive care unit in SC-CIP and only three bleeding episodes emerged during the initial intensive care treatment. Three SC-CIP patients (19 %) had cirrhosis at time of bleeding, 5 (31 %) had splenomegaly and 4 (25 %) received oral anticoagulation. In SC-CIP, 13 bleedings were notified in the upper gastrointestinal tract, two in the lower, and one remained unexplained. Gastroduodenal ulcers, partly at atypical locations in the stomach, were the most common reasons for bleeding. 80 % of patients needed blood units, one death due to bleeding occurred in a patient with SC-CIP-induced cirrhosis. Altered vascular anatomy or suspected vascular stenosis was observed with similar frequency in SC-CIP patients with and without bleedings.

Conclusion In conclusion, gastrointestinal bleedings are common adverse events in patients with SC-CIP. Whether the liver disease itself or co-factors cause the susceptibility for bleeding remains unclear.

P28 Retrospektive Analyse der fäkalen Mikrobiotatransfers bei Clostridium-difficile-Infektion und Colitis ulcerosa am Ordensklinikum Linz

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Hintergrund Sowohl bei einer Clostridium-difficile-Infektion (CDI) als auch bei Colitis ulcerosa (CU) stoßen behandelnde ÄrztInnen mitunter auf das Problem, dass die Erkrankungen nicht mehr ausreichend auf die konventionellen Therapien ansprechen. Eine Gemeinsamkeit der beiden Erkrankungen besteht im gestörten intestinalen Mikrobiom der PatientInnen. An dieser Stelle soll der fäkale Mikrobiotatransfer ansetzen. Dieser stellt nun schon seit vielen Jahren eine wirksame und sichere Therapieoption zur Behandlung einer rezidivierenden CDI dar, doch auch zur Remissionsinduktion bei CU findet der FMT zunehmend Anwendung und ist Bestandteil aktueller Forschung. Mit der Studie soll geprüft werden, wie erfolgreich diese Behandlungsoption im internationalen Vergleich ist. Hierzu werden 19 PatientInnen im Hinblick auf Outcome und Komplikationen untersucht.

Methodik Diese retrospektive Studie umfasst alle 19 PatientInnen, die zwischen dem 17.12.2012 und dem 30.11.2020 mittels FMT wegen einer CDI oder CU behandelt wurden. Es wurden Entlassungsbriefe, Endoskopieprotokolle sowie Anamneseblätter analysiert und ausgewertet. Mit diesen Daten wurde anschließend eine deskriptive Statistik erstellt.

Ergebnisse Von den 19 StudienteilnehmerInnen wurden 17 wegen einer CDI behandelt, 2 wegen einer CU. Letztere wurden aufgrund der geringen Fallzahl als Fallbericht getrennt präsentiert. Unter 17 PatientInnen waren 9 (52,9 %) Männer und 8 (47,1 %) Frauen. Die Männer waren im Durchschnitt 51,4 (SD 21,7), die Frauen 54,4 (SD 21,7) Jahre alt. 6 (35,3 %) Personen hatten eine CU als Begleiterkrankung. Bei allen PatientInnen wurde der FMT per Koloskopie durchgeführt, wobei durchschnittlich 459 ml (SD 109) Stuhl eingebracht wurden. Alle Eingriffe sowie postinterventionelle Verläufe waren komplikationslos. In der Nachbeobachtungszeit von einem Monat konnte in 100 % der Fälle eine Rezidivfreiheit festgestellt werden.

Schlussfolgerung Die Ergebnisse legen den Schluss nahe, dass der FMT eine wirksame und sichere Therapie zur Behandlung einer CDI darstellt.

P29 Familiäre und hereditäre Pankreatitis

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Hintergrund Die familiäre Pankreatitis wird durch eine autosomal-dominant vererbte PRSS1-Keimbahnmutation (cationic trypsinogen, hereditäre Pankreatitis im engeren Sinn) sowie Genmutationen in SPINK1 (serine-protease inhibitor Kazal-type 1) oder CFTR (cystic fibrosis transmembrane conductance regulator) verursacht. Bereits im Kindesalter ereignen sich akut-rezidivierende oder chronische Pankreatitiden. Neben der Schmerztherapie bei juveniler Erstsymptomatik sind die kindliche Entwicklung (Therapie einer häufig begleitenden exokrinen Pankreasinsuffizienz), ein pankreopriver Diabetes mellitus und das erhöhte Pankreaskarzinomrisiko im Erwachsenenalter zu verfolgen.

Methoden Elf PatientInnen mit hereditärer Pankreatitis und juveniler Erstmanifestation wurden retrospektiv hinsichtlich Entwicklungsverlauf, Therapiekonzept und Komplikationen analysiert. Zehn PatientInnen erschienen zur Nachuntersuchung (klinische Exploration, Anthropometrie, Schmerzevaluation). Dabei wurden Therapieerfolg und Lebensqualität mittels COPPS (chronic pancreatitis prognosis score) objektiviert, zur Evaluierung der Lebensqualität der juvenilen Fälle diente der KIDSCREEN-10 Index.

Ergebnisse Das mittlere Erstmanifestationsalter lag bei 7,5±4,2 Jahren, die Erstdiagnose bei 12,1±7,2 Jahren. PRSS1- und SPINK1-Mutationen bestanden in je 36,4 %. Frühe Erstmanifestation und maternale PRSS1-Vererbung waren assoziiert. Insgesamt wurden 136 Jahre überblickt. In 90,9 % imponierte ein obstruktiver Pankreatitisverlauf. 27,3 % hatten ein Pankreas divisum, 18,2 % einen langen common-channel. Bei 63,6 % trat eine exokrine Pankreasinsuffizienz auf (mittleres Alter: 12,5 Jahre). In 72,7 % erfolgte eine Stentingtherapie. 45,5 % des Kollektivs absolvierten ein 1-Jahres-Stentingprogramm (mittlere Stentingdauer: 13,7 Monate). Nach frustraner endoskopischer Intervention benötigten 18,2 % der Kinder eine Pankreasoperation. Nach adäquater Step-up Therapiestrategie betrug im Mittel der COPPS 7,5 Punkte (COPPS B), die Schmerzen auf der numerischen Ratingskala 0. Der mittlere KIDSCREEN-T-Score von 66,7 bestätigte eine sehr gute Lebensqualität.

Schlussfolgerung Schmerzen, Pankreatitisepisoden und Malnutrition mit ihren Folgen auf das kindliche Gedeihen können bei hereditärer Pankreatitis durch ein Step-up Therapiekonzept (meist mit endoskopischer Therapie, selten Pankreatikojejunostomie) und Surveillance verhindert werden. Ein interdisziplinäres Zusammenwirken der Fachdisziplinen ist für das bestmöglichste PatientInnenoutcome relevant. Eine humangenetische Beratung unterstützt die Familienplanung. Zur Krebsvorsorge ist ein nationales Register mit aktiver Einladung anzustreben, ab zirka 35 Jahren ist jährlich eine Kernspintomographie oder Endosonographie ratsam.

P30 The influence of gender on the risk factors of acute pancreatitis in northeastern Austria

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Background Acute pancreatitis is a potentially life-threatening disease and a great economic burden of health care systems. Multiple risk factors can evoke pancreatitis and often multifactorial genesis must be suspected in the

▶ **Tab. 1** Risk factor distribution according to gender (n = 66), 52 % showed at least two risk factors.

Risk Factor	Female	Male	Sum
Alcohol	8	14	22
Obstruction	12	7	19
Nicotine	8	11	19 (9 with alcohol abuse)
Iatrogenic	11	8	19*
Hypertriglyceridemia	3	4	7
Idiopathic	2	4	6
Autoimmune pancreatitis	2	4	6
Anatomic anomaly	2	1	3
Family history	2	1	3
Other autoimmune disease	2	0	2
Viral	1	0	1
Genetics	0	0	0
Tumor	0	0	0

*post-ERCP pancreatitis and medication

absence of a predominant cause. Biliary obstruction and alcohol abuse are the most common aetiologies and, furthermore, gender differences have been reported. We aimed to investigate differences in risk factors for acute pancreatitis between sexes in the population of northeastern Austria.

Methods The St.Pölten Pancreatitis Registry, launched in November 2018, was analysed with regard to gender and causes of the disease. In this register therapy, aetiopathology, endoscopic interventions and course of disease are recorded for quality control and improvement. After informed consent all patients treated at our outpatient clinic who suffered from acute pancreatitis are included.

Results Between November 2018 and February 2020 66 patients were recruited and their data examined (33 male, 33 female), mean age: 57 (SD ± 16) years, mean BMI: 29 (SD ± 8) kg/m2. Alcohol and combined abuse with nicotine (9 of 22 cases of alcohol abuse) showed to be the most common risk factor followed by biliary obstruction in 19 cases. Alcohol abuse was more frequent in men than in women, while biliary obstruction was the leading cause in the latter (▶**Table 1**). However, differences showed not to be significant.

Conclusion In our study no significant differences between male and female could be shown in regards to genesis of acute pancreatitis. However, a trend suggests that the disease is more often associated with gallstones in women and alcohol in men. Overall, alcohol abuse was the most common risk factor. We look forward to update this analysis with greater numbers in the future.

P31 Der Effekt einer chronischen Statintherapie auf das Risikoeiner post-ERCP Pankreatitis mit bzw. ohne rektaler periprozeduraler NSAR-Therapie

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Der Effekt einer chronischen Statintherapie auf das Risiko einer post-ERCP Pankreatitis mit bzw. ohne rektaler periprozeduraler NSAR-Therapie.

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▶**Tab. 1** Hyperlipasämie und post-ERCP Pankreatitis Raten nach prophylaktischer rektaler NSAR-Therapie und vorbestehender Statintherapie.

Therapie	Unter Statintherapie	Ohne Statintherapie	p-Wert
Hyperlipasämie			
Rektale NSAR	15/85 (17.6 %)	41/209 (19.6 %)	0.79
Ohne rektale NSAR	27/117 (23.1 %)	83/425 (19.5 %)	0.46
Post-ERCP Pankreatitis			
Rektale NSAR	4/85 (4.6 %)	10/209 (4.7 %)	0.78
Ohne rektale NSAR	5/117 (4.2 %)	83/425 (3.7 %)	0.98

GRUNDLAGEN Bisher wurden kontroverse Daten zur Rolle der chronischen Therapie mit Statinen und Risikokoreduktion der post-ERCP-Pankreatitis veröffentlicht.

ZIEL Den Effekt einer vorbestehenden Statineinnahme auf das Risiko einer post-ERCP Pankreatitis mit oder ohne Einnahme von rektaken NSARs festzustellen.

METHODEN Unsere retrospektive Studie beinhaltet alle von 01/2019 bis 10/2020 durchgeführten ERCPs im Klinikum Klagenfurt. Untersuchungen mit teils fehlenden Angaben wurden exkludiert.Eine Hyperlipasämie wurde als Lipase-Erhöhung mit einem Anstieg ≥ des 3-fachen oberen Grenzwertes nach durchgeführter ERCP definiert.Eine Post-ERCP Pankreatitis wurde als abdomineller Schmerz mit Hyperlipasämie und/oder charakteristischen radiologischen Zeichen einer Pankreatitis definiert.Die präinterventionelle Einnahme von Statinen bzw. NSAR wurden aus Patientendaten ermittelt.

ERBEGNISS Es wurden 928 ERCPs untersucht. Nach Exklusion von 92 ambulant durchgeführten Untersuchungen bei welchen die Patienten nach erfolgter ERCP sofort ins Heimspital transferiert wurden, erfolgte die Analyse von insgesamt 836 ERPCs (davon 49,4 % männlich).24,1 % der Patient hatten eine Statintherapie in der Prämedikation.Hyperlipasämie wurde in 19,8 % der Patientenkohorte festgestelllt und war unabhängig von einer bestehenden bzw. fehlenden Statintherapie vergleichbar hoch: 20,7 % vs 19.5 % p = 0,78Eine Post-ERCP Pankreatitis bestand in 4,1 % der Patientenkohorte, unabhängig von bestehender oder fehlender Statineinnahme: 3,9 % vs. 4,2 %, p = 0,98Die Inzidenz einer Hyperlipasämie sowie post-ERCP Pankreatitis war zwischen den Patienten unter Statintherapie und ohne Statintherapie unabhängig von einer NSAR Einnahme vergleichbar.

SCHLUSSFOLGERUNG Eine chronische Statineinnahme war unabhängig von einer NSAR-Einnahme nicht mit einer Hyperlipasämie und einer post-ERCP Pankreatitis assoziiert.

P32 Seltene Ursache eines schweren enteralen Eiweißverlustsyndroms

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Einleitung Die 1986 erstmals von Haot et.al beschriebene lymphozytäre Gastritis ist ein sehr seltenes Krankheitsbild. Histologisch sind pro 100 Epithelzellen mehr als 25 intraepitheliale Lymphozyten nachweisbar, bevorzugte Lokalisation ist der Magencorpus und -fundus.

Fallbericht Eine 33jährige Patientin stellte sich im März 2021 an unserer Abteilung aufgrund einer ausgeprägten Hypalbuminämie verbunden mit abdominellen Beschwerden, Diarrhoe, Ödemen an der unteren Extremität bds., sowie einer Eisenmangelanämie vor. Aufgrund einer Campylobacter jejuni Infektion Einleitung einer Antibiose mit Klacid. Weitere zahlreiche Abklärungen, inkl. Immunologie, HIV-Test und Yamshidipuntion, MR Abdomen und Enterographie erfolgten mit negativem Befund bis auf eine geringe Erhöhung der ds-DNA-Antikörper. Eine hämato-onkologische Grunderkrankung, AL-Amyloidose und ein Immunglobulinmangel wurden ausgeschlossen, ebenso das Vorliegen einer chronisch entzündlichen Darmerkrankung, mikroskopischen Colitis, Zöliakie und eines Morbus Whipple . Kapselendoskopisch V.a. segmental intestinale Lymphangiektasien daher Push and Pull Enteroskopie wobei eine intestinale Lymphangiektasie nicht bestätigt werden konnte. Nebenbefundlich auffällig waren jedoch sehr prominente Magenfalten, die histologisch einer corpus-dominanten lymphozytären Gastritis entsprachen. In Zusammenschau aller Befunde und aufgrund publizierter Fallberichte wurde die Verdachtsdiagnose eines schweren enteralen Eiweißverlustsyndroms bei bestehender lymphozytären Gastritis gestellt und eine Eradikationstherapie mit Pylera trotz fehlendem Nachweis von Helicobacter pylori (molekularpathogenetisch, serologisch, im Stuhl) sowie eine hochdosierte PPI Therapie begonnen. In den nachfolgenden klinischen Kontrollen

präsentierte sich die Patientin vollkommen beschwerdefrei mit Normalisierung des Serumalbumins und der übrigen Begleitbeschwerden.

Diskussion Die lymphozytäre Gastritis ist eine sehr seltene Form der chronischen Gastritis mit noch nicht genau geklärter Ätiopathogenese, jedoch vermehrter Assoziation mit Zöliakie, Lymphomerkrankungen, Helicobacter pylori und auch Medikamenteneinnahme. Die Therapie besteht in einer H.p. Eradikation. In unserem Fall konnte ein bis dahin ungeklärtes Eiweißverlustsyndrom ursächlich zugeordnet und durch eine entsprechende Eradikationstherapie zufriedenstellend behandelt werden.

P33 Einfluss von Inflammation auf zelluläre und systemische Pharmakokinetik von Tofacitinib

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Hintergrund Die Wichtigkeit vom JAK/STAT Signalweg in Bezug auf Entzündungskrankheiten führte zur Entwicklung niedermolekularer JAK Inhibitoren. Tofacitinib wurde bereits 2018 für die Behandlung von Colitis Ulcerosa zugelassen. Dennoch gibt es weiterhin offene Fragen zum Mechanismus von Tofacitinib insbesondere in Bezug auf eine mögliche zellspezifische Selektivität und der Pharmakokinetik in Abhängigkeit vom zellulären Aktivierungsstatus.

Methodik Um den Effekt und die Pharmakokinetik von Tofacitinib zu untersuchen wurden 6-8 Wochen alte BALB/c Mäuse im DSS Colitis Modell im therapeutischen Setting mit 2x tgl. Tofacitinib oder Vehicle behandelt. Anschließend wurde Darmgewebe, Serum, Harn und Stuhl entnommen und mittels LC-MS/MS der Tofacitinibspiegel quantifiziert. Weiters, wurden PBMCs aus Vollblut von gesunden Spendern isoliert. Diese wurden entweder sofort oder nach Vorstimulation mit Tofacitinib behandelt. Für die Analyse der ENTs wurden zu beiden Gruppen ENT Inhibitoren dazugeben. Die intrazelluläre Tofacitinib Konzentration wurde mittels LC-MS/MS bestimmt.

Ergebnisse Hier konnten wir mittels LC-MS/MS Tofacitinib in Serum und Darmgewebe quantifizieren und fanden erhöhte Tofacitinibspiegel im Serum und im Ileum von DSS behandelten Mäusen. In humanen PBMCs konnten wir einerseits nachweisen, dass die Tofacitinibaufnahme variiert und, dass bei LPS stimulierten Zellen signifikant mehr Tofacitinib aufgenommen wird. Dies konnten wir auf eine erhöhte Expression von ENTs in stimulierten Zellen zurückführen und durch ENT Inhibitoren wieder auf die Ausgangswerte normalisieren.

Conclusio Wir konnten zeigen, dass Tofacitinib die Entzündung im DSS Modell verringert und die Aktivierung von Th1, Th2 und Th17 Zellen stört. Unsere Daten zeigen eine starke Korrelation von Tofacitinib Serumspiegel mit der Schwere der Erkrankung im DSS Colitis Model. Zudem schlagen wir einen neuartigen Mechanismus für die Aufnahme von Tofacitinib in die Zelle, der entzündungsabhängig ist, an ENTs gekoppelt ist und durch die Blockade mittels spezifischer Inhibitoren reversible ist. Aufgrund der starken Variation in der Aufnahme von Tofacitinib könnte hiermit die Dosis von Tofacitinib an Patienten angepasst und somit Nebenwirkungen potenziell vermieden werden.

P34 Diarrhoe mit metabolischer Alkalose - gibt es nicht? Gibt es! Ein Fallbericht

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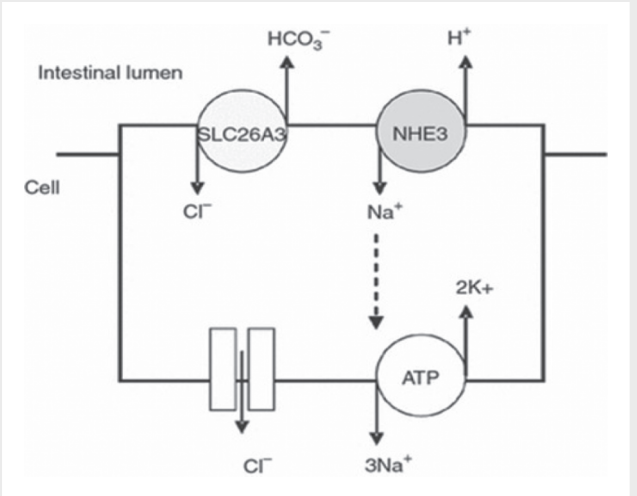
Hintergrund: Bei der kongenitalen Chloriddiarrhoe handelt es sich um eine seltene Resorptionsstörung, welche durch eine lebenslange wässrige Diarrhoe mit metabolischer Alkalose charakterisiert ist [1]. Die Inzidenzschätzungen variieren von 1:30 000 (Finnland) bis 1:500 000 (Deutschland) - 250 berichtete Fälle bis 2010 [3]. Durch die Mutation des Cl-/HCO3- Austauschers SLC26A3 kommt es zu einer fehlenden intestinalen Cl- Absorption und konsekutiven Störung des gekoppelten Na+/H+ Austauschers was einen intestinalen Flüssigkeits,- und NaCl Verlust bedingt [4]. Unbehandelt kommt es physiologischer Weise zur Aktivierung des RAAS Systems, wobei letztlich der Hyperaldosteronismus die klinisch vordergründige Hypokaliämie bedingt [3]. Erste Symptome können bereits intrauterin in Erscheinung treten, sodass eine pathologische Fruchtwasservermehrung oder erweiterte Darmschlingen erste Hinweise auf eine mögliche Erkrankung sind [2]. Bei adäquater Elektrolytsubstitution ist eine weitgehend normale körperliche als auch geistige Entwicklung möglich [3] Fallbericht: Bei einem heute 19-jährigen männlichen Patienten wurde im Laufe des 2Lj. und nach vorangegangener Ileocoekalresektion (Fehldiagnose) eine Chloriddiarrhoe diagnostiziert. Neben anhaltenden Durchfällen sind vor allem schwere Hypokaliämien im Rahmen sportlicher Betätigung und gastrointestinaler Infekte vordergründig. Eine adäquate orale Elektrolytsubstitution in Kapselform und als Holmberg Lösung sowie parenterale Infusionstherapien im Rahmen von Entgleisungen, ermöglichten eine altersentsprechende Entwicklung. Ein Therapieversuch mittels PPI (Suppression gastraler Chlorid Exkretion) konnte aufgrund einer Unverträglichkeit nicht fortgeführt werden. Diskussion: Genannter Fallbericht illustriert eine seltene aber nicht minder anspruchsvolle Herausfordernung der Gastroenterologie [3]. Der Basisbedarf von Cl- 3-4 mmol/kg/d bei Erwachsenen sollte durch eine Substitution mit gleichen Anteilen NaCl und KCl gewählt werden [1,4]. Mit Hilfe des Harnchlorid (>30mmol/L) kann die Therapie überprüft und angepasst werden [1,4]. Konklusion: Dieses Beispiel zeigt, dass eine anhaltende Diarrhoe in seltenen Fällen auch mit einer metabolischen Alkalose und nicht zwangsläufig mit einer hyperchlorämische Azidose einhergehen kann. Entsprechende Klinik (wässrige Diarrhoen, Hypokaliämien und Dehydratation) sowie stark erhöhter Cl- Gehalt des Stuhles sind in den meisten Fällen für eine Diagnose ausreichend [1].



▶ **Abb. 1**

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P35 Autosomal Dominant Familial Intestinal Varicosis and Polyposis coli is associated with Pathogenic Variants in *NKX2.3*

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Familial idiopathic intestinal varicosis (FIIV) is a rare entity, characterized by distention and elongation of submucosal veins of the small bowel and/or the colon. The symptoms include rectal bleeding, abdominal pain and diarrhea. Asymptomatic cases were also reported as incidental findings on screening colonoscopy, which likely renders underreporting. FIIV is characterized by colonic and intestinal varices in the absence of portal hypertension. Recently, a single family with dominant inheritance of FIIV associated with a pathogenic variant in *NKX2-3* was reported. *NKX2-3* is a homeobox containing transcription factor and essential for embryonic development and the maintenance of differentiated tissue functions, especially in the intestine.

Here we report a family affected by FIIV and the detection of a 29bp deletion causing a frameshift and premature stop codon predicted to result in a truncated NKX2-3 protein (NM_145285.2:c.899_927del, p.Gly300Aspfs*75). Investigation of the family members showed segregation of the endoscopic phenotype of intestinal varices with the novel dominant *NKX2-3* mutation. The index patient presented with moderate abdominal bloating and intermittent diarrhea at the age of 38 years. On colonoscopy, colonic polyposis and large intestinal varices were found. Additional investigation of liver stiffness, ultrasound and magentic resonance imaging showed no signs of chronic liver disease or portal hypertension, and no esophageal varices were present on upper gastrointestinal endoscopy. Histological examination of the colonic polyps revealed normal epithelial cells and expansion of the lamina propria with marked proliferation of capillaries in most polyps. In few of the removed polyps low grade dysplasia was also present.

The present study shows an association between a truncating variant in *NKX2-3* and colonic varicosis in a large family. This is the second variant reported in NKX2-3, and as the previous NKX2-3 variant, it is expected to result in haploinsufficiency. The co-occurrence of polyposis coli broadens the phenotypic spectrum of NKX2-3-associated disease.

P36 Covid-19 and gastrointestinal manifestations: A retrospective cohort study

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Background and Aim Although patients with COVID-19 most commonly present with respiratory symptoms, the GI tract has been found to be affected in many COVID-19-patients. This retrospective cohort study aims to assess the prevalence and the characteristics of gastrointestinal symptoms in hospitalized COVID-19 patients.

Material and Methods We retrospectively analyzed 405 hospitalized patients with confirmed COVID-19 from 2 hospitals located in Graz, Austria from February 28 to May 30, 2020. The patients' medical charts were reviewed for the presence of GI symptoms (diarrhea, nausea or vomiting, anorexia, abdominal pain, constipation, blood in stool) and analyzed with respect to gender, age, intensive care requirement, duration of hospitalization, and mortality.

Results This study cohort included 405 patients with a median age of 76 years (95 % CI 75;78) and 191 (47.2 %) males. Among 405 patients 80 (19.8 %) presented with at least one GI symptom, with diarrhea being the most commonly described (n = 40, 9.9 %). Men (5.2 %) were significantly more likely to have abdominal pain than women (1.4 %; p = 0.045), whereas blood in stool was more frequently reported in women (2.8 % versus 0.0 % in men; p = 0.032) Younger patients (<65 years) were more frequently affected by diarrhea and abdominal pain. Individuals with diarrhea were significantly more likely to require intensive care treatment (22.5 % versus 11.5 % in patients without diarrhea, p = 0.047). However, diarrhea (p = 0.004) as well as GI symptoms in general (p<0.0001) were associated with lower mortality.

Conclusion GI symptoms in COVID-19 are common and the presence of diarrhea was associated with a high risk of requiring intensive care but with significantly lower mortality. This apparent paradox may be due to the fact that younger patients were more often affected by GI symptoms and might have received ICU treatment more often.

P37 Landscape of biomarkers and actionable gene alterations in adenocarcinoma of GEJ and stomach - A real-world data analysis

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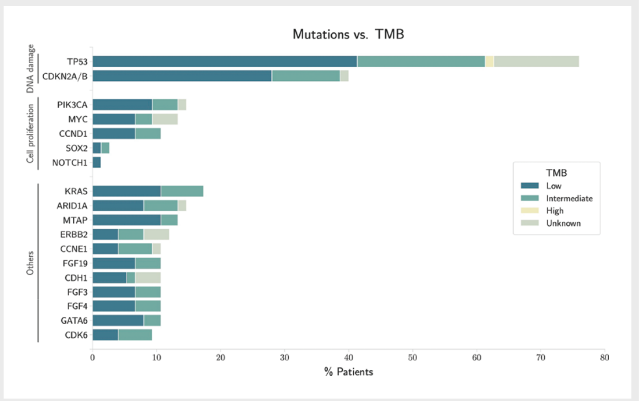
After a long period of therapeutic stagnation, a significant breakthrough in the treatment of adenocarcinomas of the gastroesophageal junction (GEJ)



►**Abb. 1**

and stomach (GC) is now becoming evident with the implementation of Her2neu-based targeted therapies (trastuzumab and trastuzumab-deruxtecan) and the use of PDL1 checkpoint inhibitors (nivolumab, pembrolizumab). The required companion diagnostics regarding Her2neu overamplification or PDL1 expression are performed protein-based by immunohistochemistry (IHC) or additionally by in situ hybridization (FISH) in case of a Her2neu score of 2+.However, there are investigator-dependent differences in the assessment of Her2neu overamplification and in PDL1 scores obtained by IHC/FISH. The investigator-dependent differences could occur due to the quality of the tumor sample, the heterogeneous antigen expression of the biopsy, or the interpretation of the data. The use of high-throughput technologies such as next generation sequencing (NGS) has the potential to standardize the analyses and thus make them more comparable.In the presented study, we analyzed real-world multigene sequencing data from 75 patients diagnosed with GEJ and GC. We compared the results of conventional Her2neu diagnostics (IHC and FISH) with NGS findings of ErbB2 overamplification. Furthermore, we correlated the results of microsatellite instability (MSI) and tumor mutation burden (TMB) analyses by NGS with PDL1 protein expression (CPS) in IHC. In addition, several other potential therapeutic targets in GEJ and GC have been reported in the literature, such as the PI3K/Akt/mTOR pathway (potential drug of RADPAC trial: everolimus), c-MET gene variants (potential drug: c-MET inhibitor: tivantinib), EGFR family gene variants (ErbB-1/HER1, ErbB-2 (new, HER2), ErbB-3 (HER3) and ErbB-4 (HER4)). In our study we show the distribution of potentially actionable gene variants based on our real-world data.

Keywords: GEJ, GC, Next Generation Sequencing, Her2neu, PD-L1

P38 Bone marker response to intravenous iron treatment - an *in vitro* model

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Background Iron deficiency is the most frequent cause of anemia in Europe. Treatment of iron deficiency requires supplementation with oral or intravenous (i.v.) formulations of the metal. Over 50 % of patients treated with the i. v. formulation ferric carboxymaltose (FCM) develop hypophosphatemia, which appears not to be a class effect, but specific to this drug. Repeated dosing with FCM can even result in severe complications including muscle weakness, bone fractures and osteomalacia.

Methods We identified a retrospective cohort of 81 patients treated with FCM or ferric derisomaltose (FDI) with serum phosphate concentrations measured before and after iron therapy. Biochemical markers of bone turnover and mineral metabolism were analyzed in stored serum samples in a subgroup of 34 patients. An *in vitro* osteogenic differentiation model was established, using the osteoblastic MC3T3E1 cells. The effect of exposure to i.v. iron on osteogenic differentiation was investigated by qRT-PCR for bone marker gene expression, Alizarin Red S- and Masson Gold Trichrome staining.

Results Hypophosphatemia developed in 13 of 29 FCM treated patients (45 %), and 0 of 5 patients treated with IIM with stored serum samples available. At baseline, mean procollagen type 1 N-terminal propeptide (P1NP) concentration was significantly lower in patients developing hypophosphatemia when compared to those not developing hypophosphatemia (31.7 vs 88.7 ng/ml; $p = 0.032$). In both subgroups, P1NP further decreased after FCM treatment. The same pattern was found for carboxy-terminal collagen cross-links (CTX) at baseline, which did not decrease after FCM treatment. These findings were replicated in a MC3T3E1 cell model, where impaired osteogenic differentiation was found when cultivated in the presence of i.v. iron formulations.

Conclusion I.v. iron induced hypophosphatemia can result in a dysregulation of bone markers similar to steroid induced osteoporosis and appears to reduce bone turnover. These changes can be reproduced in an *in vitro* model of osteogenic differentiation.

P39 Zöliakie: vom Symptom zur Diagnose

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Hintergrund und Methoden Wir beschäftigten uns mit der Krankheit Zöliakie und diese wurde zum Thema meiner Masterarbeit. Die Zöliakie kann sich mit einer Vielfalt an Symptomen in unterschiedlichen Formen präsentieren - sie wird deshalb als‚Chamäleon der Inneren Medizin" bezeichnet. Das macht sie ebenso spannend wie schwierig zu diagnostizieren.

Zöliakie-PatientInnen unseres Klinikums wurden gebeten, an einer Fragebogenstudie zu Symptomatik, Diagnostik und Lebensqualität teilzunehmen.

Ergebnisse Insgesamt haben 57 von 74 kontaktierten PatientInnen an der Studie teilgenommen. Die häufigsten Erstsymptome sind: Eisenmangel (33), Abdominalschmerz (31), Gewichtsverlust (30) und chronische Diarrhö (28). 65 % empfinden die Symptome als belastend oder sehr belastend.

Die Patientengruppen mit Diarrhö und Obstipation wurden miteinander verglichen: 72 % haben mindestens eines der beiden als Erstsymptom angegeben. Die Zeit zwischen Symptomeintritt und Diagnosestellung beträgt bei PatientInnen mit dem Symptom Diarrhö bei 69 % weniger als 12 Monate. Bei PatientInnen mit Obstipation werden hingegen nur 33 % innerhalb von 12 Monaten diagnostiziert.

In einem Fall wies eine Patientin als einziges Symptom eine Depression auf - die Diagnosezeit betrug 516 Monate.

Bei 46 % ist Hafer ein Ernährungsbestandteil. 61 % geben eine Lebensqualitätsverbesserung nach Diagnosestellung an, 21 % fühlen sich durch die glutenfreie Diät belastet. Nur 30 % nehmen den steuerlichen Absetzbetrag in Anspruch, obwohl 46 % die Mehrkosten belasten. Ein Patient besucht regelmäßig eine Selbsthilfegruppe.

Conclusio In unserem Kollektiv wurden PatientInnen mit Obstipation und atypischen Symptomen verzögert diagnostiziert. Die Umfrage brachte mehr Fragen als Antworten: Warum erleben so viele PatientInnen keine Verbesserung der Lebensqualität? Wieso ist Hafer so oft Bestandteil der glutenfreien Ernährung? Warum nützen so wenige steuerliche Absetzmöglichkeiten? Wieso werden Selbsthilfegruppen trotz Belastung kaum in Anspruch genommen?

Die vorliegenden Umfrageergebnisse könnten uns zur Hypothesengenerierung für zukünftige Studien dienen, um durch Identifikation von Fehlerquellen eine Verbesserung für die PatientInnen zu bewirken.

P40 Gastroenterologist against the machine - opportunities and limitations of machine learning models for prediction of advanced adenoma

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DOI 10.1055/s-0041-1734270

Background & Aims Screening for colorectal cancer (CRC) relies on colonoscopy and/or fecal occult blood test while other (non-invasive) risk-stratification systems have not been implemented into European guidelines. Here, we evaluated the potential of Machine Learning (ML) methods to optimize prediction of advanced adenoma (AA).

Patients & Methods 5862 individuals participating in a screening program for colorectal cancer were included after excluding patients with history of CRC, symptomatic patients and those with insufficient colonoscopy. Adenoma were diagnosed histologically with AA being ≥1cm in size, or high-grade dysplasia/ villous features being present. Clinical, laboratory and lifestyle parameters were assessed at the time of colonoscopy. Logistic regression (LR) and extreme gradient boosting algorithms (XGBoost) were evaluated for AA-prediction based on readily-available laboratory/clinical/lifestyle parameters. The dataset was divided into a derivation cohort (for model development and internal cross-validation) and an external validation cohort.

Results The mean age was 58.7±9.7 years with 2811 males (48.0 %). 1404 (24.0 %) suffered from obesity (BMI≥30kg/m^2), 871 (14.9 %) from diabetes, and 2095 (39.1 %) from the metabolic syndrome. Any adenoma was detected in 1884 (32.1 %) and any AA in 437 (7.5 %). 659 individuals (11.2 %) had a first-degree relative with a history of CRC. Modelling 36 laboratory parameters, 8 clinical parameters and data on 8 food types/dietary patterns, a moderate accuracy to predict AA with XGBoost (AUC of 0.66-0.68) and LR (AUC of 0.65-0.66) could be achieved. Limiting variables to established risk factors for AA did not significantly improve performance. Also, subgroup analyses in subjects without genetic predisposition or gender-specific analyses showed similar results.

Conclusion ML, based on point prevalence laboratory and clinical information, does not accurately predict AA. Non-invasive risk-prediction seems insufficient to replace current CRC screening programs. However, the potential for sequential application before colonoscopy to increase pre-test probability warrants further investigation.

P41 Risk factors for and effects of persistent and severe hypophosphataemia following ferric carboxymaltose: Secondary analysis of randomised clinical trials

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DOI 10.1055/s-0041-1734271

Background Hypophosphataemia complicated by osteomalacia and fractures has been reported as an adverse effect of certain intravenous iron formulations.

Methods In this secondary analysis of pooled data from two identically designed, open-label, randomised clinical trials that compared the incidence of hypophosphataemia following treatment with ferric carboxymaltose (FCM) versus ferric derisomaltose (FDI), we investigated risk factors for hypophosphataemia – incident (serum phosphate <2·0 mg/dL); severe (≤1·0 mg/dL); persistent (<2·0 mg/dL on day 35) – and associated changes in bone and mineral metabolism.

Findings FCM was the only consistent risk factor for incident hypophosphataemia (odds ratio versus FDI: 38·37; 95 % confidence interval [CI]: 16·62, 88·56; p<0·001), and for the magnitude of maximal decrease in serum phosphate (–1·08 mg/dL; 95 % CI: –1·22, –0·94; p<0·001). Only FCM-treated patients developed severe hypophosphataemia (11·3 %; 13/115) or persistent hypophosphataemia (40·0 %; 46/115). More severe hypophosphataemia was associated with significantly greater changes in intact fibroblast growth factor-23 (iFGF23), parathyroid hormone (PTH), alkaline phosphatase, 1,25-dihydroxyvitamin D (1,25(OH)$_2$D) and ionised calcium levels (all p<0·05). Persistent versus resolved hypophosphataemia was associated with significantly greater changes in iFGF23, PTH, 1,25(OH)$_2$D and N-terminal procollagen-1 peptide levels (all p<0·01); alkaline phosphatase increased to a similar extent after FCM regardless of whether hypophosphataemia persisted or resolved.

Interpretation Besides treatment with FCM, no other factor consistently predicted increased risk for hypophosphataemia. Patients who developed more severe or persistent hypophosphataemia after treatment with FCM manifested more severe derangements in bone and mineral metabolism, which may help explain the association of FCM with osteomalacia and fractures.

Funding Pharmacosmos A/S.

P42 Heart rate variability in patients with irritable bowel syndrome before and after gut-directed hypnotherapy: a preliminary study.

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Objective The Autonomous Nervous System (ANS) is an important route of brain-gut communication. Aberrant ANS functioning, reflected in abnormalities in Heart Rate Variability (HRV) has been described in irritable bowel syndrome (IBS). Gut-directed hypnotherapy (GHT) leads to symptom reductions in IBS and is supposed to increase parasympathetic regulation. To date, the role of therapeutic modulation of the ANS through GHT has been rarely examined. Aim of this pilot study was to assess the impact of GHT on ANS functioning as reflected in HRV.

Methods Nine patients (8 female, 1 male, Mean age 46,8 years) with IBS (Rome IV criteria) were assessed via 24h-electrocardiogram before and after 10 sessions GHT, administered in groups. Time and Frequency measures of HRV were extracted as indicators of ANS regulation. Questionnaires were utilized to assess IBS symptoms (IBS-SSS) and psychological distress (HADS-D).

Results No significant change in HRV measures was detectable after GHT (all p's>.52). Trends of lowered standard deviation of the normal-to-normal interval (SDNN) (157,2 [125; 170,9] vs. 145,1 [108,4; 160,3]) and high frequency power (HF) (2,83 [2,61; 2,84] vs. 2,56 [2,23; 2,70]) indicated reduced HRV and vagal activity after hypnosis. Courses of HRV indices were either increasing (4 patients) or decreasing sharply (5 patients) with no overlap. IBS symptoms (254 ± 78,7 vs. 190,0 ± 85,7, p = .026) and psychological distress (Anxiety 9,50 ± 2,07 vs. 6,36 ± 3,25, Depression 7,63 ± 3,07 vs. 5,29 ± 2,50, p = .038 respectively) decreased significantly in the whole sample.

Conclusion While HRV remained relatively stable overall, the courses of HRV pre-post therapy were either increasing or decreasing, with two distinct clusters of patients. Symptom improvements were observed in the majority of patients, possibly pointing a more psychological impact of GHT. Better powered studies are warranted to examine the effects of hypnosis on HRV in IBS.

P43 Beeinflussung des intestinalen Mikrobioms durch ein Extrakt der schwarzen Holunderbeere - Ergebnisse der ELDERGUT Studie

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Hintergrund Das intestinale Mikrobiom ist ein zentraler Faktor für die Aufrechterhaltung der menschlichen Physiologie aber auch treibender Faktor verschiedenster Erkrankungen. Die Beeinflussung des Mikrobioms kann potentiell tiefgreifende positive Effekte auf verschiedenste pathophysiologische Zustände erzielen. Ein möglicher Weg zur Formung des Mikrobioms sind präbiotische Interventionen. Dabei ist die Effektivität solcher Interventionen stark von der vorliegenden Mikrobiomkonfiguration insbesondere in Hinblick auf vorhandene biochemische Enzymfunktionen abhängig. Eine bessere Charakterisierung der Faktoren, die die Wirksamkeit von Präbiotika beeinflussen ist daher notwendig. Das Ziel dieser Studie war es, solche für die Interaktion eines Extrakts des schwarzen Holunders mit dem Mikrobiom und der Wirtsphysiologie zu untersuchen. Dieses Extrakt hat einen hohen Gehalt an präbiotisch wirksamen Polyphenolen.

Methodik Die ELDERGUT-Studie wurde als longitudinale Kohortenstudie mit 30 gesunden TeilnehmerInnen und 3 Phasen zu je 3 Wochen konzipiert. Vor der Interventionsperiode erfolgte eine 3-wöchige detaillierte Charakterisierung der Teilnehmer, im Anschluss an die Intervention eine zusätzliche 3-wöchige Wash-out Phase. Die TeilnehmerInnen beantworteten wöchentliche Fragebögen zu intestinalen Symptomen und sammelten biologische Samples (Stuhl, Urin, Blut). Das intestinale Mikrobiom wurde mittels 16S-Amplicon-Sequenzierung aus fäkaler bakterieller DNA metagenomisch sowie mit NMR Spektroskopie metabolisch charakterisiert.

Ergebnisse In den klinischen Fragebogenerhebungen zeigte sich kein relevanter Effekt der Intervention auf gastrointestinale Symptome. Die metagenomische Analyse des Mikrobioms zeigte jedoch starke Anstiege der a-Diversität zu Beginn und nach Ende der präbiotischen Intervention. Ein ähnliches Muster zeigte sich auch für die beta-Diversität im Vergleich der 9 Studienwochen (unweighted unifrac index). Auf dem Genus-Level wurde dies von Veränderungen mehrerer Taxa wie beispielsweise Lactobacillus und Akkermannsia reflektiert.

Schlussfolgerung Die ELDERGUT-Studie zeigt somit einen unmittelbaren Effekt der präbiotischen Intervention mit einem Extrakt des schwarzen Holunders. Dabei kommt es initial zur Störung der vorhandenen Mikrobiomkonfiguration, im Anschluss scheinen gegenregulatorische Mechanismen schnell zur Etablierung eines neuen stabilen Equilibriums beizutragen. Dies ist begleitet von Veränderungen der taxonomischen Zusammensetzung und des metabolischen Outputs des Mikrobioms.

P44 Epidemiological overview of chronic pancreatitis in the northeast of Austria

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Background Chronic pancreatitis is a heterogenous disease and isn´t easy to diagnose. There is no potential cure and treatment is a challenging issue. Malnutrition, exocrine and endocrine insufficiency and pain relief are the leading treatment targets. Pancreatic carcinoma should be detected in its early stages. From our collective in Northeast Austria, we tried to list different risc factors and markers for chronic pancretitis.

▶**Tab. 1** alcohol consumption according M-ANNHEIM classification

None	moderate	increased	excessive	No valid data
17	11	9	6	10

Methods In our outpatient clinic for pancreatic diseases in St. Pölten, we established a registry for pancreatitis in 2018. After informed consent we acquired basic data such as etiology, different risc factors, laboratory findings and interventions.

Results Between November 2018 and March 2020 we were able to collect data from 53 patients. 42 male patients and 11 female patients were registered. 17 patients suffered from exocrine insufficiency. 12 patients had a pancreatitis related diabetes mellitus. Mean HbA1C was at 6.6 %, the highest level was at 11.5 %. In most patients multiple risc factors occurred. A majority had a history of smoking. Only 12 patients didn´t smoke. 19 patients even had a history of >25py.

Conclusion Many patients were already suffering from long term consequences of the disease, such as endocrine and exocrine insufficiency or malnutrition.In our collective chronic pancreatitis was more often diagnosed in male than in female. 44 patients have more than one risc factor. The most common risc factors were alcohol abuse and smoking. Our aim is to make aware that chronic pancreatitis is a complex disease and in most cases it could be diagnosed earlier. Wa want to give regular updates from our collective in northeast of Austria.

P45 COVID-19 Vakzin induzierte B- und T-Zell-Antwort bei medizinischen Fachkräften mit und ohne vorherige SARS-CoV-2 Infektion

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Hintergrund In den letzten Monaten erkrankten zahlreiche medizinische Fachkräfte am Arbeitsplatz an COVID-19, was zu einem erheblichen Mangel an medizinischem und pflegerischem Personal führte. Wir untersuchten, wie sich eine vorherige SARS-CoV-2 Infektion auf die COVID-19 Vakzin Immunologie auswirkt und wie solche Erkenntnisse Impfstrategien modifizieren können.

Methodik In einer Kohorte von 41 medizinischen Fachkräften mit (n = 14) und ohne (n = 27) vorangegangener SARS-CoV-2-Infektion untersuchten wir den Immunstatus vor, während und nach der Impfung mit BNT162b2. Die humorale Immunantwort wurde durch Rezeptorbindungsdomänen (RBD)-ELISA und verschiedene SARS-CoV-2-Neutralisationsassay unter Verwendung von Wildtyp- und Pseudotypviren analysiert. Die T-Zell-Immunität gegen das SARS-CoV-2 Spike- und Nukleokapsid-Protein wurde mit Interferon gamma release assays und intrazellulärer Durchflusszytometrie untersucht. Impfbezogene Nebenwirkungen wurden erfasst.

Ergebnisse Eine vorangegangene SARS-CoV-2 Infektion führte zu einem verstärkten Impfansprechen sowohl im B- als auch im T-Zell-Kompartiment. Bei Geimpften mit COVID-19 Historie induzierte die erste Teilimpfung hohe Antikörperkonzentrationen, die mit denen von seronegativen Geimpften nach zwei Teilimpfung vergleichbar waren. Dies führte zu einer effizienteren Neutralisation von Viruspartikeln, die noch ausgeprägter war, als von den RBD-ELISA-Ergebnissen erwartet. Darüber hinaus waren die T-Zell-Antworten bei

Rekonvaleszenten stärker und besonders stark gegen das SARS-CoV-2-Nukleokapsidprotein.

Interpretation Wir bestätigen jüngste Erkenntnisse, die darauf hindeuten, dass bei Rekonvaleszenten eine Impfstoffdosis ausreichet, um einen adäquaten Schutz gegen SARS-CoV-2 zu induzieren. Neue Spike-mutierte Virusvarianten machen das hochkonservierte Nukleokapsid-Protein - das eine starke SARS-CoV-2-spezifische T-Zell-Immunität hervorruft - zu einem interessanten zusätzlichen Impfstoffziel.

Hepatologie

P46 Von Willebrand Factor (VWF) propeptide levels are similarly accurate for assessing portal hypertension as compared to VWF antigen

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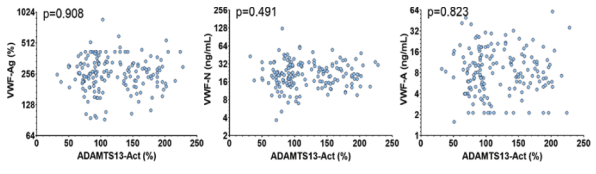
Background & Aims Endothelial dysfunction is an important mechanism contributing to portal hypertension (PH) in advanced chronic liver disease (ACLD) and is reflected by increased von Willebrand factor antigen (VWF-Ag) levels. This study aimed to elucidate VWF-release (by measuring its propeptide; VWF-N) and -cleavage (by measuring its ADAMTS13-processed form; VWF-A) as well as their association with PH severity.

Methods Levels of VWF-Ag and VWF-N/VWF-A were assessed in 229 patients with ACLD (hepatic venous pressure gradient [HVPG] ≥6mmHg) undergoing HVPG measurement in the absence of bacterial infections or acute decompensation. Furthermore, ADAMTS13 activity (ADAMTS13-Act; the main VWF-cleaving protease) and VWF activity (VWF-Act) were analysed in a subgroup of patients (n = 166).

Results VWF-Ag levels significantly correlated with HVPG (Spearman's ρ=0.374, p<0.001), similar to VWF-N (ρ=0.334, p<0.001). VWF-N was strongly associated with VWF-Ag (ρ=0.627, p<0.001), whereas VWF-A exhibited weak correlations with VWF-Ag (ρ=0.207, p = 0.002) and HVPG (ρ=0.181, p = 0.006). VWF-Ag and VWF-N were similarly accurate for identification of clinically significant PH (HVPG ≥10mmHg; AUROC 0.804 for VWF-Ag; 0.768 for VWF-N; both p<0.001). Interestingly, ADAMTS13-Act was not associated with PH severity or disease stage, and exhibited no significant correlation with VWF-Ag, VWF-N, and VWF-A **(Figure)**, respectively. VWF-Act strongly reflected VWF-Ag levels (ρ=0.874, p<0.001), but showed comparatively weak association with VWF-A (ρ=0.297, p<0.001). VWF-Act/-Ag ratio was not linked to PH or disease stage, but correlated negatively with ADAMTS13 activity (ρ= -0.256, p<0.001).

Conclusion In patients with ACLD, VWF-Ag levels and its propeptide are more suitable surrogates of PH than ADAMTS13-cleaved VWF-A. ADAMTS13-Act is not related to disease severity under clinically stable conditions and VWF-A levels are rather dependent on the amount of circulating VWF than ADAMTS13-Act. VWF-Ag levels reflect VWF-Act in vitro, but VWF-Act appears to be decreased with increasing ADAMTS13-Act.



▶ **Abb. 1**

P47 The link between bacterial translocation, systemic inflammation, and circulatory dysfunction in cirrhosis

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Background&Aims Experimental data suggest that in advanced chronic liver disease (ACLD), bacterial translocation (BT) occurring due to impaired intestinal barrier integrity promotes systemic inflammation, portal hypertension, and circulatory dysfunction. This study aimed to assess the impact of BT in clinically stable ACLD patients.

Methods Two-hundred-and-forty-nine patients with ACLD (absence of acute decompensation or bacterial infections) undergoing hepatic venous pressure gradient (HVPG) measurement were prospectively recruited. Serum levels of BT markers (lipopolysaccharide[LPS], lipoteichoic acid[LTA], and bacterial DNA[bactDNA]), measures of systemic inflammation (CRP, IL-6, IL-10, TNF-α, procalcitonin, and LPS binding protein[LBP]), and indicators of circulatory (dys-)function (heart rate[HR], mean arterial pressure[MAP], as well as serum levels of renin and copeptin), were assessed. Disease stage was determined according to EASL guidelines **(Table)**.

Results The cohort included 110(44 %) patients with compensated ACLD (cACLD) and the median HVPG was 18(12-21)mmHg**(Table)**. LPS correlated strongly with LTA(Spearman's ρ = 0.931,p < 0.001) and both were higher in the presence of bactDNA(defined as > 5pg/mL;LPS 0.41[0.20-0.63] vs. 1.37 [1.16-1.84]EU/mL;LTA 26.3[17.7-36.5] vs. 162[95.0-293]pg/mL;all p<0.001). BT markers were similar across disease stages(all p > 0.05;**Table**), showed no clear correlation to HVPG or MELD, and were not associated with CRP, IL6, and procalcitonin(all p > 0.05). TNF-α and IL10 displayed strong correlations with LPS(ρ = 0.906/ρ = 0.546), LTA(ρ = 0.865/ρ = 0.556), and presence of bactDNA(TNF-α 10.6[6.70-14.5] vs. 38.5[29.7-45.1]pg/mL; IL10 10.5[7.73-13.1] vs. 17.6[13.7-20.5]pg/mL;all p<0.001), respectively. LPS(ρ = 0.143; p = 0.034) and LTA(ρ=0.205,p = 0.002) correlated weakly with copeptin levels, but not with HR, MAP, or renin(all p > 0.05). During a median FU of 14.7 (8.20-26.5) months, BT markers (in contrast to HVPG and IL-6) were unable to predict decompensation or liver-related death(Cox regression;all p > 0.05).

Conclusion BT may occur earlier and independently of decompensation, triggering an antigen-mediated systemic inflammatory response that is not present in patients without BT. However, the correlation between systemic inflammation and disease stage, portal hypertension and circulatory dysfunction in our cohort of clinically stable patients seems to be mainly rendered by the liver damage-derived response rather than BT.

P48 Immunoglobulin subtypes and complement levels exhibit distinct dynamics across advanced chronic liver disease stages and predict first or further decompensation

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Background and Aims Cirrhosis-associated immune dysfunction has been described to occur in advanced chronic liver disease(ACLD), but underlying mechanisms remain poorly defined. Complement factors and

Definition	Compensated ACLD(n = 110)			Decompensated ACLD(n = 139)			P-value
	Stage 0 (n = 24) HVPG 6-9	Stage 1 (n = 31) HVPG ≥10	Stage 2 (n = 55) Varices	Stage 3 (n = 12) Bleeding	Stage 4 (n = 68) Non-bleeding decompensation	Stage 5 (n = 59) Further decompensation	
Age (years)	53 (45-65)	59 (52-69)	61 (53-69)	60 (52-67)	59 (50-66)	58 (49-65)	0.643
Sex (M, %)	19 (79)	18 (58)	34 (62)	10 (83)	41 (60)	41 (70)	0.307
Etiology (n, %)-ALD-Viral-ALD + Viral-NASH-Cholestatic-Other	5 (21)6 (25)2 (8)3 (13)0 (0)8 (33)	7 (23)11 (36)3 (10)6 (19)3 (10)1 (3)	14 (26)18 (33)0 (0)12 (22)2 (4)9 (16)	6 (50)2 (17)0 (0)0 (0)0 (0)4 (33)	44 (64)2 (3)3 (4)3 (4)4 (6)12 (18)	37 (63)8 (14)5 (9)1 (2)0 (0)8 (14)	**<0.001**
HVPG (mmHg)	7 (6-8)	13 (11-17)	17 (12-20)	17 (13-19)	20 (15-22)	20 (17-24)	**<0.001**
MELD Score (points)	8 (7-11)	9 (8-10)	10 (8-13)	10 (9-12)	12 (10-14)	13 (10-16)	**<0.001**
HR (/min)	78 (73-83)	80 (68-90)	74 (67-86)	70 (63-75)	80 (69-92)	72 (66-89)	0.173
MAP (mmHg)	109 (97-117)	99 (94-111)	109 (98-114)	106 (98-118)	98 (87-109)	97 (88-104)	**<0.001**
LPS (EU/mL)	0.70 (0.33-1.19)	1.02 (0.53-1.43)	0.74 (0.36-1.21)	0.35 (0.19-0.89)	0.81 (0.37-1.43)	0.58 (0.28-1.28)	0.082
LTA (pg/mL)	40.1 (22.9-107)	72.6 (31.2-185)	38.4 (25.3-87.3)	25.7 (18.8-50.4)	42.0 (25.0-191)	36.6 (19.6-123)	0.140
BactDNA (n, %)	8 (33)	18 (58)	20 (36)	2 (17)	30 (44)	23 (39)	0.150
WBC (G/L)	5.53 (3.87-6.83)	5.84 (4.14-7.00)	4.11 (3.09-5.42)	3.12 (2.39-5.13)	4.69 (3.29-5.94)	3.99 (3.17-5.46)	**0.003**
CRP (mg/dL)	0.14 (0.06-0.29)	0.19 (0.06-0.55)	0.21 (0.09-0.33)	0.15 (0.09-0.26)	0.36 (0.14-0.74)	0.37 (0.15-0.75)	**<0.001**
IL-6 (pg/mL)	4.25 (2.76-8.26)	5.29 (2.94-14.9)	5.59 (3.73-8.40)	5.48 (3.38-7.64)	8.40 (5.26-12.6)	10.8 (6.90-22.8)	**<0.001**
IL-10 (pg/mL)†	9.80 (8.18-13.5)	13.8 (10.4-19.5)	11.4 (9.05-15.4)	10.7 (7.63-14.9)	12.6 (10.1-17.0)	14.5 (11.4-17.0)	**0.007**
TNF-α (pg/mL)	16.5 (10.4-30.8)	22.6 (13.2-42.3)	14.7 (9.80-29.5)	7.25 (3-13-17.4)	18.0 (8.97-39.4)	14.8 (9.40-35.2)	**0.043**
Procalcitonin (ng/mL)	0.04 (0.03-0.07)	0.08 (0.04-0.13)	0.07 (0.05-0.10)	0.05 (0.04-0.09)	0.10 (0.05-0.15)	0.11 (0.06-0.16)	**<0.001**
LBP (µg/mL)	7.30 (5.73-9.53)	6.98 (6.11-9.11)	6.16 (5.27-7.81)	7.30 (5.52-9.35)	6.96 (4.66-8.32)	6.39 (4.92-8.33)	0.184
Copeptin (pmol/L)	8.90 (4.66-20.7)	7.02 (3.75-14.8)	5.65 (3.09-10.3)	7.24 (4.36-10.8)	9.20 (4.91-17.5)	11.1 (5.17-16.7)	0.095
Renin (µIU/mL)	17 (8.80-29.5)	14.8 (6.20-37.5)	10.4 (4.45-26.4)	10.0 (3.83-38.6)	55.5 (15.2-177)	115 (30.2-354)	**<0.001**

immunoglobulins(Ig) are important components of innate and adaptive immunity but have not been systematically assessed across distinct ACLD stages.

Methods Serum levels of complement factors C3c and C4, CH50 activity, as well as IgA, tissue-transglutaminase-IgA(TTG-IgA), IgM, IgG(including IgG subtypes 1-4), CRP and IL-6 levels were measured in 188 prospectively recruited ACLD patients undergoing hepatic venous pressure gradient(HVPG) measurement. Patients with acute decompensation and infections were excluded. The EASL clinical disease staging (S0-S3;▶**Table**) system was applied.

Results The study cohort had a median HVPG of 17(12-21)mmHg and 116 (61 %) had decompensated ACLD. HVPG and MELD, as well as CRP and IL-6 increased with ACLD stages (▶**Table**). C3c levels significantly decreased in stages S2 and S3, and C4 and CH50 were lower in S3 (vs. S0;all p<0.05; Bonferroni-adjusted). Furthermore, IgA levels and TTGIgA increased in S2 and S3 (vs. S0;all p<0.05;Bonferroni-adjusted), while IgM and IgG (including IgG subtypes) remained similar. IgA and TTG-IgA correlated significantly (Spearman's ρ=0.811;p<0.001) and were linked to CRP (IgA ρ=0.369; TTG-IgA ρ=0.300;p<0.001) and IL-6 (Spearman's ρ;IgA ρ=0.534; TTG-IgA ρ=0.454; p<0.001). During a median follow-up period of 8.20 (4.03-15.3) months, IgA (per 25mg/dL; aHR:1.03;1.00-1.06;p = 0.025), TTG-IgA (aHR: 1.27;1.04-1.55; p = 0.018), and IgG-4 (per 25mg/dL; aHR:1.06; 1.021.11; p = 0.001) displayed predictive value for first or further decompensation, when adjusted for MELD and IL-6 levels (assessed by Cox regression).

Conclusion Patients with decompensated ACLD showed increased serum IgA levels and decreased complement levels. IgA/TTG-IgA (commonly linked to the mucosal immune system) and IgG4 (associated with the induction of immune tolerance) levels predicted first/further decompensation, suggesting

▶ Tab. 1

	Compensated ACLD (n = 73)	Decompensated ACLD(n = 116)			P-value
	Stage 0	Stage 1 Bleeding (n = 6)	Stage 2 Non-bleeding decomp-ensation (n = 61)	Stage 3 Further decomp-ensation(n = 49)	
Age (years)	59 (51-66)	55 (54-60)	57 (50-65)	57 (49-66)	0.904
Sex (M, %)	48 (66)	4 (67)	41 (67)	33 (67)	0.997
Etiology (n, %)-ALD-Viral-ALD + Viral-NASH-Cholestatic-Other	21 (29)22 (30)2 (3)13 (18)9 (12)6 (8)	1 (17)4 (66)0 (0)0 (0)0 (0)1 (17)	40 (66)3 (5)2 (3)1 (2)4 (7)11 (18)	30 (61)4 (8)6 (12) 1 (2)2 (4)6 (12)	**< 0.001**
HVPG (mmHg)	13 (10-18)	15 (12-22)	20 (16-22)	19 (15-23)	**< 0.001**
MELD Score (points)	9 (8-11)	10 (9-11)	12 (10-15)	13 (11-16)	**< 0.001**
CRP (mg/dL)	0.21 (0.09-0.42)	0.13 (0.07-0.59)	0.41 (0.16-0.91)	0.51 (0.24-1.31)	**< 0.001**
IL-6 (pg/mL)	5.12 (2.81-8.57)	5.56 (4.41-13.1)	9.74 (5.49-17.9)	15.3 (9.83-29.0)	**< 0.001**
C3c (mg/dL)	101 (86.8-116)	105 (83.5-117)	86.8 (70.2-102)	81.0 (64.8-92.2)	**< 0.001**
C4 (mg/dL)	16.1 (10.6-21.1)	16.1 (13.8-16.9)	13.6 (10.3-17.1)	12.0 (9.05-15.7)	**0.006**
CH50 (U/mL)	55.2 (48.6-60.0)	52.9 (44.1-60.0)	54.6 (40.0-60.0)	45.2 (32.0-54.4)	**0.004**
IgA (mg/dL)	302 (212-430)	284 (257-418)	445 (298-604)	488 (312-680)	**< 0.001**
IgM (mg/dL)	118 (70.7-171)	112 (53.8-297)	159 (92.4-240)	144 (87.9)	0.140
IgG (mg/dL)	1350 (1085-1690)	1510 (1273-1675)	1500 (1240-1890)	1470 (1220-1760)	0.115
IgG-1 (mg/dL)	860 (691-1095)	1145 (763-1340)	1030 (813-1315)	954 (799-1200)	0.222
IgG-2 (mg/dL)	322 (255-429)	208 (165-386)	339 (241-542)	361 (257-454)	0.219
IgG-3 (mg/dL)	52.1 (34.8-72.6)	49.8 (29.4-64.6)	58.5 (37.5-98.3)	59.2 (34.5-100)	0.174
IgG-4 (mg/dL)	47.2 (22.2-80.4)	65.7 (43.3-100)	49.0 (23.6-151)	72.2 (28.1-148)	0.352
TTG-IgA (U/mL)	1.30 (1.00-2.50)	1.50 (1.00-2.66)	2.10 (1.30-3.00)	2.30 (1.30-3.30)	**0.002**

that these factors are relevant for the progression of ACLD.Further (mechanistic) studies should validate these findings and investigate their association with cirrhosis-associated immune dysfunction.

P49 Impact of COVID-19 on rare diseases: Report of three cases of acute hepatic porphyria affected by the pandemic

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Introduction: Acute hepatic porphyrias are rare and potentially life threatening disorders of the heme biosynthesis. COVID-19 can affect patients with rare diseases in different ways as exemplified by three cases.Cases: A 54-year-old man with acute intermittent porphyria (AIP, diagnosed 2019) developed COVID-19. He developed abdominal pain and red urine, and was treated with hemin. Symptoms of the porphyria attack resolved quickly, but COVID-19 disease worsened. Supplementary oxygen, dexamethasone, and remdesivir was necessary. The patient recovered completely. A 54-year-old woman with AIP (diagnosed 1994) under long-term therapy with hemin (250 mg on two consecutive days every two weeks) was vaccinated with Cov-19-Vac (Moderna) but contracted COVID-19 two weeks later. She had a mild disease course without signs or symptoms of an acute porphyria attack. A 34-year-old woman presented to the emergency department four days after receiving the first dose of ChAdOx1-S (AstraZeneca) COVID-19 vaccine with fever (resolved after paracetamol), pinprick sensation in her chest and thoracic spine, and dizziness. The patient was initially suspected to have vaccine-induced immune thrombotic thrombocytopenia and thrombosis, which was ruled out. The patient´s condition worsened with abdominal pain, red urine and hyponatremia, needing intensive care admission. Syndrome of inappropriate ADH synthesis (SIADH) was diagnosed. The red urine triggered porphyria biochemistry in urine and the patient was newly diagnosed with AIP. Treatment with hemin resulted in clinical remission. A ketogenic “low-carb” diet was the most likely trigger of this first AIP attack. Conclusion: Currently the focus of the medical community may be diverted to COVID-19 disease and associated medical problems, such as vaccine side effects. It is important to be vigilant and not to forget rare diseases during the pandemic. COVID-19 infection can trigger acute porphyria attacks, possibly because the virus can attack heme and hemoglobin metabolisms. Vaccination against COVID-19 may protect from severe disease course.

P50 Risk evaluation for acute kidney injury and acute-on-chronic liver failure via a blood-based biomarker panel in patients with cirrhosis

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Background and Aims Renin, brain-type natriuretic peptide (BNP) and arginine-vasopressin (AVP) are pivotal modulators of circulatory homeostasis and contribute to portal hypertension (PH) and hyperdynamic circulation.

Methods Plasma levels of renin, proBNP and copeptin (an AVP biomarker) were assessed in patients with advanced chronic liver disease (ACLD) characterized by hepatic venous pressure gradient (HVPG) and by compensated (cACLD) or decompensated (dACLD) state. Patients under non-selective beta-blocker therapy were excluded. Risk analysis for acute kidney injury (AKI) and acute-on-chronic liver failure (ACLF) was conducted using log-rank tests and Cox proportional hazard models. Multivariate models were adjusted for sex, age, HVPG, MELD, albumin, and sodium.

Results Altogether, 648 (cACLD: n = 302; dACLD: n = 346) patients were included. Median follow-up was 26.2 [IQR 40.4] months. During follow-up, 124 patients developed AKI (cACLD: n = 32/302 [10.6 %]; dACLD: n = 92/346 [26.6 %]) and 59 patients developed ACLF (cACLD: 5.6 % [n = 17/302]; dACLD: 12.1 % [n = 42/346]).

AKI incidence was associated with elevated plasma renin (n = 306/630; p < 0.001), proBNP (n = 139/277; p < 0.001) and copeptin (n = 62/132; p = 0.079). Elevated renin (aHR: 2.28; 95 %CI: 1.54-3.39; p<0.001) and proBNP (aHR: 2.32; 95 %CI: 1.28-4.21; p = 0.006) independently predicted AKI after adjustment for age, MELD, albumin and sodium.

Elevated renin (n = 306/630; p<0.001), proBNP (n = 139/277; p = 0.012) and copeptin (n = 62/132; p = 0.025) were linked to increased risk of ACLF. In univariate Cox regression analysis, ACLF incidence was associated with elevated renin (HR: 3.53; 95 %CI: 1.98-6.31; p<0.001), proBNP (HR: 3.10; 95 %CI: 1.22-7.88; p = 0.017) and in tendency copeptin (HR: 7.78; 95 %CI: 0.94-64.25; p = 0.057). Only elevated plasma renin (aHR: 2.17; 95 %CI: 1.18-3.98; p = 0.013) remained as an independent predictor for ACLF after adjustment for age, HVPG, MELD, albumin and sodium.

Conclusion ACLD patients with increased plasma renin, proBNP and copeptin levels are at higher risk for development of AKI and ACLF. The limited sample size for copeptin represents a limitation.

P51 Covered TIPS improves renal function in patients with cirrhosis and ascites

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Background and Aims Guidelines suggest implantating a transjugular intrahepatic portosystemic shunt (TIPS) in patients with recurrent/refractory ascites who are at risk for hepatorenal syndrome (HRS). However, data on the course and risk of HRS after TIPS are limited.

Methods Patients with cirrhosis undergoing covered TIPS implantation for ascites were included. Serum creatinine (sCr) and blood urea nitrogen (BUN) were recorded prior to TIPS (baseline, BL), within 2-7 days after TIPS, and at 1, 3, 6 and 12 months (M1/M3/M6/M12) after TIPS.

Results 165 patients were included: male: 75.2 %, mean age: 58.4±9.2 years, Child-C: 18.8 %, median MELD: 13 (range: 6-30). BUN improved consistently and significantly from median BL 26.9(IQR: 18.0-39.2)mg/dL to 16.0(12.2-22.6)mg/dL at M12 (*P* <0.0001). sCr decreased from median 1.19(IQR: 0.91-1.60)mg/dL at BL to 0.92(0.79-1.20)mg/dL at M12 (*P*=0.0048). SCr improved mostly in patients with HRS (i.e. sCr>1.5mg/dL; n = 35) from BL 1.82(1.52-2.15)mg/dL to 1.22mg/dL(0.95-1.54) at M3 (*P*=0.009), and in patients with BL-sCr of 1.2-1.5mg/dL to 0.95(0.85-1.06)mg/dL at M6 (*P*=0.024), but remained stable in patients with <1.2mg/dL at BL (*P*=0.424). Overall, renal function improved (sCr decrease by >0.3mg/dL) in 83.3 % of HRS-patients and in 61.8 % of patients with BL-sCr 1.2-1.5mg/dL. Diuretic treatment was reduced in 44.8 % (60.0 % of HRS) at the next clinical visit after TIPS, while 25.5 % (32.4 % of HRS patients) still required paracenteses. Post-TIPS acute kidney injury was uncommon and often preceded by non-TIPS related triggers (11/20). BL-sCr and BL-BUN did not impact on post-TIPS transplant-free survival (TFS, *P* >0.05 for both), but TFS was significantly longer in patients who resolved HRS (median 1014(154-3788)days) than in those who did not (41(30-660) days, *P*=0.039).

Conclusion TIPS implantation significantly improves renal function and ascites control in patients with recurrent/refractory ascites and HRS. Pre-TIPS renal function parameters did not influence transplant-free mortality after TIPS. Acute kidney injury after TIPS was mostly precipitated by non-TIPS related complications.

P52 Covered transjugular intrahepatic portosystemic shunt improves hypersplenism-associated cytopenia in cirrhosis

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Background and aims Splenomegaly is common in cirrhotic patients with portal hypertension(PH), and PH-associated hypersplenism may cause severe cytopenia in all three hematopoietic lines. Decompression of splenic congestion by transjugular intrahepatic portosystemic shunt(TIPS) implantation may ameliorate hypersplenism, but data on the dynamics of all cell lines and their correlation with splenomegaly are scarce.

Methods Retrospective cohort study. Patients with malignancies or hematologic disorders were excluded. Hematology lab work was recorded at baseline (pre-TIPS) and at months(M) 3, 6, 12 and 24 after TIPS. Spleen size was documented at baseline and follow-up, if available.

Results 192 patients (male:72.4 %, age:56±10 years; MELD:12.1±3.6) underwent TIPS implantation for ascites (n = 109;56.8 %) and variceal bleeding (n = 83; 43.2 %). Pre-TIPS thrombocytopenia ≥grade(G)2 (PLT<100 G/L), anemia ≥G2 (Hb<10g/dL) and leukopenia ≥G2 (WBC<2G/L) were present in 55

(28.7 %), 57(29.7 %), and 3(1.6 %) patients, respectively. Resolution of ≥G2 thrombocytopenia, G≥2 anemia, and leukopenia were observed in 24/55 (43.6 %), 23/57 (40.4 %) and 2/3 (66.7 %) of patients, respectively. 89.6 % of patients with available cross-sectional imaging presented with splenomegaly. Pre-TIPS spleen size correlated inversely with PLT (ρ=-0.4696; p<0.0001) and WBC (ρ=-0.3798; p = 0.0015), but not with Hb (ρ=0.0816 p = 0.5115). A decrease in spleen diameter by ≥10 % was only seen 9.1 % of patients within 12 months after TIPS, but was observed in 29.0 % on imaging that was performed later than 12 months after TIPS. Changes in spleen diameter after TIPS were not associated with amelioration/progression of thrombocytopenia (p = 504), anemia (p = 0.105) or leukopenia (p = 0.713), not even in patients with advanced stages at baseline (p>0.05 each).

Conclusion Thrombocytopenia with PLT<100G/L, anemia with Hb<10g/L, and leukopenia often improved after TIPS implantation. Since spleen size remained mostly stable after TIPS, mechanisms other than hypersplenism may play a pathophysiological role.

P53 Clinical significance of substantially elevated von Willebrand factor antigen levels in patients with advanced chronic liver disease

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Background Von Willebrand factor antigen (VWF) is increasingly used as non-invasive marker for clinically significant portal hypertension (HVPG≥10mmHg) and confers HVPG-independent prognostic information. While quantification of high VWF (i.e.,>420 %) levels is not relevant in the context of von Willebrand disease, substantially elevated VWF may be of clinical significance in ACLD. Thus, we modified our analytical approach to quantify very high VWF levels and investigated their prognostic significance.

Methods Patients with evidence of ACLD and information on VWF undergoing HVPG-measurement at the Vienna Hepatic Hemodynamic Lab were considered. Clinical stages (CS) were defined as follows: probable compensated ACLD (**probable cACLD**):LSM≥10kPa&HVPG<6mmHg; **CS0**:cACLD&6-9mmHg; **CS1**:cACLD&HVPG≥10mmHg; **CS2**:bleeding; **CS3**:non-bleeding decompensation; **CS4**:≥2 decompensations. VWF was measured by an immuno-turbidimetric assay (STA LIATEST VWF:Ag) on a STA-R Evolution (both DIAGNOSTICA STAGO S.A.S., Asnières sur Seine, France) analyzer. Samples were prediluted 1:20 with Owren-Koller buffer, in order to quantify values >420 %.

Results 125(16 %) patients had VWF>420 %. The proportion of VWF>420 % increased with disease severity (probable cACLD-0:5(4 %) vs. 1:22(10 %) vs. 2-4:98(23 %),p≤0.001) and across HVPG (<6mmHg:1(2 %) vs. 6-9:6(6 %) vs. 10-15:17(9 %) vs. ≥16:101(23 %),p≤0.001) and MELD (<10:17(6 %) vs. 10-14:27 (10 %) vs. ≥15:80(35 %),p≤0.001) strata. Median VWF was 532(IQR:462-611)% in patients with VWF>420 % and VWF was unrelated to HVPG (Spearman's ρ=0.140,p = 0.119), but showed direct correlations of weak/moderate strength with MELD (ρ=0.337,p<0.001) and CRP (ρ=0.291,p = 0.001). Among patients with VWF>420 %, VWF was predictive of decompensation/liver-related mortality in univariate analysis (per 10 %; HR:1.02(95 %CI:1.00-1.04), p = 0.025), however, this association did not attain statistical significance after adjusting for MELD.

Conclusion The proportion of patients with substantially elevated VWF steadily increases with disease progression and is particularly high in patients with profound portal hypertension. While VWF does not reflect HVPG in these patients, it correlates with hepatic dysfunction and systemic inflammation. Quantification of high values provides prognostic information, however the lack of association with clinical outcomes in MELD-adjusted analysis questions their relevance.

P54 Ramucirumab for patients with advanced hepatocellular carcinoma and elevated alpha fetoprotein following a non-sorafenib based systemic therapy: interim results from an expansion cohort of the phase 3 REACH-2 study

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Introduction Ramucirumab (IgG1 VEGFR-2 antagonist) is the first and only treatment approved in a biomarker-selected population with advanced hepatocellular carcinoma (HCC) population. The approval was based on data from the phase 3 REACH (NCT01140347) and REACH-2 (NCT02435433) trials. Similar to other contemporary trials, REACH/REACH-2 did not include patients who received first-line therapy other than sorafenib, which was the only treatment with demonstrated overall survival (OS) when the trials were designed.

Aim This global open-label expansion (OLE), single-arm REACH-2 cohort was initiated to study ramucirumab in patients with advanced HCC and baseline alpha fetoprotein (AFP) ≥400 ng/mL following a non-sorafenib based systemic therapy.

Methods Eligible patients have advanced HCC (BCLC stage C or B disease), Child-Pugh (CP) A, ECOG PS 0/1, baseline AFP ≥400 ng/mL, and 1-2 prior systemic regimens for HCC, excluding sorafenib or chemotherapy. Liver transplant patients are eligible. ~44 patients will receive ramucirumab 8mg/kg IV Q2W. Primary endpoint: safety; secondary endpoints include OS, progression-free survival (PFS), objective response rate (ORR), and patient-reported outcomes. Final analysis will occur after all patients have completed ≥3 cycles ramucirumab or discontinued.

Results As of interim data cutoff (31-January-2020), 24 patients were enrolled: 96 % male, median baseline AFP = 2094ng/mL (IQR:854, 7981), 50 % ECOG-PS 0, 96 % CP-A, 67 % ALBI grade1, and 92 % BCLC stage C. Most common prior systemic therapies were lenvatinib (n = 8), monotherapy PD-1/PD-L1 inhibitor (n = 9), PD-1 inhibitor+lenvatinib (n = 3), and atezolizumab+bevacizumab (n = 3). Grade≥3 TEAEs (≥10 %) were hypertension (n = 4), proteinuria (n = 3), and pneumonia (n = 3). No deaths due to AEs occurred. With median follow-up = 6.5 months, median PFS was 5.5 months (18 events; 95 %

CI 1.3-7.5). ORR was 16.7 % (95 %CI 1.8-31.6). Median OS was immature (10 events).

Conclusions Safety and efficacy of ramucirumab following non-sorafenib-based systemic therapy was consistent with that observed in patients who received prior sorafenib in ITT REACH-2 population. Previously presented at ILCA 2020.

P55 Antibiotic therapy is associated with worse outcome in patients with hepatocellular carcinoma treated with sorafenib

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Background Antibiotic treatment (ABT) affects the outcome of cancer patients treated with immune checkpoint inhibitors (ICIs) and chemotherapy, possibly by altering the gut microbiome. We investigated the impact of ABT on overall survival (OS) and progression free survival (PFS) in patients with advanced HCC treated with sorafenib.

Methods HCC patients treated with sorafenib between 05/2006 and 03/2020 at the Medical University of Vienna were retrospectively analyzed. ABT was defined as antibiotic use within 30 days prior to or after sorafenib initiation.

Results Of 206 patients, the majority was male (n = 171, 83 %) with a mean age of 66±9.6 years. Half of patients (n = 94, 46 %) had impaired liver function (Child-Pugh stage B). Median time of follow-up was 10.8 (95 %CI: 9.2-12.3) months. ABT was administered in 23 (11 %) patients due to different types of proven or clinically suspected bacterial infections (n = 16, 8 %) and hepatic encephalopathy (n = 7, 30 %). Median duration of ABT was 14 (IQR: 12-30) days. The ABT group had a significantly shorter median OS (4.7 (95 %CI: 3.2-6.1) months vs. 11.4 (95 %CI: 9.9-12.9) months, p = 0.012), which was confirmed in multivariable analysis (HR: 1.91 (95 %CI: 1.1-3.2), p = 0.014). Similarly, PFS trended to be shorter in the ABT group (3.5 (95 %CI: 1.6-5.4) months vs. 4.8 (95 %CI: 3.9-5.7) months, p = 0.099). None of the 10 patients with complete or partial response was found in the ABT group.

Conclusions ABT was independently associated with worse outcome in sorafenib-treated HCC patients. Prospective studies are needed to elucidate the underlying mechanism.

P56 Liver and heart fibrosis develops simultaneously in patients with alcohol use disorder - a preliminary report of the HALFWAY study

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Introduction Alcoholic liver disease (ALD) is the hepatic manifestation of alcohol overconsumption (alcohol use disorder, AUD). Ethanol toxicity, systemic pro-inflammatory cytokines as well as the intestinal microbiota contribute to progression of inflammation and fibrosis in the liver. Fibrogenesis in the heart, with impaired myocardial relaxation, is clinically characterized as diastolic heart dysfunction. The goal of our study is the investigation of circulating metabolites, microbiota signature and clinical characteristics associated with the simultaneous development of liver and heart fibrosis in patients with AUD.

Methods The HALFWAY-Study is a cohort study, recruiting patients with AUD during a detoxification program. 12 months after study inclusion, participants are revisited and liver as well as heart fibrosis is assessed by non-invasive measurements. This is the first preliminary data analysis as participant recruiting is still ongoing.

Results 40 patients were included into the study (females n = 19, males n = 21). Participants were young (mean age 42,4 years ± 7,5), non-obese (body mass index; BMI 24,1 ±4) and non-diabetic (HbA1c 5,1 % (0,6)), ruling out metabolic disease. 95 % of patients report alcohol consumption more than four times a week, with 65 % drinking 7-8 drinks per day and 25 % consuming more than 10 drinks per day. Advanced hepatic fibrosis could be observed in 20 % of study participants (acoustic radiation force impulse; ARFI, cut-off 7 kPa). We could observe a significant correlation between liver stiffness and altered myocardial relaxation displayed by E/e´ (a well-known surrogate marker of diastolic dysfunction, r=0.369, p = 0.021). Moreover, patients with advanced liver fibrosis displayed increased left atrial volume (p = 0.016). In those patients who maintained abstinence (11 participants) over 12 months, liver fibrosis (ARFI, p<0.001) and diastolic dysfunction (E/e´ (p<0.01) significantly improved.

Discussion In patients with AUD liver and heart fibrosis seem to develop simultaneously. Future research needs to identify circulating metabolites associated with hepatic and myocardial fibrogenesis.

P57 PNPLA3 and TM6SF2 are neither associated with decreased cardiovascular nor increased liver-related mortality in the general population

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Background&aims Single nucleotide polymorphisms in PNPLA3 and TM6SF2 genes have been associated with increased risk and severity of liver disease. At the same time, they have been discussed as being potentially protective from cardiovascular diseases due to their implications on serum lipid levels. Thus, the aim of this study was to evaluate whether PNPLA3 and/or TM6SF2 are associated with cardiovascular or liver-related mortality in a cohort of asymptomatic patients.

Methods The study cohort comprised 1762 Caucasians undergoing routine screening colonoscopy at a single center in Austria between 2010 and 2014 with information on PNPLA3 and TM6SF2 genotype variants. All patients with established liver diseases, colorectal cancers and significant alcohol consumption were excluded. Survival analyses were performed using Kaplan Meier analyses.

Results Half of included patients were male (n = 903[51 %], mean age 60 ±10years) with a mean BMI of 27±5kg/m^2, and arterial hypertension and hypercholesterinemia as most frequently diagnosed comorbidities (n = 1008 [57 %] and n = 1383[79 %]). NAFLD (PNPLA3-G: 41 % vs. 38 %, p = 0.055; TM6SF2-K: 51 % vs. 37 %, p<0.001) and MAFLD (PNPLA3-G: 40 % vs. 37 %, p = 0.054; TM6SF2-K: 49 % vs. 36 %, p<0.001) were more frequently diagnosed in patients carrying PNPLA3-G or TM6SF2-K-alleles. The Framingham-risk-score was lower for PNPLA3-G-alleles (median 8 vs. 10, p = 0.011).During a median follow-up of 7.5 years, 132 patients died (7.5 %), mainly due to cardiovascular- (n = 42) or tumor-related deaths (n = 40). PNPLA3-G-allele was neither associated with overall mortality (Log-rank-test: p = 0.100), nor with cardiovascular (Log-rank-test: p = 0.720) or liver-related mortality (Log-rank-

test: p = 0.325). Similarly, TM6SF2 risk-allele was also not associated with overall mortality (Log-rank-test: p = 0.539), cardiovascular (Log-rank-test: p = 0.993) or liver-related mortality (Log-rank-test: p = 0.179). Combining those two risk alleles did not increase granularity.

Conclusion Whereas genotyping for symptomatic patients with liver disease seems useful, it does not provide prognostic information in asymptomatic patients. Therefore, genotyping for PNPLA3 and TM6SF2 should not be routinely performed in the absence of risk behavior.

P58 The impact of betablocker treatment on cancer prognosis in patients with advanced hepatocellular carcinoma receiving sorafenib treatment

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Background&aims Non-selective-betablocker (NSBB) treatment is indicated in most patients with cirrhosis. Patients with hepatocellular carcinoma (HCC) may additionally benefit from BB-treatment due to various effects on cancer biology as shown for other cancer types. However, the impact of BB-treatment on cancer prognosis in HCC patients receiving systemic treatment is unclear. Therefore, we investigated the impact of BB-treatment on time-to-progression (TTP), progression-free (PFS) and overall survival (OS) in patients with advanced HCC receiving systemic treatment with sorafenib.

Methods Patients treated with sorafenib between 05/2006 and 03/2020 at the Medical University of Vienna were retrospectively included.

Results The majority of patients were male (213/250 patients, mean age 66 ±9 years) and 117 patients received BB-treatment (n = 35 cardio-selective-BB [CSBB] and n = 82 NSBB). Clinically significant portal hypertension (CSPH) was present in more than half of patients (n = 137, 55 %) and most patients (58 %) had BCLC-C.

At sorafenib start, patients receiving BB-treatment had a more advanced tumor stage (BCLC-D: 25 % vs. 10 %, P = 0.008), more advanced liver dysfunction (Child-Pugh-stage [CPS]-B/C, 66 % vs. 45 %, P = 0.001), and were more often diagnosed with CSPH (70 % vs. 41 %, P<0.001) when compared to patients not receiving BB therapy.

TTP was significantly shorter in patients with BB-treatment at baseline (4.2 [95 %CI:3.0-5.3] vs. 5.9 [95 %CI:4.4-7.3] months, P = 0.021). BB-treatment remained an independent risk factor for TTP (HR 1.52 [95 %CI:1.07-2.18], P = 0.021) after multivariable adjustment for CPS, ECOG performance-status and extrahepatic metastases. However, this did not translate into a worse median OS (BB vs. no BB, 8.5 [95 %CI:6.6-10.3] vs. 10.4 [95 %CI:8.3-12.5] months, P = 0.247) or PFS (BB vs. no BB, 3.9 [95 %CI: 3.2-4.6] vs. 4.6 [95 %CI: 3.5-5.8] months, P = 0.152).

Conclusion In contrast to results from other cancer types, we did not find improved outcomes for BB-treatment in HCC patients receiving systemic treatment with sorafenib. Instead, concomitant NSBB or CSBB use was independently associated with shorter TTP.

P59 Von Willebrand factor for outcome prediction within different clinical stages of advanced chronic liver disease

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Background Although von Willebrand factor (VWF)-levels have been reported to predict hepatic decompensation/mortality, the specific prognostic value of VWF in distinct clinical stages (CS) has not been systematically assessed.

Aims&Methods Therefore, we compared changes in prognostic biomarkers throughout the clinical spectrum of ACLD and established CS-specific VWF cut-offs for risk-prediction. Patients undergoing HVPG-measurement at the Vienna Hepatic Hemodynamic Lab with evidence of ACLD were considered. CS were defined as follows: **Probable** compensated ACLD (**cACLD**): LSM≥10kPa&HVPG<6mmHg/**0**:cACLD&6-9mmHg/**1**: cACLD&HVPG≥10mmHg/**2**:decompensated ACLD (dACLD) with bleeding/**3**: dACLD with non-bleeding decompensation/**4**:≥2 decompensations.

Results 923 patients were included. We observed a steady step-wise increase of VWF with CS-progression. In contrast, HVPG levelled off in dACLD with only modest numerical differences between CS2-4, whereas MELD showed only minor changes in early CS and CRP did not increase until CS3, i.e., non-bleeding decompensation.

cACLD patients with VWF-levels above the stage-specific 75th-percentile (≥342 %) had a more than four-times increased risk of decompensation/death (HR:4.17[95 %CI:2.20-7.90];p<0.001). In dACLD patients, VWF-levels above the 75th-percentile (≥418 %) were associated with a 67 %-increased risk (HR:1.67[95 %CI:1.28-2.19];p<0.001), while having values below the 25th-percentile (<268 %) nearly halved the risk (HR:0.57[95 %CI:0.42-0.78]; p<0.001) of decompensation/death.

Importantly, even in a fully adjusted model (age, etiology, HVPG, MELD, albumin, and CRP), VWF was independently associated with hepatic decompensation/death in cACLD. In dACLD, VWF remained independently predictive after adjusting for MELD, but not when adjusting for additional variables.

Discussion Among the investigated parameters, VWF was the only prognostic indicator that steadily increased throughout all CS of ACLD. Its prognostic implications are particularly pronounced in cACLD patients, in whom VWF ≥342 % identify those who are at a four-fold increased risk of hepatic decompensation/death. In dACLD, VWF cut-offs <268 % and ≥418 % identify low- and high-risk populations. The proposed stage-dependent VWF cut-offs are easily applicable in clinical routine and may help to broaden the use of VWF for risk stratification and treatment individualization.

P60 PNPLA3 is the dominant SNP linked to liver disease severity at time of first referral to a tertiary center

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Background&aims Single nucleotide polymorphisms (SNPs) including *PNPLA3, TM6SF2, HSD17B13* and *SERPINA1* have been identified as risk modifiers of progression in chronic liver disease (CLD). However, it is unclear whether genotyping for these risk variants is practical in clinical routine. Therefore, we aimed at investigating the usefulness of genotyping for four important SNPs in clinical routine in the assessment of the severity of CLD.

Methods Liver disease severity was assessed by liver stiffness measurement (LSM) and by presence of clinical manifestations of advanced-chronic liver disease (ACLD) in 779 consecutive CLD patients at the time of referral to a tertiary center. The associations of risk variants with CLD severity were calculated individually and in a combined model using a polygenic risk-score.

Results Non-alcoholic fatty liver disease (NAFLD) was the most common etiology (n = 511, 66 %), and ACLD was present in 217 (28 %) patients. The *PNPLA3*-G-allele remained independently associated with higher LSM (adjusted-B: 2.508 [95 %CI: 0.887-4.130], *P* = 0.002) or the presence of ACLD (aOR: 1.562 [95 %CI: 1.097-2.226], *P* = 0.013). *SERPINA1*-Z-allele was also independently associated with LSM (adjusted-B: 4.558 [95 %CI: 1.182-7.934], *P* = 0.008). Neither did *TM6SF2* increase LSM (*P* = 0.208) or the risk of ACLD (*P* = 0.503), nor was *HSD17B13* risk allele expression associated with LSM (*P* = 0.067) or with higher odds of ACLD (*P* = 0.462).

Combining all risk alleles into a polygenic score was significantly associated with LSM (adjusted-B: 0.948 [95 %CI: 0.153-1.743], *P* = 0.020).

Conclusion We provide data on the usefulness of genotyping for important risk alleles in a cohort of CLD patients with Caucasian background in clinical routine. *PNPLA3* risk-variants are linked to liver disease severity at the time of first referral to an outpatient hepatology clinic. Although *SERPINA1* might add additional information on further risk of developing (severe) liver disease, *PNPLA3* was identified to be of central importance and its use may be justified in the clinical routine.

P61 Factor VIII/protein C ratio independently predicts liver-related events but does not reflect the hypercoagulable state in patients with advanced-chronic liver disease

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Background&aims The ratio of procoagulant factor VIII to anticoagulant protein C (FVIII/PC) has been suggested to reflect the haemostatic equilibrium as it correlates with *ex-vivo* thrombin generation. Moreover, FVIII/PC predicted decompensation and death in a small study not accounting for portal hypertension (PH) severity.

We investigated **(i)** the prognostic value of FVIII/PC (**outcome-cohort**) and **(ii)** whether FVIII/PC reflects the hypercoagulable state (as assessed by thrombomodulin-modified thrombin generation assay; **TM-TGA-cohort**) in patients undergoing hepatic venous pressure gradient (HVPG)-measurement.

Methods: (i) The **outcome-cohort** comprised n = 515 patients with evidence of advanced chronic liver disease (ACLD, liver stiffness measurement [LSM]≥10kPa and/or HVPG≥6mmHg) who were stratified according to clinical stage (CS): **Probable compensated ACLD** (cACLD):LSM≥10kPa-HVPG<6mmHg, **CS0**:cACLD-HVPG6-9mmHg, **CS1**:cACLD-HVPG≥10mmHg, **CS2**:decompensated ACLD (dACLD) with variceal bleeding, **CS3**:dACLD with non-bleeding decompensation, and **CS4**:≥2 decompensations.

(ii) TM-TGA-cohort patients (n = 152) had comparable characteristics and were recruited from the prospective VIenna CIrrhosis Study (VICIS; NCT03267615).

Results: (i) FVIII/PC significantly increased across CS (**probable cACLD**:2.1 [IQR:1.7-2.8], **CS0**:2.4[1.9-3.5], **CS1**:3.2[2.6-4.7], **CS2**:3.1[2.7-3.8], **CS3**:4.0 [3.1-5.9], and **CS4**: 4.1[3.2-6.4]; p<0.001) as well as HVPG (p<0.001) and MELD (p<0.001) strata. Interestingly, FVIII/PC (aHR:1.06[95 %CI:1.01-1.11]; p = 0.010) remained independently associated with decompensation/liver-related mortality, even after extensive multivariable adjustment.

(ii) FVIII/PC showed a weak positive correlation with endogenous thrombin potential in TM-TGA (Spearman's ρ=0.265; p = 0.001), but this association disappeared after adjusting for severity of liver disease.

Discussion FVIII/PC increases with CS, PH severity, and liver dysfunction. Even after adjusting for these factors, it remained a robust prognostic indicator. This should not be mistaken as evidence for the concept of hypercoagulability as a driver of disease progression, as the correlation between FVIII/PC and thrombin generation is confounded by liver disease severity, and thus, FVIII/PC does not reflect the haemostatic balance.

P62 Increasing ACE activity in liver disease impacts on fibrinolysis and inflammation - a potential link to COVID-19

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Background and Aims The relation between the activity of the renin-angiotensin-aldosterone system (RAAS), fibrinolysis, and pro-inflammatory signals has not been systematically investigated across the spectrum of advanced chronic liver disease (ACLD). Moreover, RAAS-induced dysregulation of plasmin may facilitate cellular entry of severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2).

Methods Plasma levels of angiotensin converting enzyme (ACE), a2-antiplasmin activity (APA) and interleukin-6 (IL-6) were analyzed in ACLD patients with hepatic venous pressure gradient (HVPG) strata of 6-9mmHg, 10-19mmHg, and ≥20mmHg. Patients with beta-blockers, anti-thrombotic/anti-platelet therapy, thromboembolic events or malignant disease were excluded. Multivariate analysis considered age, sex, HVPG, mean arterial pressure, model for end-stage liver disease (MELD), albumin, sodium and ascites.

Results 127 patients (CTP-A: 51.2 %, CTP-B: 40.9 %, CTP-C: 7.9 %) with male predominance (65.4 %) were included. N=16 (12.6 %) patients had HVPG 6-9mmHg, n = 64 (50.4 %) had HVPG 10-19mmHg and n = 47 (37.0 %) had HVPG ≥20mmHg.

ACE (6-9mmHg: median 37.3 [IQR 17.3]U/L, 10-19mmHg: 43.6 [44.7]U/L, ≥20mmHg: 60.4 [29.9]U/L; p = 0.003), and IL-6 (6-9mmHg: 2.8 [3.0]pg/mL, 10-19mmHg: 8.5 [13.6]pg/mL, ≥20mmHg: 9.8 [10.9]pg/mL; p<0.001) increased throughout the HVPG strata, while there was a decrease in APA (6-9mmHg: 80.0 [16.8]%, 10-19mmHg: 69.0 [18.5]%, ≥20mmHg: 57.0 [21]%; p<0.001).

ACE correlated inversely with APA (ρ=-0.405; p<0.001) and directly with IL-6 (ρ=0.258; p = 0.003). ACE impacted on APA (B: -0.62; 95 %CI: -0.93 - -0.32; p<0.001), but not on IL-6 (B: 0.12; 95 %CI: -0.17 – 0.42). After adjustment for HVPG, MELD, albumin and ascites, APA (aB: -0.493; 95 %CI: -0.818 - -0.169; p = 0.003) was independently associated with ACE activity.

Conclusion ACE activity increases with progressive ACLD and is linked to systemic inflammation and to fibrinolysis, thus aggravating coagulatory dysbalance. Moreover, the link between ACLD-induced ACE activation, fibrinolysis and a pro-inflammatory state may explain why ACLD patients are more susceptible to severe COVID-19.

P63 NSBB-associated VWF-decreases in decompensated cirrhosis indicate a reduced risk of further decompensation, ACLF, and death

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Background and Aims Bacterial translocation promotes endothelial dysfunction and systemic inflammation (SI), thereby driving disease progression in cirrhosis. Non-selective beta-blockers (NSBBs) may exert beneficial effects beyond lowering portal pressure.We assessed (i) NSBB-related changes in von Willebrand factor levels (VWF) and (ii) their prognostic value for outcomes in decompensated cirrhosis.

Method We assessed changes in VWF as a surrogate marker for endothelial dysfunction, as well as biomarkers of SI (C-reactive protein[CRP], procalcitonin[PCT]) and of hemodynamic derangement (mean arterial pressure [MAP]) in patients with stable decompensated cirrhosis undergoing paired hepatic venous pressure gradient (HVPG) measurements before and under NSBB treatment. Patients were followed until last clinical contact, the occurrence of risk-modifying events (antiviral therapy, alcohol abstinence, or hepatocellular carcinoma), liver transplantation, or death. Follow-up data was analyzed using Cox regression according to time-varying exposure to meaningful decreases (>5 %) in VWF ('VWF-responders') vs. stable/increasing VWF levels (<5 % decrease, 'VWF-non-responders') upon NSBB treatment.

Results 159 patients with a median Child-Pugh score of 8(IQR:6;9) were included. Upon NSBB treatment, VWF-response was observed in 97(61.0 %) patients (median relative decrease:-14.7[IQR:-21.4;-10.0]%), while 77 (48.4 %) patients were HVPG responders.The rates of HVPG-response were comparable between VWF-response groups (VWF-responders:49.5 % vs. VWF-non-responders:56.8 %;p = 0.864). However, VWF-responders showed more pronounced relative reductions in SI, i.e. procalcitonin (-20.2[IQR:-34.1;-3.8]% vs. VWF-non-responders:20.0[IQR:11.7;36.4]%;p = 0.001) and CRP (-26.2[IQR:-50.1;11.8]% vs. VWF-non-responders:-3.5[IQR:-33.1;10.0]%; p = 0.050). Conversely, NSBB-induced relative decreases in MAP were less pronounced in VWF-responders (-8.0[IQR:-15.0;0]%) than in VWF-non-responders (-12.2[IQR:-18.5;-2.8]%;p = 0.044).In adjusted Cox regression models, VWF response was associated with decreased risks of further decompensation (adjusted hazard ratio[aHR]:0.555[95 %CI:0.337-0.912];p = 0.020), acute-on-chronic liver failure (ACLF, aHR: 0.302[95 %CI:0.126-0.721]; p = 0.007), and liver-related death (aHR: 0.332[95 %CI:0.179-0.616]; p<0.001).

Conclusion NSBB-related reductions in VWF levels might reflect their anti-inflammatory activity. Decreases in VWF are paralleled by less pronounced adverse effects on systemic hemodynamics and decreased risks of further decompensation, ACLF and death.

P64 Update on the Austrian epidemiology of Hepatitis D Virus (HDV)

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Background and Aims Hepatitis D virus (HDV) coinfection promotes progression to cirrhosis, decompensation and hepatocellular carcinoma in hepatitis B (HBV) patients. The prevalence of viremic HDV infection in Austria is unknown. With new treatment options emerging, updated epidemiological data on HDV are urgently needed.

Method Ten Austrian hepatitis treatment centers contributed patients who tested positive for anti-HDV antibodies between 2010 and 2020. We evaluated the rate of HDV viremia and the disease severity among viremic patients with at least one visit after January 2019 ('active' HDV cohort). We (i) evaluated the prevalence of HDV-infection in Austria, and (ii) characterized the 'active' HDV-patient cohort in Austria.

Results 347 patients with positive anti-HDV antibodies were identified. HDV-RNA-PCR testing was performed in 202 (58.2 %) patients, and 126 (62.4 %) had confirmed HDV viremia. Hepatocellular carcinoma was diagnosed in 7 (5.6 %) patients, and 11 (8.7 %) patients died of liver-related causes, while 7 (5.6 %) patients underwent liver transplantation. The 'active' Austrian HDV cohort included 74 patients (52.7 % male), and the median age was 46 (IQR 37-59) years. Evidence for advanced chronic liver disease (ACLD, defined by histological F3/F4 fibrosis, liver stiffness measurement[LSM] ≥10kPa, presence of varices, or hepatic venous pressure gradient[HVPG] ≥6 mmHg) was detected in 38 (51.4 %) patients, two of which (5.4 %) showed decompensated ACLD.Thirty-seven (50.0 %) patients of the 'active' HDV cohort were previously/currently treated with interferon (IFN). Treatment with the novel sodium-taurocholate cotransporting polypeptide (NTCP) inhibitor bulevirtide was initiated in 20 (27.0 %) patients.

Conclusion The total number of 126 confirmed HDV viremic cases in Austria is low but likely underestimated. Since half of the 'active' patients had ACLD, improved testing and workup strategies should be implemented in order to improve access to emerging new therapies.

P65 NAFLD is not independently associated with H. pylori in an Austrian screening collective

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Introduction The association between Helicobacter pylori (H. pylori) infection and non-alcoholic fatty liver disease (NAFLD) is under debate. The available data are mainly from Asian patients, while information on Caucasians is scarce. We therefore investigated a large Austrian screening cohort to

determine whether an association between NAFLD (evaluated by transient elastography) and H. pylori (assessed histologically) can be found.

Methods In total, 1445 participants undergoing colorectal cancer screening including gastroscopy, abdominal ultrasound, transient elastography using Fibroscan® and laboratory evaluations at a single-centre in Austria between 2016 and 2020 were evaluated. The primary endpoint was the diagnosis of NAFLD defined as controlled attenuation parameter (CAP) ≥ 248 db/m. H. pylori infection was assessed histologically from mucosal biopsies obtained via gastroscopy. Association between H. pylori and the presence/severity of NAFLD were evaluated using uni- and multivariable logistic regression. We calculated (adjusted) odds ratios (aOR) and respective 95 % confidence intervals (CIs).

Results 1211 patients had no evidence of H. pylori infection while 234 patients were tested positive. Age and sex were evenly distributed between groups (57 ± 12 years vs. 57 ± 13 years, p = 0.782; 48 % vs. 44 % female patients; p = 0.224). BMI was significantly higher in the H. pylori positive group (26 ± 5 vs. 27 ± 5 kg/m^2; p = 0.003). Although NAFLD was more common in H. pylori-positive patients (56 % vs. 64 %; p = 0.020) in the univariable analysis, we could not show an independent association when adjusting for age, sex and BMI (body mass index) (aOR 1.198 [95 % CI, 0.828 - 1.733]) in multivariable regression analysis.

Conclusion H. pylori is not independently associated with NAFLD in a large, well-characterised central European CRC screening cohort.

P66 Secondary Sclerosing Cholangitis of the Critically Ill Patient suffering from COVID19

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Secondary sclerosing cholangitis of the critically ill patient (SSC-CIP) has been reported for patients requiring intensive care treatment (ICT). It is hypothesized that mechanical ventilation and high-dose vasopressor treatment foster formation of biliary casts through ischemia and necrosis of the biliary endothelium. The disease is characterized by rapid progression, poor prognosis, and limited therapeutic options. Emerging numbers of patients, requiring ICT due to the SARS-COV-2 pandemic, have resulted in several case series reports describing SSC-CIP in these patients.

This case report summarizes the clinical course of a 66-year-old patient, wo had received ICU treatment for SARS-COV-2 in a peripheral county hospital in Austria. On the twelfth day following admission the patient presented with rising transaminases and cholestasis. Initial suspicion of drug induced liver injury was attributed to multiple antibiotic regimens for bacterial superinfection and suspicion of abdominal abscessing. The diagnosis was revoked when discontinuation of treatment did not result in improvement. Magnetic resonance cholangiopancreatography showed features of cholangitis. The patient was subsequently transferred to our gastroenterology department at the University Clinic of St. Pölten to undergo repeated endoscopic retrograde cholagiopancreaticographies for removal of biliary casts. The patient received nutritional support and physiotherapy rehabilitation. However, the patient's state did not improve. Though liver transplantation was initially considered, severe progressing sarcopenia ultimately posted a contraindication, resulting in fatal outcome.

SSC-CIP could be a distinct disease entity related to SARS-COV-2. Limited therapeutic options and ICU acquired asthenia is associated with increased mortality. Liver transplantation is often the only potentially beneficial treatment option. Frailty and sarcopenia are relevant prognostic factors for patients undergoing LT. Early targeted physiotherapeutic and nutritional measures in ICU setting may reduce mortality rate due to sarcopenia. Prevention through vaccination may ultimately reduce ICU admissions, necessity of LT and mortality. Key Words: COVID19, Secondary Sclerosing Cholangitis of the critically ill

P67 The association of liver steatosis assessed by the controlled attenuated parameter and severity of liver disease with the presence of cirrhotic cardiomyopathy

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Introduction Recently, new criteria for cirrhotic cardiomyopathy (CCM) by a multidisciplinary consortium were published (Izzy et al.Hepatology 2020;71:334-345). Systolic dysfunction of the left ventricle was defined as reduced ejection fraction (EF)≤50 % and/or absolute global longitudinal strain (GLS) less negative than -18 %, while diastolic dysfunction is diagnosed when three of the following conditions are present:E/e' ratio >14,peak tricuspid regurgitation velocity >2.8 m/s,septal e'<7cm/s,left atrial volume index >34 ml/m^2.

Aim To assess the association between liver steatosis assessed by controlled attenuation parameter(CAP) and severity of liver disease with the presence of CCM defined according to the new diagnostic criteria.

Methods Consecutive cirrhotic patients without structural heart disease,no HCC outside Milan criteria,absence of TIPS,and optimal acoustic echocardiography window were included. Conventional and speckle-tracking echocardiography (Vendor GE,EchoPAC PC software) were performed by two EACVI TTE certified investigators. Liver steatosis (controlled attenuated parameter-CAP) and liver stiffness (LS) were assessed by transient elastography (TE,Fibroscan®,Echosens). Reliable results were defined as a median value of 10 valid measurements with an IQR/Med <30 %.

Results 122 of 371 cirrhotic patients fulfilled the inclusion criteria. The mean age was 56.8±11.8 years (62.5 % males),68.7 % had alcoholic etiology, and 59.3 % presented with compensated cirrhosis.Valid TE measurements were obtained in 96/122(78.6 %) cases and were included in the final analysis. LS and CAP measurement failures were mainly due to ascites. According to the new criteria, CCM was diagnosed in 15/96(15.6 %) of patients: systolic dysfunction in 11.4 %,diastolic dysfunction in 7.3 % of cases. Combined systolic

	Systolic dysfunction (n=11) (A)	No cardiac dysfunction (n=81) (B)	Diastolic dysfunction (n=7) (C)	p-value
Age (years)	64.2±10.6	55.2±10.3	69.8±6.4	A vs B: **p= 0.01** A vs C: p=0.22 B vs C: **p=0.0008**
Male (%)	n=8 (72.7%)	n=53 (65.4%)	n=2 (42.8%)	A vs B: p= 0.68 A vs C: p=0.43 B vs C: p=0.58
BMI (kg/m²)	29.1±4.7	25.1±3.8	27.5±4.4	A vs B: **p= 0.003** A vs C: p=0.48 B vs C: p=0.54
Alcoholic etiology (%)	n=4 (36.3%)	n=60 (74.1%)	n=3 (66.6%)	A vs B: **p= 0.03** A vs C: p=0.44 B vs C: p=0.87
Child-Pugh: B+C	n=3 (27.2%)	n=34 (41.9%)	n=3 (42.9%)	A vs B: p= 0.51 A vs C: p=0.86 B vs C: p=0.67
MELD	9 (6-15)	9 (6-29)	9 (6-26)	A vs B: p= 0.25 A vs C: p=0.55 B vs C: p=0.95
LS by TE (kPa)	42.2±25.2	41.9±23.8	33.2±14.8	A vs B: p= 0.69 A vs C: p=0.20 B vs C: p=0.24
CAP by TE (dB/m)	303.7±55.4	259.4±61.6	249.5±71.7	A vs B: **p=0.02** A vs C: p=0.09 B vs C: p=0.73

and diastolic dysfunction was present in 3.1 % of cases. The presence of systolic dysfunction was associated with older age,higher body mass index,and liver steatosis evaluated by CAP (Table).

Conclusion According to the new criteria, around 15 % of cirrhotic patients were diagnosed with CCM. Age and CAP assessed by TE seem to correlate with reduced systolic left ventricular function.

P68 Value of Hitachi Shear Wave Elastography (SWE) to rule-in and rule-out the presence of esophageal varices in patients with compensated advanced liver disease

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Introduction According to Baveno VI consensus, patients with an LS<20 kPa assessed by Transient Elastography (TE) and platelet count>150000 cell/mm^3 have a very low risk for esophageal varices, and screening gastroscopy by patients with compensated advanced liver disease (cALD) can be avoided safely.

Aim To assess the value of the Hitachi SWE to rule-in and rule-out the presence of esophageal varices in patients with cALD.

Methods LS was measured with Hitachi SWE (AriettaV70) and TE.

Results Our cohort included 195 patients with chronic liver diseases and different degrees of liver fibrosis, of which 107 were diagnosed as cALD (mean age 57.3±12.4years,69.1 % men). The most common etiology was alcohol use(50.4 %). Esophageal varices were diagnosed in 43.9 % of these patients. Best predictive LS cut-off value by Hitachi SWE for the presence of F4 fibrosis was>8.7kPa (Se 94.4 %, Sp 92.5 %,AUC=0.965).None of the patients with esophageal varices had LS assessed by TE<20kPa and platelet count>150000 cells/mm^3, showing very good performance of the Baveno VI criteria.The best LS cut-off value assessed by Hitachi SWE for predicting the presence of esopageal varices was>11.7kPa (Se 66 %, Sp 70 %, AUC=0.742); while for a cut-off value>16.5kPa more than 90 % Sp was observed. None of the patients with esophageal varices assessed by Hitachi SWE had LS<11.7kPa and platelet count>150000 cells/mm3, demonstrating a very good performance to rule out the presence of esophageal varices. Rule-in esophageal varices performance of LS assessed by Hitachi SWE und platelets count was significant lower. When both criteria (LS>16.5kPa, platelet count<150.000 cells/mm3) were fulfilled, a significantly higher positive predictive value (PPV=76.9 %, 10/13 patients) was calculated to rule-in esophageal varices compared to the presence of one criterion only (PPV=57.3 %, 47/82 patients)

Conclusions LS assessed by Hitachi SWE combined with platelet count seems to be a reliable method to rule-out the presence of the esophageal varices in cALD patients.

P69 Association of hepatic *Meteorin-like* and *Krüppel-like factor 3* with weight loss after laporoscopic adjustable gastric banding

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Introduction Incidence and prevalence of obesity and obesity related disorders, such as metabolic associated fatty liver disease, are increasing worldwide (1). Bariatric surgery, such as laparoscopic adjustable gastric banding (LAGB) is effective in reducing body weight. Meteorin-like (METNRL) has been described as an important regulator of energy expenditure (2). Krüppel-like factor 3 (KLF3), a regulator of METRNL expression in eosinophils, regulates the development of adipose tissue (AT) in mice by inhibiting beiging of AT (3).

Methods Hepatic tissue (HT) and AT of 33 obese patients undergoing LAGB were collected before and six months after surgery (4). Expression of *METNRL* and *KLF3* was measured and correlation with clinical data was investigated. *METNRL* and *KLF3* expression was determined in HEPG2s stimulated with cytokines.

Results Hepatic *METNRL* was significantly reduced after LAGB. Although the expression of *METNRL* and *KLF3* correlated positively in HT and AT before and after LAGB, there was no statistically significant downregulation of *KLF3* in HT. There was no difference in *METNRL* or *KLF3* expression in AT before and after weight loss. Interestingly, patients with a weight loss response over 20 kg had lower expression of hepatic *METNRL* and *KLF3* before and after LAGB, when compared to patients with less than 20 kg weight loss. A trend towards higher levels of hepatic *METNRL* and *KLF3* expression with higher NAS scores was observed. Additionally, stimulation of HepG2s, immortalized human hepatocellular cancer cells, with IL-1β and Tnf-α induced *METNRL* and *KLF3* expression.

Conclusion METRNL and KLF3 could act as possible biomarkers upfront to bariatric surgery. These proteins could be involved in the development of MAFLD or other obesity related disorders.

[1] Diehl AM et al. Nature metabolism, . (2019;1, (11):1027–9.[2] Baht GS et al. Nature metabolism, . (2020;2, (3):278–89
[3] Knights AJ et al. JBC, . (2020;295, (18):6080–91.
[4] Moschen AR et al. Journal of hepatology, . (2009;51, (4):765–77.

P70 Epidemiological trends of Hepatobiliary Carcinomas in Austria 2009-2018 - an update

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Background In 2014 we analysed epidemiological trends of hepatobiliary carcinomas (HBC) in Austria from 1990-2009. Now we investigated the further trends from 2009-2018.

Methods Patients diagnosed with hepatocellular carcinoma (HCC), intrahepatic cholangiocarcinoma (iCCC), extrahepatic cholangiocarcinoma (eCCC), gallbladder carcinoma (GBC) and ampullary carcinoma(AC) were included. Data on age-adjusted incidence rates were obtained from the Austrian National Cancer Registry. Data on age-adjusted mortality rates were obtained from the national death registry (Statistik Austria).

Results Between 2009 and 2018, 14291 patients were diagnosed with HBC (7930 HCC, 2064 iCCC, 1812 eCCC, 1543 GBC, 612 AC). The median overall survival (OS) of all patients was 7.1 months (1/5 year OS: 40 %/8 %), with the best OS in patients with AC (25.1 months) and worst in patients with ICC (4.9 months). Lymphnode or distant metastases were associated with poorer survival and most frequent in GBC and iCCC. Overall survival significantly improved in HCC, ECC, GC, AC compared to 1990-2009. In HCC the incidence rates decreased in both men and women, the mortality rates slightly decreased in men and remained stable in women. In iCCC, incidences remained stable in both sexes, while mortality increased in men and decreased in women. In eCCC, the age-adjusted incidence rates increased in men and decreased in women, the mortality rates increased in men and remained stable women. In GBC the incidence and mortality rates decreased in both sexes. In AC, the incidences decreased in women and remained stable in men, the mortality rates decreased in both sexes.

Conclucion Age-adjusted incidence and mortality rates decreased in HCC, GBC and partly in AC. While incidences and mortality of eCCC/iCCC rather

increased in men, those remained stable or decreased in women. Overall survival improved in almost all entities compared to 1990-2009.

P71 Combination of TACE plus RFA in early and intermediate stage HCC patients

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Background Locoregional therapies are recommended therapies for patients with non-advanced stage hepatocellular carcinoma (HCC). While radiofrequency ablation (RFA) is used for early stage, transarterial chemoembolization (TACE) is the option for intermediate stage disease. The aim of this study was to compare the efficacy and safety of combination of TACE plus RFA with RFA or TACE alone in patients with non-advanced HCC. With new and markedly improved medical treatment options for liver cancer, identifying patients who profit from locoregional therapies is essential.

Methods Patients treated with combination of TACE plus RFA, patients treated with RFA alone and patients treated with TACE alone were included in this analysis. Progression free survival (PFS), overall survival (OS), adverse events (AEs) as well as prognostic scoring systems were analyzed in the three groups of patients treated at Klinikum Klagenfurt.

Results 29 patients were treated with TACE/RFA combination, 15 with RFA and 34 with TACE alone. ORR rate was equal in all groups. There was no statistical difference in, ORR, OS (RFA/TACE vs. RFA vs. TACE: 42 vs. 42 vs 26 months, p = 0.078) and PFS:(15 vs. 26 vs. 16 months, p = 0.845). However, serious adverse events (CTCAE ≥ grade 3) were significantly lower in patients treated with combination therapy compared to TACE alone (10 vs. 30 %, p = 0.034), due to fewer needed interventions in order to achieve objective response. In univariate analysis STATE score (15 vs. 52 months, p<0.001) had a significant prognostic impact for patients with TACE/RFA combination. Furthermore, STATE score predicted PFS (5 vs. 20 months, p = 0.006).

Conclusion The combination of TACE plus RFA showed the same effectiveness compared to RFA or TACE alone. However, safety was better compared to TACE. STATE score can identify optimal patients to be treated with this combination.

P72 Gut Microbiome Dysbiosis, Bile acids, and Sarcopenia in Liver Cirrhosis

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Background and Aim 50-70 % of liver cirrhosis patients suffer from sarcopenia leading to a low quality of life and high mortality risk. The gut microbiome can metabolize bile acids and in turn, bile acids can shape the gut microbiome community structure. We aimed to study gut microbiome dysbiosis and bile acids composition as potential biomarkers for sarcopenia in liver cirrhosis.

Methods 16s rDNA sequencing of fecal microbiome, metabolomics, and bile acids profiles patients with liver cirrhosis and sarcopenia (n = 78) as well as no sarcopenia (n = 38). ANCOM, LEfSe, and LASSO regression and multivariate logistic regression were applied. Results: LEfSe showed *Sutterella species, Vellionella parvula, Bacteroides fragilis*, and *Blautia marseille* to be associated with sarcopenia and *Bacteroides ovatus* to be associated with no sarcopenia. ANCOM confirmed *Bacteroides ovatus* to be associated with no sarcopenia. In sarcopenic cirrhotics we observed significantly reduced MAMC, BMI, serum valine, serum acetate, total UDCA:total secondary bile acid and increased DCA, GLCA, total DCA, total LCA, GLCA:CDCA, LCA:CDCA, DCA:CA, 12-α: non-12-α-OH bile acids (p≤0.05). LASSO regression identified MAMC, BMI, serum valine, serum acetate, GLCA: CDCA, 12-α: non- 12-α-OH BAs, and total UDCA: total secondary BAs as predictors for sarcopenia in liver cirrhosis. Multivariate logistic regression showed that MAMC, BMI, serum valine, serum acetate, GLCA: CDCA, 12-α: non- 12-α-OH BAs, total UDCA: total secondary BAs (*p<0.05*) and *Bacteroides ovatus* (p = 0.017) were independent predictors for the sarcopenia in liver cirrhosis even when corrected for severity of liver disease and drug use.

Conclusions *Bacteroides ovatus*, serum valine, serum acetate, bile acid profiles are independent predictors for sarcopenia and potential biomarkers for muscle health in liver cirrhosis. Further studies are needed to assess whether increasing *Bacteroides ovatus* abundance, serum valine, serum acetate, and altering bile acid composition may affect muscle health.

P73 COVID19 vaccination in liver transplant recipients

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Background In December 2019 the new coronavirus, SARS-CoV-2 was identified in Wuhan, China. It rapidly spread all over the world and since March 2020 Austria is affected by this pandemic. This outbreak turned out a serious challenge for the health care systems and workers. The availability of vaccines against SARS-CoV-2 represents the global cornerstone against the pandemic, yet its efficacy particularly in high-risk populations such as patients with chronic liver disease and solid organ (SOT) recipients under immunosuppression remains to be established.

Methods Our university clinic offered vaccination (Biontech/Pfizer) to liver transplant patients. In this study, we compared humoral and cellular immune response of 25 liver transplant recipients and 47 healthy controls. Antibodies were analyzed at the day of the first vaccination (day 0), on the day of the second vaccination (day 28) and four weeks after complete immunization (day 56) using an RBD enzyme-linked immunosorbent assay (ELISA) and different SARS-CoV-2 neutralization assays using wildtype and pseudo-typed viruses. The presence of SARS-CoV-2 specific T cells directed against the spike (S) and nucleocapsid (N) proteins was assessed at day 56 by an interferon gamma release assay (IGRA).

Results The Biontech/Pfizer vaccine induced measurable antibody titers in healthy subjects and in patients after SOT. Titers in both groups were increased after each injection. The absolute levels of antibodies, however were significantly lower in SOT recipients than in controls. Notably, seroconversion occurred in only half of the SOT recipients but in all of the healthy subjects. T cell responses measured by spike protein IGRA were also significantly reduced in SOT recipients.

Conclusion Pfizer Biontech mRNA Covid 19 vaccination induced both reduced humoral and cellular immune responses in SOT recipients compared to healthy controls. Appropriate boosting strategies have to be developed.

P74 Diet in alcohol withdrawal - coffee consumption is associated with reduced risk of alcohol-induced liver fibrosis and steatosis

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Introduction Excessive alcohol consumption remains a global health issue, leading to the development of alcoholic liver disease (ALD), which comprises a spectrum of liver injuries including steatosis, steatohepatitis, fibrosis and, ultimately, cirrhosis. Ethanol toxicity, pro-inflammatory cytokines as well as the microbiota influence the development of ALD. The aim of our study was to investigate whether there is a measurable relation between different types of diets and the development of alcohol-induced injuries on the liver.

Methods In this cohort-study we included 32 patients hospitalized to participate in an alcohol withdrawal program. To assess patients´ alcohol intake and diet the AUDIT (Alcohol Use Disorders Test) and a modified version of the "Food Frequency Questionnaire" by Garcia Larsen, V., et al. was used. In a next step dietary patterns were correlated with clinical parameters.

Results In our study we included 32 patients (16 female/16 male) with a mean age of 42,73 (±7,85). While most dietary patterns (proteins, carbohydrates, fats, sugar, dairy products) showed little to no effect on the development of alcohol-induced organ damage, coffee consumption indirectly correlated with liver fibrosis measured by non-invasive Acoustic Radiation Force Impulse (ARFI, r=-0.461, p = 0.012). Most study participants consumed coffee daily, whereas 12,5 % reported no coffee intake. Patients with high coffee consumption (≥5 cups per day) showed significantly less hepatic steatosis and fibrosis compared to patients with no/moderate (≤1 cups per day) coffee consumption. Furthermore, coffee intake indirectly correlated with the NAFLD fibrosis score (NFS, r=-0.640, p = 0.000). Regarding the influence of diet on withdrawal success, we found no significant association.

Conclusion Coffee consumption in patients with alcohol use disorders appears to beneficially influence the development of alcoholic liver disease.

P75 The Phenotypic Spectrum of Patients with Genetic variants in Ceruloplasmin

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Background Aceruloplasminemia (ACP) is a rare autosomal recessive disorder of iron metabolism and belongs to the heterogeneous group of neurodegenerative diseases with iron accumulation (NBIA). Patients typically present with diabetes mellitus, retinal degeneration and neurological symptoms. Characteristic biochemical findings including hyperferritinemia, low transferrin saturation and a decreased ceruloplasmin protein concentration. Aceruloplasminemia is caused by recessive mutations in the majority of patients but patients with simple heterozygosity have been reported.

Methods Ceruloplasmin gene (*CP*) sequencing was performed in a cohort of 186 patients with unexplained hyperferritinemia or decreased concentration of ceruloplasmin in plasma. Demographic, clinical and biochemical parameters of patients carrying pathogenic CP mutations and tissue iron concentrations in the brain and the liver analyzed by R2* magnetic resonance imaging (MRI) were retrospectively assessed.

Results Here we report on a cohort of 21 patients of which four patients are compound heterozygous and 17 are heterozygous for likely pathogenic variants or variants of unknown significance in *CP*. Twelve patients showed increased hepatic iron concentration and three patients had iron accumulation in the brain. One patient had been misdiagnosed as WD and copper chelation could be safely stopped.

Conclusion Patients with genetic variants in CP can present with a spectrum of conditions ranging from asymptomatic hyperferritinemia to severe and progressive neurodegeneration. The present study highlights that patients with heterozygous CP can also be misdiagnosed as Wilson disease or hemochromatosis.

P76 Lebertransplantation bei HCC - ein Follow-up am Ordensklinikum Linz in Hinblick auf Transplantationskriterien und Outcome

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Einleitung Die Lebertransplantation (LTX) stellt eine kurative Therapieoption des hepatozellulären Karzinoms (HCC) dar. Großteils gelten die Mailand Kriterien zur Entscheidung für/gegen eine LTX. Hierbei liegen das 5-Jahres-Überleben bei ca. 75 % und das Lokalrezidivrisiko bei ca. 15 %. Ziel der Arbeit ist es, zu erheben, wie viele Patienten/Innen tatsächlich entsprechend der Mailand-Kriterien transplantiert wurden und ob die Rezidivrate und Mortalität mit der Literatur übereinstimmen.Mögliche Diskrepanzen (Staging vor OLTX und Explantleber-Befunde) bzw. ein Abweichen von Transplantkriterien sollen dargestellt werden.

Methodik Retrospektive, deskriptive Datenanalyse von Patienten/Innen welche wegen eines HCCs am Ordensklinikum Linz behandelt wurden und zwischen 01.01.2008 bis 31.12.2018 transplantiert wurden. Follow-up wurde bis Mai 2020 durchgeführt.Deskriptive Daten zu Geschlecht, Alter, Ätiologie der Lebererkrankung, Stadium der Lebererkrankung (Child-Pugh-Score, MELD-score, Aszites, hepatische Enzephalopathie, portale Hypertension, Varizen/Blutung), Tumorerkrankung (Diagnosezeitpunkt, Anzahl und Größe der Tumorherde, AFP, BCLC Stadium) und Therapie wurden erhoben. Diese Arbeit ist Teil einer Masterarbeit an der Medizinischen Fakultät JKU.

Ergebnisse Von 30 Patienten/Innen wurden 15 Patienten in die Datenauswertung aufgenommen; 15 erfüllten die Einschlusskriterien nicht (n = 6 verstarben, n = 5 nicht gelistet, n = 2 LTX außerhalb des Zeitraumes, n = 1 HCC Zufallsdiagnose in Explantleber, n = 1 lost of follow-up).Alle Patienten waren männlich; durchschnittliches Alter bei HCC-Diagnose 58 Jahre, bei Transplantation 59 Jahre. Initiales BCLC Stadium bei Diagnosestellung: BCLC-0 n = 2, BCLC-A n = 10, BCLC-B n= 3.Transplantation innerhalb der Mailand Kriterien: bei Diagnosestellung n = 11, nach downstaging n = 2. Transplantation außerhalb der Mailand Kriterien n = 2 (n = 1 erfolgloses downstaging, n = 1 understaging in der Bildgebung). Bridging/downstaging Therapie erhielten 14 Patienten.Unerwartete Ergebnisse in der Explanthistologie: Mischtumor n = 2, understaging in der prä-Transplant Bildgebung n = 2.Medianes follow-up: 59 Monate; Komplikationen: HCC-Rezidiv (n = 3, 20 %), Tod (n = 3, 20 %).

Zusammenfassung Beinahe alle Patienten wurden innerhalb der Mailand-Kriterien transplantiert. Die Rezidiv- und Überlebensraten decken sich mit der Literatur. Auf ein „understaging" in der Bildgebung bzw. Fehleinschätzung des Bridging/Downstaging-Erfolges gehört geachtet, engmaschige Untersuchungen sind individuell sinnvoll.

P77 Safety of direct oral anticoagulants (DOACs) in patients with advanced liver disease

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Background While direct oral anticoagulants (DOACs) are increasingly used in patients with liver disease, safety data especially in advanced chronic liver disease (ACLD) are limited.

Methods Liver disease patients receiving DOAC treatment (ACLD: n = 104; vascular liver disease: n = 29) or vitamin K antagonists (VKA)/low-molecular-weight heparin (LMWH; ACLD: n = 45; vascular: n = 13) between 01/2010-09/2020 were retrospectively included. Invasive procedures and bleeding events were recorded. Calibrated anti-Xa peak levels and thrombomodulin-modified thrombin generation assays (TM-TGAs) were measured in a subgroup of 35 DOAC patients.

Results Among patients receiving DOAC, 55 (41.3 %) had advanced liver dysfunction (Child-Turcotte-Pugh [CTP] B/C) and 66 (49.6 %) had experienced decompensation. Overall, 205 procedures were performed in 60 patients and procedure-related bleedings occurred in 7(11.7 %) patients. Additionally, 38 (28.6 %) patients experienced spontaneous (15 minor, 23 major) bleedings during a median follow-up of 10.5 (IQR: 4.0-27.8) months. Spontaneous bleedings in ACLD patients were more common in CTP-B/C (at 12 months:36.9 % vs. CTP-A:15.9 %, subdistribution hazard ratio [SHR]: 3.23 [95 %CI: 1.59-6.58], p<0.001), as were major bleedings (at 12 months: 22.0 % vs. 5.0 %, SHR: 5.82 [95 %CI: 2.00-16.90], p<0.001). Importantly, CTP (adjusted SHR: 4.12 [91 %CI: 1.82-9.37], p<0.001), but not the presence of hepatocellular carcinoma or varices, was independently associated with major bleeding during DOAC treatment. Additionally, ACLD patients experiencing bleeding had worse overall survival (at 12 months: 88.9 % vs. 95 % without bleeding; p<0.001). Edoxaban anti-Xa peak levels were higher in patients with CTP-B/C (345 [95 %CI: 169-395] vs. CTP-A:137 [95 %CI: 96-248]ng/ml, p = 0.048), and were associated with lower TM-TGA. Importantly, spontaneous bleeding rates and procedure-related bleedings were comparable to VKA/LMWH patients with CTP-B/C being the only factor independently associated with major bleedings.

Conclusions Anticoagulants including DOACs should be used with caution in patients with advanced liver disease due to a significant rate of spontaneous bleeding events.

P78 Immediate-type hypersensitivity reaction to bulevirtide in a female patient with HBV/HDV-associated compensated cirrhosis

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HDV-coinfection leads to accelerated progression of liver disease in patients with chronic hepatitis B. While vaccination against HBV represents the most important preventive measure for HDV-infection, until recently treatment options for HBV/HDV-coinfection were limited to the off-label use of pegylated interferon (PEG-IFN). Recently, bulevirtide - a new HDV hepatocyte entry-inhibitor - has been licensed for the treatment of HBV/HDV coinfection in Europe. While studies and first real-life data report good drug tolerability and safety, larger cohort data will be needed to discover potential rare adverse events. Our patient is a 35-year old woman of Romanian descent with HBV/HDV-associated compensated cirrhosis (Child Pugh A, no esophageal varices). The patient had been treated with tenofovir (TDF) and PEG-IFN since July 2018 and June 2019, respectively. Due to progressive thrombocytopenia and anemia as well as persisting HDV-viremia under this treatment, PEG-IFN was stopped and the patient was started instead with bulevirtide while continuing on TDF in December 2020. After unremarkable subcutaneous application of the first dose of bulevirtide 2mg at our outpatient clinic, the patient continued self-administered daily treatment according to current recommendations. Six days after initiation of treatment (i.e. after her sixth dose), the patient attended our outpatient clinic again for an unscheduled visit. She reported progressive pruritus and swelling of the upper extremities, of the face and lips as well as dyspnea starting after the third injection of bulevirtide, indicative of type-1 allergic reaction. Treatment with bulevirtide was stopped immediately and the patient recovered fully without any further medical or pharmaceutical intervention. A positive prick- and intracutaneous skin test reaction confirmed an immediate hypersensitivity response induced by injections of bulevirtide in this patient. While no immediate-type hypersensitivity reactions to bulevirtide have been reported in clinical trials and first real life applications, informing patients about this potential life-threatening adverse event seems warranted.

P79 COVID-19 vaccination in patients with autoimmune hepatitis

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Background Coronavirus disease (COVID)-19 caused by SARS-CoV-2 first emerged in December 2019 and soon became pandemic. Management of patients with autoimmune hepatitis (AIH) receiving immunosuppressive therapy has been challenging due to the potentially aggravated course of viral infection and lack of evidence-based treatment recommendations. Although vaccine development has been a major step in fighting the pandemic, its efficacy in immunosuppressed patients has not been sufficiently evaluated.

Methods Patients with AIH receiving azathioprine underwent vaccination against SARS-CoV-2 with mRNA-1273 (Moderna Biotech) and were compared to an age- and sex-matched control group without immunosuppression. Antibody titers were analyzed at the day of the first vaccination (baseline) and second vaccination (day 35) using an RBD enzyme-linked immunosorbent assay and SARS-CoV-2 neutralization assays using wildtype and pseudotyped viruses. On day 70, both, the antibody titer as well as the presence of SARS-CoV-2 specific T cells directed against the spike (S) and nucleocapsid (N) proteins assessed by an interferon gamma release assay (IGRA) will be measured.

Results To date, 6 patients (mean age 56.2 years) with AIH as well as 25 healthy controls (mean age 60.2 years) were enrolled. There was a significant increase of antibody titers in both groups (AIH baseline: 1.4 ± 0.5 vs. day 35: 98,9 ± 119,6; p <0.001; controls baseline: 1.3 ± 0.7 vs. day 35: 171,1 ± 157,5; p <0.001). Contrarily, when comparing absolute values between both groups, there was no significant difference at baseline (p = 0.412) or at day 35 (p = 0.117) as well as the respective delta between both time points (p = 0.105). Antibody titers and SARS-CoV-2 specific T cell immunity at day 70 remain to be analyzed.

Conclusion Vaccination with mRNA-1273 induces a significant seroconversion in AIH patients receiving immunosuppressive therapy with azathioprine.

P80 Repeated episodes of severe metamizole-induced hepatotoxicity

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Metamizole is a widely used drug. A number of drug interactions and adverse events are well noticed and reported. Regardless of its extensive hepatic metabolism, there is only scarce evidence of hepatotoxicity and metamizol-

induced liver injury, of which an idiosyncratic, immuno-allergic mechanism has been suggested. We report the case of a woman with 3 episodes of severe suspected DILI with biochemical ALF, probably caused by toxic metabolites of metamizol due to pharmacogenetically proven impaired drug metabolism. The first episode of elevated liver enzymes was documented in 2016. The second episode occurred when the patient was hospitalized for analgetic therapy due to intervetrebral disc herniation. She developed etiologically unclear liver disease with ascites, bilirubin 4.8 mg/dl, INR 1.4 and ALT >1300 IU/L. A liver biopsy revealed moderate mixed portal and lobular inflammation with extensive necrosis and interface hepatitis. After exclusion of other causes, a toxic etiology was assumed although no obvious agent could be identified. After complete recovery, a second hospitalization for antibiotic therapy for urinary tract infection in 2020 has been without noticeable liver abnormalities. During a further hospitalization in 2021, a third episode of severe hepatotoxicity with ascites and similar biochemical abnormalities as in the previous episode was observed after administration of antibiotic and analgetic therapy for treatment of pyelonephritis. On grounds of the repeated episodes, pharmacogenetic testing was initiated and revealed very poor metabolizing capacity in CYP3A5, NAT2 and TPMT. Of these enzymes, CYP3A5 and particularly NAT2 have key roles in the hepatic metabolism of metamizole. Considering the pharmacogenetic data, the histologically proven necrotizing hepatitis and correlation of the episodes with administration of metamizole intake, we consider DILI by metabolites of metamizole the cause of the repeated episodes of severe hepatotoxicity. This observation highlights the potential usefulness of pharmacogenetic testing in the diagnostic work-up of liver diseases.

P81 Listeria-associated multiple granulomatous liver abscesses complicated by vena cava inferior thrombosis

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Introduction Listeria monocytogenes is a gram-positive bacterium. Ingested with contaminated food this pathogen induces febrile gastroenteritis in healthy individuals and potentially fatal sepsis and meningoencephalitis in neonates, elderly and immunocompromised individuals.

Summary Herein we report a potentially clinical case concerning a 62 year old woman that was admitted to the hospital due to hyperglycemia and unintentional weight loss of 30kg within 7 months. She recalled bouts of diarrhea for 1 week quickly followed by high fever. Besides a blood glucose of 532mg/dl, her lab screen demonstrated mildly elevated cholestatic and inflammation parameters. Guided by unclear alterations in abdominal sonography, magnetic resonance imaging of the liver demonstrated multilocular complex cystoid formations within the right liver lobe, confined to segments VI to VII. Moreover, a thrombotic formation of the vena cava inferior reaching the right liver vein stuck out. Unexpectedly, blood cultures turned out positive for listeria monocytogenes. A liver needle biopsy revealed chronic, lymphoplasmacellular infiltrates with destruction and foveal fibrosis of preexistent liver parenchyma and aggregates of histiozytes like granulomas.Intravenous antibiotic therapy with Ampicillin/Sulbactam and Gentamicin was initiated and maintained for more than three weeks, respectively. Investigations for thrombophilia were negative. The thrombosis was initially treated with a low molecular weight heparin in a weight adapted dosage and then switched to an oral anticoagulation with Edoxaban. In a MRI follow up the abscess-like formations were regressive whereas the thrombosis remained stationary.

Conclusion We present an uncommon case of liver abscesses associated with Listeria monocytogenes. Consistent with other reports an untreated diabetes mellitus Typ II appeared a predisposing factor. Whether or not Listeria was causative for the thrombosis - usually seen in presence of amebic and other abscesses up to date - remains unclear.

P82 Histological lesions can predict response to corticosteroids in patients with severe alcohol-related steatohepatitis

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Background and Aims Liver biopsy is useful to confirm alcohol-related steatohepatitis (ASH) in patients with alcohol-related liver disease (ALD) and clinically suspected alcoholic hepatitis (AH). Current EASL guidelines recommend prednisolone for the treatment of severe AH with Maddrey´s discriminant function (MDF) ≥ 32. The aim of our study was to investigate the potential utility of histologic features of ALD for early prediction of response to corticosteroids as per Lille score.

Method We analyzed data of a multinational cohort of patients with severe AH and MDF ≥ 32. All patients underwent liver biopsy for the confirmation of clinically suspected AH and were treated with prednisolone. Morphological features of ALD including steatosis, activity (contributed by hepatocellular ballooning, Mallory Denk bodies and lobular neutrophils), canalicular and ductular cholestasis as well as fibrosis stage were assessed using the recently developed ALD-specific SALVE grading and staging system. Association of histological variables with response to steroids (Lille score < 0.45) was analyzed by Chi-square test. Logistic regression was performed to ascertain the effects of histological variables on the likelihood of response to steroids.

Results Complete data were available in 119 patients. A Lille score of < 0.45 indicating response to steroids was observed in 72 patients and was associated with steatosis grade ($p = 0.037$) and ductular cholestasis ($p = 0.029$) but not with SALVE fibrosis stage or activity. Logistic regression analysis revealed presence of ductular cholestasis ($p = 0.016$, OR 2.8) and steatosis grade < 2 ($p = 0.047$, OR 2.2) as histologic predictors of a Lille score of ≥ 0.45 indicating non-response to steroids.

Conclusion Liver biopsy may thus be used not only to confirm ASH but also to achieve early prediction of steroid efficacy thus sparing high-risk AH patients from potentially life-threatening side effects of steroid exposure.

P83 VICI-REG - Vienna Cirrhosis registry: A retrospective, epidemiological analysis of cirrhostic patients at a tertiary care center in Vienna, Austria. Preliminary results

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Background In our study we aimed to assess characteristics of patients with advanced chronic liver disease (ACLD) at initial presentation.

Methods We retrospectively included ACLD patients presenting from Q1/2015 until Q1/2020 at a large tertiary care hospital in Vienna. ACLD was defined as (i) presence of gastroesophageal varices, or (ii) presence of ascites, or (iii) transient elastography (TE) ≥15kPa. Etiology, clinical, laboratory and imaging parameters were recorded at presentation (baseline, BL) and at follow-up (FU). Child-Pugh stage (CPS) and MELD were calculated.

Results We included 332 patients with ACLD (241 male, 72.6 %; median age: 55 years). The main etiologies were ALD (138, 41.6 %) and viral hepatitis

(111, 33.4 %). CPS was A in 153 (46.1 %), B in 110 (33.1 %) and C in 69 (20.8 %). Median MELD was 12, 114 (34.3 %) had MELD >15 at presentation. At BL, 193 (58.1 %) had varices - including 33 (9.9 %) patients presenting with variceal bleeding at BL. 129 (38.9 %) patients had ascites - including 4 (1.2 %) with spontaneous bacterial peritonitis. 39 (11.8 %) patients showed encephalopathy. 20 (6.0 %) patients had a liver nodules at BL, 9 patients (2.7 %) had definitive HCC. 11 (3.3 %) had portal vein thrombosis. The median duration of FU was 14 months (IQR: 6.8-28.2). Both median CPS (B7 to B6, p = 0.014) and MELD (12 to 8, p<0.001) improved during FU. Median BL transient elastography (n = 146) was 26.5 kPa decreasing to 16.6 kPa at FU (n = 81, p<0.001). 1 (0.3 %) ACLD patient underwent transplantation. 82 (24.7 %) patients deceased during FU, of which 20 (24.5 %) and 47 (57.3 %) had chronic hepatitis C or ALD, respectively.

Conclusion Many ACLD patients already presented with complications related to portal hypertension, hepatic decompensation, or liver cancer. While HCV-ACLD patients had a considerable potential for improvement after antiviral therapy, most deaths occurred in ALD-ACLD patients.

P84 Zahnärztliche Herdsanierung vor Lebertransplantation - eine retrospektive Studie

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Einleitung Die zahnärztliche Herdsanierung vor Lebertransplantation stellt heutzutage eine gelebte Praxis dar. Auf Grund fehlender Leitlinien und fehlender wissenschaftlicher Evidenz differieren die Konzepte je nach Zentrum und Behandler*in. Weiters ist eine dentale Herdsanierung vor Lebertransplantation oft komplikationsbehaftet und schlicht nicht immer durchführbar. Im Rahmen dieser Studie wurde erfasst, ob, wo und in welchem Ausmaß eine präoperative Herdbefundung und Herdsanierung bei Patient*innen vor Lebertransplantation erfolgt ist und ob etwaige Unterschiede einen Einfluss auf Infektionsgeschehen in den ersten drei postoperativen Monaten hatten.

Material und Methoden Inkludiert wurden alle Patient*innen, die an der Universitätsklinik Graz zwischen 11/2016 und 06/2019 eine Lebertransplantation erhalten haben. Exkludiert wurden all jene, die high-urgent oder innerhalb von 3 Monaten re-transplantiert wurden. Es erfolgte eine retrospektive Erhebung allgemeiner und dentaler Befunde.

Ergebnisse Von 79 in die Studie eingeschlossenen Patient*innen wurde an 52 Patient*innen ein dentaler Herdbefund an der Universitätsklinik Graz erhoben. Zum Zeitpunkt der Lebertransplantation waren 55 Patient*innen dental saniert, 21 fraglich und 3 nicht saniert. Bei 23 Patient*innen zeigte sich ein postoperatives klinisch infektiöses Geschehen, bei 5 Patient*innen eine Blutkultur-positive Infektion. Es zeigte sich kein statistisch signifikanter Zusammenhang zwischen einer dentalen Herdsanierung vor Lebertransplantation und dem Auftreten von Blutkultur-positiven Infektionen. Bei keinen Patient*innen konnte postoperativ eine symptomatische Infektionserkrankung im Mundbereich beobachtet werden. Es zeigte sich ein statistisch signifikanter Zusammenhang zwischen der dentalen Herdsanierung und dem allgemeinen Auftreten einer postoperativen Infektion.

Diskussion Die Empfehlungen zur zahnärztlichen Herdsanierung vor Lebertransplantation beruhen nicht auf wissenschaftlicher Evidenz. Auf Grund diskutierter Confounder ist ein Zusammenhang zwischen der Herdsanierung und postoperativen Infektionen fraglich. Es gilt den möglichen Benefit gegenüber dem damit verbundenen Risiko in weiteren Studien zu untersuchen.

P85 Bacterial spectrum and antibiotic resistance in patients with spontaneous bacterial peritonitis in southern Austria

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Background Patients with decompensated liver cirrhosis enter a state of multi organ and system dysfunction, drastically increasing the risk for bacterial infections, such as SBP. According to recent epidemiologic studies, bacterial spectra and antibiotic resistances vary strongly between different countries. The aim of this retrospective data analysis was to investigate the local bacterial spectrum found in patients suffering from liver cirrhosis in southern Austria and thereby evaluate the effectiveness of guideline proposed antibiotic treatments. Furthermore, we aimed to investigate prevalence, outcome and predictive factors for short-term mortality of SBP.

Methods 86 patients that underwent a total of 670 paracenteses between 2016 and September 2019 at Klinikum Klagenfurt were included into the study. Ascitic fluid cultures were examined for bacterial growth and antibiotic resistance profiles. Data of 25 patients that experienced SBP episodes and 61 non-SBP patients was analyzed for potential predictive parameters for short term mortality and overall survival. Effectiveness of antibiosis was evaluated in 27 cases of SBP.

Results In the analyzed 7 positive ascitic fluid cultures 3 pathogens were of the gram-positive spectrum and 4 of the gram-negative spectrum (Escherichia coli being the most frequent). 1 of the gram-positive isolates was classified as MDR (Vancomycin resistant enterococcus faecium). Recommended first-line antibiotic agents (Piperacillin-Tazobactam or third generation cephalosporins, see table) were effective against SBP in 2/3 of cases. Patients with SBP had a significantly reduced time of survival. A baseline CRP ≥3.5 mg/dL could predict development of SBP.

Conclusion In our population gram-negative bacteria remained responsible for the majority of SBP episodes, as opposed to other recent studies that saw a shift towards gram-positives. We could confirm the previously published increased overall mortality of SBP patients and identified initially elevated CRP as a possible predictor of SBP. Further studies are required to monitor the ever-changing bacterial landscape.

▶ **Tab. 1**

SBP ascites cultures		
n = 7	n	%
gram-positive	3	42.9 %
gram-negative	4	57.1 %

▶ **Tab. 2**

SBP antibiosis effectiveness			
n = 27	used in n cases	effective [n; %]	not effective [n; %]
Piperacillin-Tazobactam/3GCS	12	8; 66.67 %	4; 33.33 %
others	15	12; 80.0 %	3; 20.0 %

P86 Safety and efficacy of direct oral anticoagulants (DOACs) in Budd-Chiari Syndrome (BCS) - an Austrian multicenter study

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Background and Aims In patients with Budd-Chiari Syndrome (BCS) long-term anticoagulation is recommended by current guidelines. Direct oral anticoagulants (DOACs) may simplify patient management due to lack of impact on INR/MELD and no need for monitoring such as with vitamin-K antagonists (VKAs). Here we report our experience with off-label use of DOACs for anticoagulation in BCS.

Methods Efficacy and safety data of DOAC vs. VKA anticoagulant treatment was retrospectively assessed in 40 BCS patients treated at 5 Austrian centers.

Results 38/40 patients were followed from initial BCS diagnosis while 2 patients were followed-up after orthotopic liver transplantation. Mean age at BCS diagnosis was 39.9±13.9years and median MELD 11(9-17). Overall, 60.5 %(23/38) had decompensated liver disease, and 84.2 %(32/38) showed signs of clinically significant portal hypertension (CSPH; n = 20 splenomegaly, n = 23 portosystemic collaterals/varices, n = 22 ascites, n = 2 variceal bleeding). 28.9 %(11/38) had splanchnic/portal vein thrombosis at initial presentation. During a median follow-up of 53 (17-128)months, 20 patients (50 %) received DOAC treatment (edoxaban:9, apixaban:4, rivaroxaban:4, dabigatran:2, sequential treatment:n = 1) for a median of 25 (7-45) months (history of decompensation: n = 15, clinical signs of CSPH: n = 17). 70 % (14/20) patients were switched from LMWH (n = 8) or VKA (n = 6) to DOAC after disease stabilization/improvement, while 30 %(6/20) of BCS patients were directly treated with DOAC. Complete response (EASL criteria) was achieved or maintained in 13/20(65 %) patients (including 3 patients receiving TIPS prior to DOAC initiation), ongoing response in 4 patients while disease progressed in 3 patients (including 2 patients with HCC). Three major bleedings (15 %) occurred during DOAC therapy (n = 2 upper-GI-bleeding, n = 1 HCC rupture), and 7 minor bleedings (n = 3 epistaxis, n = 2 oral cavity, n = 2 hypermenorrhea). Two deaths (n = 1 spontaneous bacterial peritonitis, n = 1 HCC) occurred while on DOAC therapy.

Conclusion DOACs seem to be effective and safe for long-term anticoagulation in patients with BCS, but confirmation by larger prospective studies is needed.

P87 Acute haemodynamic response to intravenous propranolol predicts decompensation and mortality in patients with cirrhosis

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Background & Aims Non-selective beta-blockers (NSBBs) are indicated for the prophylaxis of variceal bleeding. The acute haemodynamic response to intravenous propranolol (ivPROP-R; ≥10 % decrease of hepatic venous pressure gradient (HVPG)) is associated with a reduced risk of variceal bleeding. We explored the prognostic value of ivPROP-R in patients with compensated (cACLD) and decompensated (dACLD) advanced chronic liver disease.

Methods We analyzed prospectively recruited ACLD patients (Vienna Cirrhosis Study, NCT03267615) undergoing HVPG measurements with an intraprocedural assessment of ivPROP-R at baseline.

Results 98 ACLD patients (mean age: 56.4±11.5 years; 69.4 % male; 88.8 % varices; 72.4 % decompensated) with a mean HVPG of 19.9±4.4 mmHg were included. Overall, ivPROP-R was achieved in 57 patients (58.2 %). Carvedilol or propranolol were subsequently prescribed in 63 % and 37 % of patients with ivPROP-R, respectively, but also in 61 % and 39 % of acute non-responders. After a median period of 9.4 (IQR: 5.0-18.1) weeks, the chronic haemodynamic response to oral NSBB treatment was assessed in 54 patients (55.1 %). Sixty-five percent of acute responders also showed a chronic response. Importantly, 50 % of acute non-responders still achieved a chronic HVPG response with oral carvedilol. During a median follow-up of 9.6 (IQR: 6.5-18.2) months, achieving ivPROP-R predicted a lower risk of variceal bleeding (at 12 months: 3.6 % vs. 15 %; log-rank p = 0.038) and was associated with a lower risk of hepatic decompensation (at 12 months: 23 % vs. 33 %; log-rank p = 0.096). ivPROP-R was independently linked to a reduced risk of first/further decompensation in a multivariate analysis (adjusted HR: 0.31; 95 %CI: 0.13-0.70; p = 0.005). Importantly, transplant-free survival tended to be longer in patients with ivPROP-R (34.2, 95 %CI: 29.2-39.2 months vs. 25.2, 95 %CI: 19.8-30.6; log-rank p = 0.191).

Conclusion A single assessment of ivPROP-R is a valuable prognostic marker in patients with ACLD, since achieving ivPROP-R predicted a lower risk of variceal bleeding, hepatic decompensation and death.

P88 Gut microbiome composition in liver cirrhosis is associated with serum bile acid profile

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Background and Aims Gut microbiome plays an important role in bile acid metabolism and bile acids shape microbiome composition. Gut microbiome and bile acid compositions are known to be disturbed in cirrhosis. We showed previously that altered serum bile acid composition in cirrhosis is associated with poor neutrophil function. Here we aimed to study the associations between gut microbiome and serum bile acid compositions in cirrhosis in order to identify the potential targets for modulation of serum bile acid profile.

Method Stool samples were collected from 61 cirrhotic patients and total DNA was isolated with MagnaPure LC DNA Isolation Kit III (Roche, Basel, Switzerland). Sequencing was with the Illumina MiSeq technique (Illumina, Eindhoven, The Netherlands). Serum bile acids were measured with high performance liquid chromatography - high-resolution mass spectrometry. Microbiome data analysis was performed with QIIME1. Spearman correlation and regression analyses, redundancy analysis, random forest were performed to analyze the associations between bile acids and gut microbiome, accounting for confounding of etiology, age and sex.

Results Redundancy analysis identified glycoursodeoxycholic acid (GUDCA), deoxycholic acid (DCA), glycochenodeoxycholic acid (GCDCA) and cholic acid (CA) as explanatory variables for gut microbiome composition at genus or OTU level. Higher Butyricimonas and Ruminococcaceae UCG-014 abundance were associated with higher DCA conjugates levels or relative abundance. Genera Ruminococcaceae NK4A214 group and Ruminococcaceae UCG-005 abundance were increased, when ursodeoxycholic acid (UDCA) level was decreased. Higher Blautia abundance was associated with higher GUDCA relative abundance.

Conclusion Gut microbiome composition is associated with serum bile acid composition in cirrhosis. Modification, e.g. with probiotics, of gut microbiome composition, might be a perspective approach to normalize serum bile acid composition and immune function in cirrhotic patients.

P89 The prognostic value of HVPG-response to non-selective beta-blockers in patients with NASH cirrhosis and varices

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Background & Aims With the global epidemic of obesity, non-alcoholic steatohepatitis (NASH) is becoming an increasingly relevant cause of cirrhosis. Non-selective beta-blockers (NSBB) are recommended for the prophylaxis of variceal bleeding. The prognostic value of a hepatic venous pressure gradient (HVPG)-guided NSBB prophylaxis remains to be investigated in the setting of NASH cirrhosis.

Methods Patients with NASH cirrhosis and varices undergoing HVPG-guided NSBB therapy at the Vienna Hepatic Hemodynamic Lab were included. After the baseline HVPG measurement, the HVPG-response to NSBBs (decrease of ≥10 % from baseline or to HVPG<12mmHg) was evaluated within a median of 52 (IQR:28-71) days. The composite endpoint was defined as variceal bleeding, decompensation, and liver-related death.

Results Thirty-eight patients were included: 69 % men, age: 59±12years, Child-A: 20 (52.6 %), Child-B: 13 (34.2 %), Child-C: 5 (13.2 %), median HVPG: 19.7±4.7mmHg. Seven patients (18.4 %) received propranolol (median dose: 80mg/d) and 31 (81.6 %) carvedilol (12.5mg/d). The mean HVPG-decrease was 26 % (p<0.001) and 21 (55.3 %) patients achieved an HVPG-response to NSBB. Absence of diabetes (aOR: 0.16; p = 0.038) and a higher baseline arterial blood pressure (aOR: 1.07; p = 0.044) predicted an NSBB-response. NSBB-HVPG-responders had fewer decompensations within 90 days than non-responders (n = 1 [5 %] vs. n = 3 [29 %]; log-rank p = 0.172). Child-Pugh stage (B: p = 0.001; C: p<0.001), MELD≥15 (p = 0.021), baseline HVPG≥20mmHg (p = 0.011), but not NSBB-HVPG response, predicted the composite endpoint at 2 years of follow-up. Importantly, all bleeding events occurred in HVPG-NSBB non-responders.

Conclusion HVPG-response to NSBB was achieved in 55.3 % of NASH patients with varices and indicated protection from variceal bleeding. However, only baseline HVPG≥20mmHg, Child-Pugh stage B/C and MELD ≥15, but not HVPG-NSBB response predicted decompensation/death in patients with NASH cirrhosis.

ERRATUM

Gut microbiome composition in liver cirrhosis is associated with serum bile acid profile

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It has been brought to the Publisher's attention that the name of “Leber B” was published incorrectly in this abstract. DOI of the article is DOI: 10.1055/s-0041-1734326. The name has now been updated in the author byline.

AUTOREN INDEX

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