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Full thickness resection device (FTRD): A novel tool for colonoscopic adenoma resection. First clinical experience from two tertiary referral centers in Switzerland.

O1

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Background and study aim: Recently a novel endoscopic tool, the so-called "Full Thickness Resection Device" (FTRD, Ovesco, Germany), has been introduced. FTRD allows colonoscopic full thickness resection (FTR) of certain polyps that are not manageable by established techniques, especially non-lifting lesions measuring up to 30 mm in diameter. In addition, FTR is supposed to have a higher diagnostic accuracy in assessing depth of invasion in early cancer as compared to conventional endoscopic polypectomy techniques. We report our first clinical experience with FTRD procedures, assessing technical success, completeness of resection (R0 status), rate of histologically proven FTR and safety.

Patients and Methods: Retrospective analysis of 19 consecutive patients with colonic polyps treated with FTRD during the period of May 2015 through May 2016.

Results: 13 FTRD procedures were performed in the colon, 6 in the rectum. Indications were adenoma recurrence or residual adenoma with non-lifting sign after previous polypectomy (n=7), staging resection following presumed incomplete polypectomy of early carcinoma (n=6), treatment-naive adenoma with non-lifting sign (n=5) and one adenoma located at the appendiceal orifice (n=1). In one case (polyp at appendiceal orifice) the lesion could not be reached once the FTRD system was mounted, due to diverticulotic narrowing of the sigmoid. In the 18 remaining cases amenable to FTR, resection was en bloc and histologically complete (R0) in 94.4% (17/18) of patients. Complete FTR was achieved in 83.3% (15/18), i.e. 91.7% (11/12) in the colon and 66.7% (4/6) in the rectum. The mean diameter of resection specimens was 2.6 cm (range 1.8-3.2 cm). Two technical failures occurred in the initial phase of the study (one problem of handling, one malfunction of the device). Two post-procedure minor bleedings were seen (one requiring re-colonoscopy and adrenalin injection). Otherwise there were no complications during a one-month-follow-up.

Conclusions: According to these preliminary data, the novel technique of colonoscopic full thickness resection by FTRD appears to be feasible, efficacious and sufficiently safe in the treatment of non-lifting polyps of ≤ 30 mm in diameter. FTR is an adjunct to the armamentarium of established colonoscopic polypectomy techniques, as it offers minimally invasive treatment to a group of patients that would otherwise undergo surgery. Limitations include a lower rate of complete FTR in the rectum as compared to the colon. This has to be taken into account when dealing with dysplastic polyps or early carcinoma, where the purpose of FTR includes assessment of depth of invasion. Further prospective studies will have to corroborate this concept.

Electrical Stimulation (ES) of the Lower Esophageal Sphincter (LES) to address Gastroesophageal Reflux Disease (GERD) in Patients after Sleeve Gastrectomy (SG)

O2

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Background: SG is the most commonly performed bariatric procedure. It results in new-onset GERD and may worsen preexisting GERD. Patients not well controlled with PPI do not have good treatment options except for more invasive, anatomy-altering gastric bypass surgery. LES electrical stimulation therapy has shown to improve outcomes in GERD patients and might provide an alternative to RYGB.

Methods: 9 Patients with LSG and symptomatic GERD despite maximum antireflux- therapy underwent laparoscopic placement for electrodes for ES of LES with hiatal closure if needed and were prospectively recorded. Electrical stimulation was delivered at 5mA, 220uSec pulses in 12 30-minute sessions daily. GERD outcomes pre and post-stimulation were evaluated.

Results: 5 patients were female (56%), median BMI was 41kg/m2 (min 31- max 53). Median time after SG was 3.2 years. There were no perioperative complications; one patient was readmitted for pain. At follow-up after 6 months (n=6), esophageal acid exposure normalized in 5 patients (83%), 2 patients were on PPI for reasons other than GERD.

Conclusions: Preliminary results of patients with refractory GERD after LSG treated with ES of LES revealed this therapy to be safe and efficient. It results in a significant improvement in GERD symptoms and esophageal acid exposure.

Portomesenteric Reconstruction during Whipple Procedures: Feasibility and Rational for on demand intraoperatively Xeno-Pericardial Self-Made Tube Graft

O3

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Objective
Achieving R0 Resection by reconstruction of SMV or SMV-PV in pancreatic tumor has been shown to be associated with low rates of perioperative morbidity and similar survival compared to standard pancreaticoduodenectomy. We evaluated the feasibility and safety of self made tube grafts for venous reconstruction.

Methods
Tension-free end-to-end-anastomosis was not feasible because of advanced portomesenteric infiltration. Selfmade tube grafts were performed on demand. Graft patency was intra- and postoperatively tested by doppler assessment.

Results
Two cases of extensive portomesenteric infiltration in pancreaticoduodenectomy. SMV reconstruction was performed by on demand manufactured interposition xenograft. Venous occlusion was below 30 minutes. No postoperative bleeding or abnormal laboratory testing occured. Intra- and postoperative graft patency were without pathological findings.

Conclusion
On demand manufactured bovine tube xenografts showed to be safe. Selfmade tube grafts offer immediate intraoperative availability without preoperative planing and without additional morbidity and mortality. Beside the procedure is effective in costs it offers equivalent behaviour to autologous grafts in septic complications.

7α-hydroxy-4-cholesten-3-one for Diagnosis and Management of Bile Acid Malabsorption: first year clinical experience.

O4

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Introduction
7α-hydroxy-4-cholesten-3-one (7HCO) is a reliable method to diagnose bile acid malabsorption (BAM). Since 7HCO is an intermediate metabolite in the bile acid synthesis, increased levels reflect bile acid production, which is the case in BAM.

Aims & Methods
We evaluate retrospectively, prospectively collected clinical data during the first year after implementation of a new test using ultra-high performance liquid chromatography coupled to mass spectrometry to measure 7HCO. In adult patients with clinical suspicion of BAM, unexplained diarrhea and a subgroup with obesity 7HCO was measured. Levels < 30 ng/ml are considered as normal values. The decision to treat with cholestyramin was at the discretion of the treating physicians.

Results
We performed 126 7HCO analysis in 112 patients (62% female, mean age 51±16 years) with a mean level of 84±91ng/ml. Cholestyramin treatment was more likely initiated in patients with Crohn's disease (RR 1.8; 95%CI 0.9-3.7) or after ileocecal resection (RR 3.1; 95%CI 1.7-5.7). Diarrhea improved in 60% of patients with a 7HCO level above 40 ng/ml. Thresholds of 60 or 100 ng/ml do not improve prediction of response to cholestyramin treatment

Table: 7HCO measurement in subgroups

Subgroups	Number	Mean [ng/ml]	SD	Range[#]
Diarrhea	79	94*	96	<5 - >300
No diarrhea	33	59*	71	<5 - >300
Cholestyramin treated	27	167[§]	105	11 - >300
Cholestyramin untreated	85	57[§]	67	<5 - >300
Crohn's disease (CD)	18	182	105	13 - >300
Ileocecal resection (IR)	26	197	105	28 - >300
CD + IR	13	214	95	41 - >300
Obese (∅*BMI 39.1kg/m2*)	21	62	49	6 - 244

*p<0.05; [§]p<0.001; [#]Validation Range 5 – 300 ng/mL

Conclusion
A 7HCO measurement above 40 ng/ml seems to be associated with a good response to cholestyramin treatment, which suggests clinical bile acid malabsorption. However, most patients have higher levels, particularly in Crohn's disease after ileocecal resection. These preliminary results warranted confirmation on a larger scale.

Misdiagnosis of a metastatic neuroendocrine tumor of the cecum

O5

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Background
Neuroendocrine tumors of the midgut can vary in their presentation depending on localization and stage. We present a case report where surgery was performed for a supposed metastatic neuroendocrine tumor of the cecum.

Methods
A 73-years-old male patient was sent to additional diagnostics because of slight abdominal pain and rising CRP, no pulmonary or other focuses. An abdominal CT-scan revealed a tumor in the ileocecal area which was PET positive with multiple PET positive lymph nodes and multiple liver metastases, a coloscopy showed a polypoid lesion in the cecum. Due to PET/CT and an elevated chromogranin A we had a strong suspicion of a metastasized carcinoid with local infiltration and locoregional lymphadenopathy. After presentation to our interdisciplinary tumor board we decided to do a hemicolectomy and an intraoperative excision of one of the liver tumors.

Results
Intraoperatively the situs presented an infiltrated and metastasized tumor similar to a cecum carcinoma. Surprisingly the histology showed an inflammation with central caseating necrosis with proof of rod-shaped bacteria. After positive result of mycobacteria in the bronchioalveolar lavage we started the specific drug therapy. The postoperative recovery was uneventful.

Conclusions
Tuberculosis of the cecum is rare and can be misdiagnosed as a malignant tumor. Even if this disease is rarely seen in clinical practice and even if there are no specific (e.g. pulmonary) symptoms, it should be considered in the differential diagnosis of abdominal pain and intestinal tumor.

Population-Based Screening for HBV and HCV Infections: Interim Analysis

O6

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Background and aim: Further improvements in the management of HBV and HCV infections will depend on treatment impact at a population level for which screening is an essential step. Here, we report interim data of an ongoing large-scale screening study for HBV and HCV.

Methods: Individuals between 18 and 80 years attending the pre-operative consultation prior to minor surgery in a general surgical outpatient clinic are being tested for HBsAg, anti-HBc and anti-HCV since November 2014. The presence of anti-HCV was confirmed by an Immunodot test. HBV DNA and HCV RNA are determined in HBsAg- and anti-HCV-positive individuals.

Results: Among 1345 individuals tested so far, two were positive for HBsAg (0.2%) and one of these had detectable HBV DNA. Five individuals were positive for anti-HCV (0.4%) and two of these had detectable HCV RNA. When compared to those without, people with anti-HCV antibodies had already been screened more frequently for HCV (100% vs. 12%, p<0.001) as well as for HBV (80% vs. 20%, p<0.001), had more frequently anti-HBc antibodies (40% vs. 4.5%, p<0.001), and had used intravenous drugs (80% vs. 0.2%, p<0.001), nasal drugs (80% vs. 6.4%, p<0.001), or cannabis (80% vs. 7.3%, p<0.001) more frequently. None of them were immigrant from an endemic area. The median age of individuals with anti-HCV antibodies was not different from those without (49 years [range: 39-62] vs. 44 years [95% CI: 43-45], p=0.6).

Conclusions: This interim analysis of an ongoing population-based screening study shows a lower than expected prevalence of HCV infection. Persons with HCV infection would have been identified by a risk-based screening approach.

Alicaforsen, an antisense inhibitor of ICAM-1, as treatment for left-sided ulcerative colitis and proctitis

O7

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Background: Data on the efficacy of the intercellular adhesion molecule-1 (ICAM-1) antisense oligonucleotide termed alicaforsen in ulcerative colitis (UC) is rather inconsistent. (1) We have recently suggested a role for alicaforsen in chronic refractory pouchitis. (2) This case series analyzes its efficacy in left-sided UC and proctitis.
Methods: We performed a retrospective analysis on all patients who had received at least one dose of alicaforsen for IBD at five referral centers in Switzerland. We assessed the drug`s efficacy in patients treated for left-sided UC and proctitis by comparing clinical and endoscopic disease activity before and after treatment.
Results: We identified 9 patients, who were being treated for left-sided UC or proctitis. Median age was 36 years (range 17-69). Five patients were female (55.6%). All patients received a full 6-week course of a once-daily 240mg alicaforsen enema formulation. Clinical disease activity measured by the partial Mayo score and a 6-point symptom scale (adapted from the Mayo Score) was significantly reduced after treatment (6.0 vs. 1.4, p=0.012 and 3.7 vs. 0.9, p=0.017, respectively). Mean number of stools decreased from 5.7 to 2.4 per day (p=0.018). Fecal calprotectin was considerably reduced after alicaforsen treatment (511.3 vs. 92.3µg/g), however the difference did not reach statistical significance (p=0.068). Clinical improvement was achieved in 8 out of the 9 patients (88.9%). However in 6 of those, a relapse occurred (75%). Mean time from end-of treatment response to relapse was 28 weeks (median 8 weeks, range 1-112). No adverse events were reported.
Conclusions: A 6-week course of alicaforsen seemed to be safe and efficacious in inducing clinical improvement in left-sided UC and proctitis, but was not sufficient for maintaining clinical response. Maintenance therapy or repetitive treatment courses may be needed.

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2. Greuter T, Biedermann L, Rogler G, Sauter B, Seibold F. Alicaforsen, an antisense inhibitor of ICAM-1, as treatment for chronic refractory pouchitis after proctocolectomy: A case series. United European Gastroenterol J. 2016;4(1):97-104.

A Specific Mutation (PDGFRA) Helped Classify an Atypical Inflammatory Fibrinoid Polyp

O8

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Introduction: Inflammatory fibroid polyps (IFP) are rare, benign mesenchymal lesions of the gastrointestinal tract. Recent molecular studies have identified platelet-derived growth factor receptor-α (PDGFRA) mutations, suggesting possible neoplastic qualities to IFPs. IFPs usually demonstrate typical histomorphological features including CD34-positive spindle cells arranged concentrically around submucosal vessels, extension into the mucosa and abundant eosinophils. However, signs of regression can make the diagnosis difficult based on morphology alone.

Case description: We report the case of a 51 year-old female with ulcerative colitis (diagnosed 2007), who underwent colonoscopy for surveillance as well as to assess mucosal healing under anti-TNF therapy. An ileal polyp was found and endoscopically resected.

Results: Conventional histology as well as immunochemistry was not conclusive to categorize this spindle cell tumor (negativity for ckit, DOG1, SMA, S-100, ALK and Stat6, normal expression of β-Catenin, positivity for CD34 initially considered non-specific in context of morphology). Molecular analysis found a mutation in Exon 18 (c.2525A>T) in PDGFRA.

Conclusions: Molecular analysis revealing a PDGFRA-mutation led to the diagnosis of an IFP after other possible lesions (GIST, neural lesion or leiomyoma) were excluded by immunohistochemistry. The absence of the typical appearance could be a result of regressive changes within the polyp. Based on this finding, a CT-scan was performed, which showed no further lesions. We also plan a gastroscopy, as gastric GISTs frequently occur in the recently described PDGFRA mutant syndrome. This entity and possibly genetic counselling should be considered when the diagnosis of IFP is made, something we plan to discuss with the patient.

Prophylactic mesh implantation for prevention of incisional hernia: A randomized controlled trial

O9

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Background
Occurrence of incisional hernia is a frequent complication after open abdominal surgery, which often needs surgical repair. We hypothesized that patients at high risk for development of incisional hernia can benefit from prophylactic mesh implantation during primary surgery.

Methods
A randomized controlled trial was performed in patients undergoing elective open abdominal surgery at our institution. Patients with two or more risk factors (male gender, diagnosis of a malignant tumor, body mass index above 25 kg/m2 and history of previous laparotomy) were included. In the intervention group a double-layered polypropylene mesh was placed intraperitoneally in addition to standard abdominal closure (=control group). The primary endpoint was the incidence of incisional hernia.

Results
169 patients were included in the study, baseline characteristics were similar between the two groups. The cumulative incidence of incisional hernia one year postoperatively was 22% in the control group versus 4% in the intervention group (p=0.01). Perioperative complications were similar between the two groups. Abdominal pain 6 weeks postoperative was reported by 65% of patients in the intervention group versus 44% in the control group (p=0.02). One year postoperatively there was no significant difference in patients reporting abdominal pain.

Conclusions
Prophylactic mesh implantation in patients at risk for incisional hernia is safe and effective to prevent hernia occurrence. Patients with implanted mesh experience more abdominal pain early after operation, however long term pain perception is similar to patients without mesh.

Into the mediastinum and out of the Papilla - minimal invasive extraintestinal endoscopic therapy in two body cavities

O10

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Background: A 48 years old patient with chronic ethylic pancreatitis presented with fever and dysphagia. CT scan revealed a cystic paraesophageal structure and two small retroperitoneal cysts. **Methods:** On transesophageal EUS-FNA pus and elevated amylase confirmed the diagnosis of an infected pancreatic pseudocyst (pp). Subsequently drainage catheters were inserted transesophageally and streptococcus anginosus was treated with iv-penicillin. Using the 10Fr Spyscope-DS, we entered the pp, located and passed the transhiatal fistula and reached the caudally located smaller pp. A guide wire (0.035 inch) was passed under visual guidance through the pp into the pancreatic duct (pd), advanced into the duodenum and extracted orally. By holding it tightly on both ends we were able to place a 5Fr 13cm plastic stent via the pp into the pd and the duodenum. The proximal end was placed visually in the small pp and the distal end in the duodenum. The esophago-cystic access was closed with hemoclipps. **Results:** Subsequently both the thoracic and the abdominal pp collapsed totally and the patient recovered completely. She is without symptoms after removing the stent completely five months later. **Conclusions:** This is the first reported endoscopic procedure passing a single endoscope extra-intestinally into both the thoracic and abdominal cavity. Thus we were able to treat an infected transhiatal pp by precisely placing a stent under visual guidance. The Spyscope-DS technology enables procedures outside the range of normal endoscopes even outside intestinal structures on both sides of the diaphragm.

Adherence to Recommendations and Quality of Endoscopic Colorectal Cancer Surveillance in Long-standing Ulcerative Colitis

O11

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Background: Current guidelines recommend endoscopic CRC screening in UC patients after 8 years of disease duration, with a procedure repeated then every 1-2 years. The aim of this study is to assess the adherence to guidelines and the quality of endoscopy in swiss long-standing UC.

Methods: Retrospective cohort study with patients included in the Swiss IBD cohort.

Results: we analyzed 391 colonoscopies in 94 patients (Men:51.1%, mean age at diagnosis: 30.5 years). 35.6% of the colonoscopies were performed with explicit indication for cancer screening. Out of those colonoscopies, 59.4% occurred after 8 years. Mean (SD) time until the next screening colonoscopy was 2.4 (1.5) years. Quality of colonoscopy was as followed: Caecal intubation 85.2%, good bowel preparation 48.6%, mean withdrawal time 15.8 minutes, chromoendoscopy: 2.6%, mean number of colonic biopsies: 14. Dysplasia/DALM was found in 14 cases (3.6%). Adenoma were found in 13 (3.3%)

Conclusion: Despite current international recommendations, a significant number of patients were not included in a surveillance program. Patients undergoing surveillance colonoscopy were often inadequately prepared and chromoendoscopy was used in a minimal number of patients. Our data suggest that adherence to screening guidelines and endoscopic quality should be promoted and standardized.

Survival of apoptosis-primed activated hepatic fibroblasts is Bcl-xL-dependent

O12

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Background: Activated stromal fibroblasts (ASF) are the main stromal cell population in liver fibrosis and desmoplastic liver cancers and have been implicated in the development of these liver diseases. ASF display an activated phenotype and an increased sensitivity to apoptosis. This 'apoptotic priming' has been linked to changes in the cellular profile of apoptosis regulating Bcl-2 proteins. Targeting of Bcl-2 proteins in ASF could be explored for novel anti-fibrotic and anti-tumor therapies in the liver. Thus, our aim was to investigate the mechanisms of stromal cell activation with focus Bcl-2. **Methods:** For *in vitro* studies, fibroblasts were either treated with platelet derived growth factor (PDGF) alone or in combination with inhibitors of the anti-apoptotic Bcl-2 proteins (BH3 mimetics) and examined for activation and apoptosis induction. To investigate an anti-fibrotic potential of these compounds *in vivo*, the MDR2$^{-/-}$ mouse model of liver fibrosis was employed. **Results:** *In vitro* treatment of fibroblasts with PDGF results in downregulation of Bcl-2 and upregulation of Bax and Bcl-xL. Addition of BH3 mimetics with selective specificity reveals that survival of activated fibroblasts is Bcl-xL-dependent. *In vivo* studies demonstrate that pro-apoptotic BH3 mimetics reduce liver fibrosis in MDR2$^{-/-}$ mice. **Conclusions:** Treatment of **ASF** with **Bcl-xL inhibitors** could represent a potential target for the **therapy** of **liver fibrosis** and desmoplasmic **liver cancers**.

HEV ORF3 Protein Forms Membrane-Associated Oligomers

O13

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Background and aim: Hepatitis E virus (HEV) infection is believed to be the most common cause of acute hepatitis and jaundice in the world. HEV is a positive-strand RNA virus encoding 3 open reading frames (ORFs), namely ORF1, ORF2 and ORF3. The aim of this study is to investigate the structure and function of HEV ORF3 protein, a small, hitherto poorly characterized protein involved in viral particle production and possibly other functions.

Methods: A panel of ORF3 deletion constructs fused to the green fluorescent protein (GFP) were examined by confocal laser scanning microscopy (CLSM) as well as membrane flotation assays. Glycosylation acceptor site tagging was used to define the membrane topology of ORF3 protein. Protein-protein interactions were investigated by co-immunoprecipitation and fluorescence resonance energy transfer (FRET). Wheat germ-based cell-free and mammalian cell expression coupled with mass spectrometry were used to produce and characterize recombinant HEV ORF3 protein.

Results: Sequence analyses revealed the presence of a potential signal peptide and of a transmembrane (TM) segment within the N-terminal half of HEV ORF3 protein. CLSM combined with membrane flotation analyses and glycosylation acceptor site tagging demonstrated the existence of two TM segments of which the first serves as a signal peptide. ORF3 traffics to the plasma membrane to be secreted into the extracellular milieu together with the ORF2 capsid protein. Co-immunoprecipitation and FRET revealed oligomerization of the ORF3 protein through the N-terminal TM segments. Finally, HEV ORF3 proteins produced in cell-free and mammalian cell expression systems displayed different apparent molecular weights. Proteolytic processing or posttranslational modifications possibly explaining this difference are currently being investigated by mass spectrometry.

Conclusions: This study provides a basis for our ongoing efforts aimed at elucidating the three-dimensional structure of the HEV ORF3 protein and its function in the HEV life cycle.

HEV as a Cause of Acute Hepatitis Acquired in Switzerland

O14

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Background: Autochthonous hepatitis E is increasingly recognized as a zoonotic infection in western European countries. Serologic assays have a wide variability in sensitivity and specificity. Therefore, we implemented nucleic acid testing to diagnose and characterize hepatitis E virus (HEV) infection acquired in Switzerland.

Methods: Quantitative HEV RNA determination and genotyping were performed as described previously (Doerig C *et al.* EASL ILC 2014 | J Hepatol 2014;60 Suppl 1:S302) in patients presenting with symptomatic acute hepatitis. Patients with a travel history to an endemic region as well as immunocompromised individuals with chronic hepatitis E were excluded from the present analysis.

Results: Sixty-nine cases of acute hepatitis E were recorded between November 2011 and May 2016; additional cases are still being fully characterized. Median HEV RNA was 6.0×10^4 cp/ml (range, 7-4.6×10^7 cp/ml). Complete serology was available in 59 patients; of these, 4 (7%) were negative for anti-HEV IgM and one was negative for both IgM and IgG. Genotyping was thus far successful in 56 cases, revealing infection with genotype 3 in 52 and with genotype 4 in 4 cases. Median age was 56 years (range, 20-80 years); 53 were men (77%) and 35 of these (66%) were ≥ 50 years old. The clinical course was particularly severe in patients with underlying chronic liver disease, with fatal outcome in two patients with preexisting cirrhosis. At least three cases of brachial neuritis and one case of severe rhabdomyolysis were observed. One patient with brachial neuritis was treated with ribavirin in the acute phase, with a favorable outcome.

Conclusions: Middle-aged and elderly men constitute the majority of patients presenting with symptomatic acute hepatitis E acquired in Switzerland. Isolated cases of HEV genotype 4 infection are currently being further investigated. Brachial neuritis represents a typical extrahepatic manifestation of HEV genotype 3 infection.

Use of a Novel Ultrasonic Vascular Imaging Technique in the Diagnosis of Focal Nodular Hyperplasia

O15

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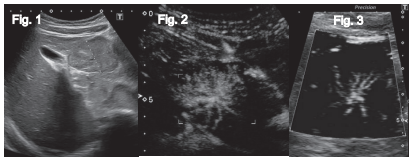
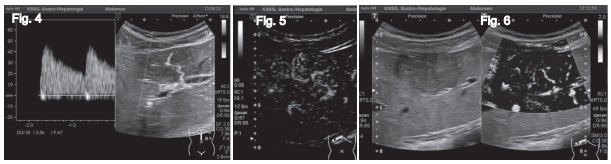
Background: Diagnostic ultrasound in combination with contrast-enhanced ultrasound (CEUS) is accurate for differentiation of benign and malignant focal liver lesions (FLL). Examination of vascular structures and flow dynamics is important in order to establish the differentiation of liver tumors. Conventional colour Doppler has limitations in visualizing microvasculature and low velocity blood flow. CEUS enables the diagnosis of focal nodular hyperplasia (FNH) of the liver by increasing the sensitivity of the detection of vascular structures. Superb Micro-Vascular Imaging (SMI) is a novel ultrasound Doppler technique developed by Toshiba® Medical Systems Corporation. SMI offers a unique algorithm allowing visualization of microvasculature with low velocity flow without the need of a contrast agent. Further advantages of SMI include high resolution imaging, minimal motion artefact and high frame rates. SMI was not studied in FNH lesions, which have a unique vascular supply that is diagnostic in most cases.

Methods: Analysis of FNH lesions in two patients using the novel SMI technique in comparison to Doppler ultrasound and CEUS on a Toshiba TM Aplio 500 Platinum® machine. CEUS was performed by using 1.5 ml of intravenously injected Sonovue® (Bracco Imaging Deutschland GmbH, Konstanz) contrast agent. Representative still images and movie clips were recorded.

Results: An asymptomatic 55 year old woman presented with 4 cm focal liver lesion (Fig. 1). CEUS (Fig. 2) reveals a FNH with typical early arterial spoke-wheel enhancement without washout up to 5 minutes after injection of the contrast agent. Figure 3 demonstrates the spoke-wheel-like vessels by SMI (without contrast agent and independently to time response). In a second case of a 26 year old woman, colour Doppler detected a main arterial vessel in a 3-4 cm hypoechoic FLL with typical arterial flow (Fig. 4). Both, CEUS (Fig. 5) and SMI (Fig. 6) revealed the FNH-typical vascular spoke-wheel pattern.

Conclusion: SMI is an easy to use and intuitive imaging tool that offers the ability to visualize small blood vessels within FNH lesions which are difficult to detect with conventional colour Doppler imaging. SMI provides greater detail and visualization of FNH vasculature by detecting tiny, low-velocity vessels without a contrast agent. In the presented cases, SMI was able to provide the same diagnostic imaging criteria for FNH as CEUS.





Targeting the Unfolded Protein Response Program Exhibits Potent Cytotoxic Effects in Liver Angiosarcoma Cells

O16

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Background: Hepatic angiosarcoma is an aggressive tumour with very dismal prognosis. In the last years, anti-angiogenic drugs targeting signalling pathways in endothelial cells have emerged as promising therapy for angiosarcoma. However, clinical trials with anti-angiogenics showed only minor efficacy. Therefore, new therapeutic approaches targeting other signalling pathways in liver angiosarcoma are needed. Our aim is to characterize our recently described liver angiosarcoma cell line at molecular level in order to target new pathways.

Methods: Molecular characterization was assessed by gene expression analysis using whole transcriptome Affimetrix microarrays. *In vitro* screening for effective compounds was evaluated measuring cell metabolic activity after treatment. Identified compounds were further assessed using *in vitro* tube formation on Matrigel and by flow cytometry. Proteasome activity was assessed by using proteasome-specific activity based probes.

Results: Molecular analysis of our angiosarcoma cell line revealed dysregulated genes associated with the unfolded protein response (UPR) and endoplasmic reticulum (ER) stress program i.e. *Tcp1, Hsp, Ddit3, Eif2ak1*. We exploited these pathways by using the proteasome inhibitors Carfilzomib and LU102 and the protease inhibitor Lopinavir. These inhibitors showed *in vitro* anti-proliferative effects by blocking the active proteasome subunits 5 and 2. Moreover, tube formation capacity of angiosarcoma cells on Matrigel was reduced after treatment. Importantly, flow cytometric analysis after treatment revealed induction of apoptosis-mediated cell death. Interestingly, the combinatory treatment with proteasome inhibitors significantly increased the rate of apoptosis indicating synergistic effects. Indeed, viability assessment of the cell line after combined treatment confirmed synergistic effects exerted by the inhibitors. Similar cytotoxic effects were observed after treating transformed sinusoidal endothelial cells (TSEC) with the inhibitors indicating a general susceptibility of dysplastic cells from liver endothelial origin.

Conclusions: Unfolded protein response program was identified as a target in liver angiosarcoma cells. We have identified clinically available compounds with potent effects against difficult to treat angiosarcoma. Combinatory treatments showed synergistic effects and are therefore promising candidates for liver angiosarcoma treatment currently being tested *in vivo*.

Stump Appendicitis: a Challenging Diagnosis.

Sebastian D. Sgardello, Carolina Bianco, Ahmed Abdelghany, Roberta Codecà, Carlo Coduri, Nicola E. Ghisletta

Background: Stump appendicitis (SA) is the interval repeated inflammation of any residual appendiceal tissue following primary appendectomy. Incomplete removal of appendix leaves a stump that can cause recurrent appendicitis. We report a case of SA treated with laparoscopic completion appendectomy. ***Methods:*** A 39-year-old female was referred to our emergency department with a 4-day history of upper and right lower quadrant abdominal pain (RLQ), raised inflammatory markers, leucocytosis, signs of local peritonism in the RLQ. A CT scan (CTS) showed thickening of the caecum wall and a suspect perforated appendicular stump with abscess formation. 19 years prior, the patient had undergone an open appendectomy in India with an uneventful recovery. Documentation was unavailable. Laparoscopy found a perforated appendicular stump, 23mm in length, with abscess formation and local adhesions. The stump was closed using 2 PDS 2-0 endoloop. Histopathology confirmed suppurative appendicitis with perforation. The patient was discharged on postoperative day 6 with no complications. ***Results:*** Heightened awareness in recognizing SA is fundamental to avoid serious complications. Factors leading to SA are a retrocecal, subserous or duplicated appendix. SA occurs in open and laparoscopic appendectomy irrespective of how the appendeceal stump is closed. Neither inversion of the stump or simple ligation can prevent SA. Treatment is either open or laparoscopic completion appendectomy. An ileocolic resection may be necessary in case of significant inflammation around the ileocecal region. ***Conclusion:*** SA is rare (1 in 50,000 cases). Diagnosis can be challenging and should be considered in cases of RLQ pain post appendectomy. Treatment of choice is open or laparoscopic completion appendectomy. To minimize the risk of SA, in primary appendectomy, correct identification of the base of the appendix is mandatory and appendiceal stump length should be <= 3mm.

O17

Anti-TNF Treatment for Extraintestinal Manifestations of Inflammatory Bowel Disease in the Swiss IBD Cohort Study

O19

Stephan Vavricka, Luc Biedermann, Michael Scharl, Gerhard Rogler, Ekaterina Safroneeva, Alain M. Schoepfer and Thomas Greuter on behalf of the Swiss IBD Cohort Study Group

ABSTRACT

Background: Extraintestinal manifestations (EIM) in inflammatory bowel disease (IBD) patients are frequently observed. However, little is known about the efficacy of anti-TNF treatment in EIM and current recommendations are largely based on expert opinions and case reports. We aimed to assess the effect of three anti-TNF agents (infliximab, adalimumab and certolizumab pegol) on the evolution of EIM.

Methods: Data from the Swiss Inflammatory Bowel Disease Cohort Study (SIBDCS) with 1,249 patients enrolled between January 2006 and March 2010 were analyzed.

Results: Of the 366 patients with at least 1 EIM, 213 (58.2%) were ever treated with an anti-TNF, most of them with one anti-TNF agent (n=147, 69.0%). Of these, 36.2% were male, 77.5% had Crohn's disease (CD), 18.8% ulcerative colitis (UC), and 2.8% indeterminate colitis (IC). Mean age at IBD diagnosis was 27.9 years (4.0-61.5) with a mean age of 44.4 years (20.5-78.2) at enrolment into the SIBDCS. The most frequently reported EIM were peripheral arthritis (75.6%), aphthous stomatitis (23.5%) and axial arthropathy/ankylosing spondylitis (21.6%). Infliximab was used in 63.2%, adalimumab in 22.4% and certolizumab pegol in 14.4% of patients. More than half of the patients showed a clinical response of the underlying EIM to anti-TNF therapy (54.5%). Under infliximab, peripheral arthritis had a clinical response rate of 77.6%, while aphthous stomatitis improved in 77.8%, uveitis in 66.7% and axial arthropathy in 59.1% of patients. Erythema nodosum showed a clinical response in 88.9% of patients. Improvement rates for the subcutaneous agents (adalimumab and certolizumab) were comparable. Only in 4.7% of patients (n=10), EIM presented under anti-TNF treatment for the first time with most of them (69.2%) showing an improvement under continued anti-TNF therapy.

Conclusions: Anti-TNF therapy has a positive effect on most EIM. Occurrence of EIM under anti-TNF is seldom encountered and in only a minority a worsening of the underlying EIM can be observed. Anti-TNF agents are a valuable treatment for EIM.

Assessment of nutritional status through bioelectrical impedance is a key determinant of outcome in alcoholic hepatitis : a prospective study

O18

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Alcoholic hepatitis (AH) is a severe complication of alcoholic liver disease with an elevated mortality rate on the short term in spite of corticosteroids. A concomitant poor nutritional status may contribute to prognosis. Aim : We explored the specific role of malnutrition in a prospective cohort of patients with regards to clinical outcome at 6 months. Methods : a group of 45 patients admitted to hospital with AH (age 52.9 yrs ; MELD score 19.9 $\pm$ 5.3 ; Pugh 10.4 $\pm$ 1.3 ; BMI 26.1 kg/m^2 ; C-reactive protein (CRP) 18.8 $\pm$ 14.9 mg/l ; 62% treated with steroids) were evaluated at baseline using arm muscle circumference (AMC, anthropometric measurement) and phase angle value by bioelectrical impedance (BIA). This analysis is based on the conductivity properties of body tissues, is perfomred at bedside, and is a sensitive and non invasive mean to determine nutritional status. Clinical condition and alcohol relapse were carefuly monitored. Results : Prevalence of malnutrition was 60% (by AMC, $\leq$ 10th percentile) and 74% (by BIA), statistically higher ($p<0.05$) as compared to a group of excessive drinkers without AH (n=20). During follow-up, the mortality was 23%. Alcohol relapse occurred in 28% of patients. Multivariate Cox regression analysis showed that phase angle by BIA was an independent predictor of poor outcome at 6 months (p=0.05, 95%CI [0.26-0.99]. Other variables such as AMC (p=0.07), age (p=0.83), BMI (p=0.34), MELD score (p=0.35), baseline CRP (p=0.48), and alcohol relapse (p=0.42) were not related to survival. Conclusion : in patients with AH, malnutrition assessed through bioimpedance phase angle is highly prevalent and has a negative impact on 6-month survival. Thus, a detailed evaluation of malnutrition should be part of alcoholic liver disease work-up and aggressive nutritional support be provided in affected patients *(supported by FLAGS in Geneva)*

Microbial Profiling of Biopsies from Phenotypically and Genotypically Well-Characterized SIBDC Patients

O20

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The incidence of inflammatory bowel diseases (IBD), including Crohn's disease (CD) and ulcerative colitis (UC), is increasing throughout the world, particularly in developed countries. Although the etiology of IBD remains still largely unknown, recent studies indicate an altered gut microbiota in combination with an aberrant immune response against it are involved in genetically susceptible hosts. Here, we molecularly profiled the intestinal microbiota of phenotypically and genotypically well-characterized Swiss IBD cohort (SIBDC) patients.

A total of 540 biopsy samples from a combined 125 CD and 98 UC patients were processed. The microbiota composition at the site of biopsy was determined by 16S Amplicon sequencing on the Iontorrent platform. Data were analyzed using the QIIME pipeline.

The results obtained so far show that there is a significant reduction of species richness (α-diversity) in CD samples compared to UC samples. Additionally, UniFrac distance between IBD patients (β-diversity) implies the compositional difference between communities. More in-depth analysis demonstrated a higher abundance of Bacteroidetes and Proteobacteria in CD patients versus a higher abundance of Firmicutes and Actinobacteria in UC patients.

The data presented here show that IBD patients are associated with a dysbiosis of the muscosa-associated microbiome detected on biopsies. Combining the microbial profile data with phenotypic and genotypic information from these patients, we next aim to identify possible biomarkers that may help to predict disease predisposition, activity, and responsiveness to therapy.

The maternal microbiota drives early postnatal innate immune development PG1

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Aims: Postnatal colonization of body surfaces and the intestine with microbes has been assumed to drive postnatal immune development. There is evidence that signals originating from commensals during early life or from maternal microbiota before birth are required to shape the neonatal immune system.
Material and methods: Reversible colonization of germ-free mice with an engineered E.coli strain allowed transient colonization of germ-free mice exclusively during pregnancy (gestational colonization). The dams then delivered and nursed their pups germ-free and offspring were never exposed to live bacteria.
Results: Gestational colonization increased intestinal NKp46+ class 3 innate lymphoid cells (ILC3) and F4/80+CD11c+ mononuclear cells in the pups. Intestinal epithelial transcriptional profiles of the offspring were extensively reprogrammed, including increased expression of genes for antibacterial peptides and metabolism of microbial molecules. These effects were independent of Toll-like receptors, but in some cases were dependent on maternal antibodies that retain microbial molecules and transmit them to the offspring during pregnancy and via milk. Using 13C-isotopically fully-labeled E. coli HA107 for gestational colonization and mass spectrometry, we followed specific bacteria-derived metabolites from the mother to the maternal milk and offspring tissues. Gestational bacterial metabolite exchange included natural microbial ligands for the aryl hydrocarbon receptor (AhR). Feeding pregnant mice with the AhR ligand indole-3-carbinol was sufficient to increase intestinal NKp46+ ILC3s in the offspring, revealing the AhR pathway as one important factor in maternal microbiota-dependent shaping of the neonatal immune system. The offspring born to gestationally colonized mothers were primed to avoid inflammatory responses to microbial molecules and limit penetration of intestinal microbes during postnatal colonization.
Conclusion: Our data demonstrate that the maternal microbiota determine the composition and function of neonatal innate immunity.

Impact of bowel cleansing on the mucosa-associated microbiota in healthy volunteers: a pilot trial PG2

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Changes in the microbiota composition induced by bowel preparation have been reported in stool samples. However, it is not yet established whether this is also the case for mucosa-associated microbiome, which is clinically more relevant. Therefore, we investigated mucosal biopsies and luminal content/stool samples harvested before (sigmoidoscopy) and after purging (PicoPrep: Natrium-Picosulfat) using ileo-colonoscopy and sigmoidoscopy within 8, 12 and 24 hours from 3 healthy volunteers in 16S rDNA amplicon sequencing techniques. A marked reduction in abundance of main phyla being present before purging was detected in each volunteer at ileo-colonoscopy and/or at 8 hours later. This was accompanied by an increase of Proteobacteria phyla. Within 24 hours an almost complete restoration of original microbiota in terms of main consortia could be observed.

Conclusion: Purging significantly induces marked changes in the mucosa-associated microbiome. The personal microbiota is being restored to initial microbiata within a day. This underscores the high dynamic nature of human microbiome and its capacity to replenish rapidly.

Circular long-distance endoscopic submucosa dissection in the esophagus for complex multilevel high-grade dysplastic long-segment barrett esophagus: not a garantuee for curation PG3

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Case: 69 y old female patient was referred with long-standing long-segment Barrett`s esophagus C11M11 (Prague classification) and development of high-grade dysplasia (HGD) being detected in a targeted biopsy as well as multi-level low grade dysplasia. After first endoscopic mucosa resection (EMR) of the target lesion other visible lesions were likewise removed by EMR. However, surveillance showed development of more visible lesions and hence, circular long-distance endoscopic submucosa dissection (ESD) was performed showing multiple HGD. However, 9 months later another visible lesion with histologically proven adenocarcinoma was detected and hence, en-bloc esophagectomy was performed revealing a pT1a pN0 (0/39), L1, V0, G1, R0 adenocarcinoma.
Conclusion: Despite an aggressive endoscopic resection approach utilizing a long-distance circular ESD in complex long-segment Barrett`s esophagus with multiple visible lesions this does not indicate curation. Close endoscopic surveillance is mandatory to detect the development of early cancer and provide the appropriate treatment.

Seated Evaluation of anorectal function by High Resolution Manometry: A randomized comparison of measurements in the seated and left lateral positions PG4

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Introduction: High Resolution Anorectal Manometry (HR-ARM) is an emerging test for diagnosis of defecatory disorders. Important concerns remain about the validity of all manometry measurements because a proportion of healthy individuals appear to have dyssynergia during simulated defecation. This maybe because current investigations are usually performed not in the normal upright, seated position (SP), but in the left lateral position (LLP). The effects of position on anorectal function and patient behavior have not been well defined.

Aim: To test the hypothesis that position impacts on HR-ARM and balloon expulsion time (BET) measurements and to assess patient preference for SP vs. LLP.

Methods: Healthy volunteers (HV) and patients with obstructive defecation (OD) and fecal incontinence (FI) were recruited. HR-ARM and BET were performed in randomized order in SP and LLP using a solid-state catheter with 12 circumferential sensors and a rectal balloon secured by a probe holder (Given Imaging, Yoqeam, Israel). Resting tone, “squeeze pressure” on voluntary contraction, recto-anal pressure gradient (RAPG) and BET during simulated defecation were assessed in both positions. Magnetic Resonance Defecography (MRD) in semi-recumbent position was performed in HV and OD as reference standard.

Results: 20 HV (32 ± 15yrs; 11 female), 20 OD patients (OD; 51±18yrs; 14 female; WS 2.3; CCS 13.3) and 20 fecal incontinence (FI; 52 ± 13 yrs; 10 female; Wexner Score (WS) 8.3; Cleveland Constipation Score (CCS) 3.3) were studied. A large majority (53/60) preferred investigation in SP. Resting and squeeze pressure were not affected by position (data not shown). During simulated defecation, abdominal pressure was lower in LLP than SP for OD and FI (Δ-23±7mmHg, p<0.002; Δ-18±6mmHg p<0.003); however, RAPG was lower in LLP only in OD (Δ-58±7, p<0.001). Overall, 7/20 OD and 10/20 HV showed normal simulated defecation in SP but dyssynergia in LLP (p<0.016). Similarly, more individuals had pathological BET (>1 min) in LLP than SP (10 vs. 6 HV; 19 vs. 6 OD; p<0.001). Agreement between HR-ARM and BET with MR Defecography is shown in table.

Conclusions:
There was a preference for investigation in SP. Measurements of resting and squeeze pressure are similar in both positions; however, assessment of simulated defecation by HR-ARM and BET is affected by position, especially in OD patients. Comparison of HR-ARM with MRD suggests more accurate assessment of simulated defecation in the physiologic SP.

Influence of Different Biopsy Forceps Models on Tissue Sampling in Eosinophilic Esophagitis PG5

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Background: Eosinophilic esophagitis (EoE) is a mixed inflammatory and fibrostenotic disease. Unlike superficial inflammatory changes, subepithelial fibrosis is not routinely sampled in esophageal biopsies. This study aims to evaluate the efficacy and safety of deep esophageal sampling with four different biopsy forceps.

Methods: In this cross-sectional study, esophageal biopsies were taken in 30 adult patients by one expert endoscopist in distal esophagus with a static jaw forceps (Olympus, FB-11K-1) and compared to proximal biopsies sampled with a static jaw forceps (Olympus FB-45Q-1), an alligator jaw (Olympus, FB-210K), and a large capacity forceps (Boston-Scientific, Radial Jaw 4). One pathologist calculated the surface area of epithelial and subepithelial layers in H&E-stained biopsies.

Results: Subepithelial tissue was sampled in 96.7% (static jaw FB-11K-1), 92.5% (static jaw FB-45Q-1), 80% (alligator jaw), and 55% (large capacity). The median [IQR] ratio of the surface area of epithelial to subepithelial tissue was 1.07 [0.65-4.465] (static jaw FB-45Q-1), 1.184 [0.608-2.545] (static jaw FB-11K-1), 2.353 [1.312-4.465] (alligator jaw), and 2.71 [1.611-4.858] (large capacity; a ratio of one signifies that equal amounts of epithelial and subepithelial tissue were sampled). A larger surface area of subepithelial tissue was obtained using the static jaw forceps when compared to that using alligator jaw ($p<0.001$ and $p=0.037$) and the large capacity forceps ($p<0.001$). No esophageal perforations occurred.

Conclusions: The static jaw forceps allowed to sample subepithelial tissue in >90% of biopsies and appear to be superior to alligator or large capacity forceps in sampling larger amount of subepithelial tissue.

Caregiver-Assessed EoE Activity in Children Between 3-9 Years of Age Poorly Correlates With Physician Global Assessment, Endoscopic or Histologic Activity PG6

Ekaterina Safroneeva[1], Andreas Limacher[1], Marcel Zwahlen[1], Claudia Kuehni[1], Michael Coslovsky[1], Radek Panczak[1], Nadine Haas[1], Alex Straumann[2], Alain Schoepfer[3]; international Pediatric EEsAI Study Group. [1]ISPM Bern, [2]EoE Center Olten, [3]CHUV Lausanne.

Background: We aimed to evaluate the relationship between caregiver-reported symptom severity of pediatric patients with eosinophilic esophagitis (EoE), the disease activity assessed by the physicians, endoscopic and histologic findings.

Methods: Caregivers of children between 3 and 9 years of age provided an overall assessment of symptom severity (CareGA, 7-day recall period). Children underwent EGD with esophageal biopsy sampling. Physicians evaluated patient medical history, symptoms, EoE-associated endoscopic and histologic findings, and provided an overall assessment of EoE activity (PhysGA). Both CareGA and PhysGA are Likert scales spanning from 0 (inactive EoE) to 10 (very active EoE).

Results: 93 children were included (73% boys, median age 6.0 years). Median CareGA of EoE symptom severity was 2.0 (IQR 0.0-4.0); median PhysGA of EoE activity was 2.0 (IQR 1.0-6.0). CareGA poorly correlated with PhysGA (Spearman's $r=0.01$, $p = 0.892$), peak esophageal eosinophil counts ($r=0.18$, $p=0.17$), and increasing severity of endoscopic features (exudates: $p=0.43$; rings: $p=0.19$; edema: $p=0.53$; furrows: $p=0.07$; strictures: $p=0.03$). PhysGA of EoE overall activity correlated with peak esophageal eosinophil counts ($r=0.81$, $p<0.001$) and increasing severity of endoscopic features (exudates: $p<0.001$; rings: $p=0.015$; edema: $p<0.001$; furrows: $p<0.001$; strictures: $p=0.09$).

Conclusions: Caregiver assessment of EoE symptom severity, in contrast to physician global assessment of EoE activity, poorly correlates with physician global assessment of EoE activity, esophageal eosinophilia, and endoscopic activity. These findings must be taken into account when defining outcomes for clinical trials in young children with EoE.

Development and Validation of an Endoscopy-Based Activity Index for Adults With Eosinophilic Esophagitis PG7

Alain Schoepfer[1], Ekaterina Safroneeva[2], Michael Coslovsky[2], Marcel Zwahlen[2], Claudia Kuehni[2], Radek Panczak[2], Nadine Haas[2], Alex Straumann[3]; international EEsAI Study Group. [1]CHUV Lausanne, [2]ISPM Bern, [3]EoE Center Olten.

Background: The recently published grading system evaluates the presence and severity of exudates, rings, edema, furrows, and strictures (EREFS) in patients with eosinophilic esophagitis (EoE). We aimed to develop and validate an endoscopic score based on the EREFS system.

Methods: Adult EoE patients underwent EGD. Endoscopists recorded the severity of endoscopic features according to EREFS grading. Five expert endoscopists reviewed the grading of EoE-associated endoscopic features and provided an Endoscopist Global Assessment (EndoGA) of endoscopic EoE activity (on a Likert scale from 0 to 10). Linear regressions quantified the way mean EndoGA varied with the severity of endoscopic features. The regression based score was developed in a group of 153 adult EoE patients (72.5% male, median age, 38 years) and validated in an independent group of 120 EoE patients (60.8% male; median age, 40.5 years).

Results: The mean of the difference between the highest and the lowest EndoGA rating provided by the five expert endoscopists for a given patient was 2.5 (IQR 1.0-3.6, range 0-6.5). The predicted EndoGA increased most, if patient had severe rings (regression coefficient of 2.5) and severe white exudates (coefficient of 3.0). In the validation group, the mean difference between EndoGA and EREFS score was 0.13. The proposed EREFS based score ranges from 0 to 9 with features graded as follows: edema (absent=0, present=1), rings (absent=0, mild=1, moderate=2, severe=2.5), white exudates (absent=0, mild=1, severe=3), furrows (absent=0, present=0.5); strictures (absent=0, low-grade=1, intermediate-/high-grade=2).

Conclusions: We developed and validated an EoE endoscopy score based on the EREFS grading system. The utility of the score for the purposes of observational studies and clinical trials needs to be further evaluated.

Title: 13C-labeled bacteria metabolomics reveals the identity of bacterial metabolites in the host and the host metabolic responses. **PG9**

Authors: Yasuhiro Uchimura [1], Tobias Fuhrer [2], Uwe Sauer [2], Kathy D. McCoy [1] and Andrew J. Macpherson [1]

Affiliations:
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Background: A combination of physical barriers and innate and adaptive immunity prevents penetration of live bacteria from the intestines to systemic sites within our bodies. Nevertheless, we have found that bacterial products can propagate throughout the host organism.

Methods: In order to identify bacteria-derived metabolites *in vivo*, we colonized germ-free mice with bacteria that had been fully labeled with carbon-13 and then traced 13C-metabolites in various host sites by mass-spectrometry. In addition, the host metabolic response to bacterial colonization was also analyzed through mass-spectrometry.

Results: We identified bacterial metabolites in more than 25 different host tissues. The pattern of propagation of individual bacterial metabolites depended on their molecular features, such as hydrophobicity. We also found prominent host metabolic responses in the peritoneal cavity and portal organs such as liver and spleen as compared to other sites.

Conclusion: Our study demonstrates that 13C-bacteria metabolomics is a powerful technique to address metabolic relationship between gut microbes and the host.

Role of SpyGlass™-Cholangioscopy: First Clinical Experiences **PG10**

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Background:
Direct cholangioscopy enables not only the direct diagnostic visualisation of the biliary tract, such as the workup of stenosis, but offers also the possibility in treating complicated choledocho- or hepaticolithiasis via cholangioscopic electrohydraulic lithotripsy (EHL). The SpyGlass™ DS cholangioscope (Boston Scientific) is attached to a duodenoscope, inserted into the working channel of the duodenoscope and advanced into the biliary system as a single operator system. It has got a 10Fr diameter and a working channel of 1.2mm. The tip of the SpyGlass™ catheter is steerable in 4 directions.

Methods:
Prospective inclusions of direct cholangioscopies with SpyGlass™ DS cholagioscope at a tertiary referral centre in Switzerland.

Results:
Since September 2015, 14 cholangioscopies were performed in 11 patients (3 female, 8male; mean age 62; ASA I-II; general anaesthesia (3), conscious sedation (11)).
Overall, indications were stenosis (6), hepatico-/choledocholithiasis (4), stent dislocation (2), recurring haemobilia (1) and bile leakage (1).
The following interventions were performed: electrohydraulic lithotripsy (EHL) with stone removal (2), percutaneous transhepatic cholangiography with cholangioscopy via PTC and EHL of hepaticolithiasis (2) in a patient with hepaticolithiasis after Kasai procedure in childhood for biliary atresia, and stent extraction (1).
In diagnostic cholangioscopies, indications were stenosis (6), in one case with known PSC, recurring haemobilia (1), and postoperative bile leakage (1). Visual examination without additional cytology was able to define inflammatory aetiology of stenosis in 5 patients. Additional cytology confirmed this visual diagnosis in 1 case, but was false negative in one case of suspected cholangiocellular carcinoma (CCA) which was confirmed during surgery. In the case of recurring haemobilia with several frustrating prior ERCs, diagnosis of a CCA was made by direct cholangioscopy.

Conclusions:
First experiences with SpyGlass™ -Cholangioscopy in clinical practice show a therapeutic as well as a diagnostic benefit due to its high resolution imaging. Its simple application (single operator system) is a further advantage.

Buried Bumper Syndrome: Tissue Dissection by Biopsy Forceps guided Papillotome **PG11**

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Kantonsspital St. Gallen, Klinik für Gastroenterologie und Hepatologie

Background:
Percutaneous endoscopic gastrostomy (PEG) is a well established and widely used method of nutrition delivery for patients with persistent inability of oral feeding. Buried bumper syndrome (BBS) is a severe late complication of this method, with an estimated incidence of 1%. The typical symptomatic triad of BBS include inability to insert the tube, leckage and loss of patency.
Several techniques to dissect the overgrowing tissue are described, including needle knife dissection, argon plasma coagulation (APC) and papillotome dissection through the shortened cannula.

Methods:
We describe two cases of BBS in which the papillotome dissection technique was adapted by endoscopic biopsy forceps guidance of the papillotome as following: Antibiotic prophylaxis with ceftriaxone was given. The PEG tube was cut 2-3cm over skin level and a guidewire was advanced over the cannula. The papillotome (Ultratome, Boston Scientific) was thereafter advanced over the guidewire and its tip was endoscopically grasped by a forceps (Krokodil, Endo-Flex). While bending and pulling the papillotome, it was positioned as desired by the forceps and the overgrowing tissue was safely dissected in four positions. Subsequently, the liberated internal disc was grasped by the forceps and was pulled into the gastric lumen by additional external force through a savary bougie. The intervention was completed by placement of a gastrotube over the same tract (see video of the complete intervention).

Results:
Two male patients (age 27 with cerebral paresis and age 66 with myotonic dystrophy) with typical symptoms of BBS were endoscopically diagnosed with complete buried disc and persistent fistula orifice.
Interventions were performed under general anaesthesia due to severe comorbidities. Both cases were successfully treated by this adapted method without complications. Interventions lasted 48min and 27min, respectively.

Conclusions:
This adapted method of tissue dissection in BBS by biopsy forceps guided papillotome is easy to perform and seems to be a safe procedure. Guidance of the papillotome allows a precise cutting in the desired directions.

Indications for PEG tube placement predicts short and long term mortality. **PG12**

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Background : Patient with expected short life survival do not benefit from a PEG tube placement. We aim to study the short and long term mortality after PEG tube placement in our service between 2011 and 2014.

Methods : All patients who had a PEG between january 2011 and december 2014 were included. Age, sex, indication for PEG tube placement, discernment, type of sedation, ASA score, endoscopist skills, antiaggregant prescription, biological parameters and causes of death were analysed. Short and long term mortality were defined as death occurring within or after 30 days following PEG procedure. Indication for PEG tube placement were : 1) Swallowing disorders of neurologic origin; 2) ENT neoplasia ; 3) Nutritional support ; 4) Others.

Results : 219 patients had a PEG during the study. Twenty patients (9.1%) died within 30 days. After one year, 71 (32.4%) patients had died. Global survival was 870±45 days. Nutritional support group had the best survival rate with 1276±101 days compared to groups 1, 2 and 4, where survival was 902±57, 779±92, and 456±97 days respectively. In multivariate analysis, indication for PEG was the only parameter significantly associated with both short and long term mortality (p=0.009). Conclusions : Palliative PEG tube placement is associated with significant short and long term mortality. The positive role of PEG as a supportive transient approach for nutritional support is supported by our results. Pulmonary sepsis and progression of the underlying neurologic condition were the main causes of death.

Sensitivity and specifity of impedance planimetry (EndoFLIP®) to reveal functional or structural esophago-gastric junction pathology PG13

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Background: Impedance planimetry (EndoFLIP®) is recently introduced diagnostic tool for testing of esophago-gastric junction (EGJ) distensibility. Aim of this study was to evaluate concordance of EGJ distensibility with endoscopic and manometric findings in patients with dysphagia.

Methods: 74 dysphagic patients (21 females, age 49.4 [39.0-58.4] years) were investigated by esophago-gastro-duodenoscopy (EGD), high-resolution manometry (HRM) and impedance-planimetry.

Results: EndoFLIP demonstrated EGJ width <15 mm in all 32 subjects diagnosed with achalasia by HRM. Impedance planimetry has a sensitivity of 97.5% and a specifity of 75.0% to detect EGJ stenosis or outflow obstruction.

Table 1: Concordance of EGJ stenosis detected by EGD, manometric outflow obstruction and EGJ diameter <15 mm by impedance planimetry (FLIP) in non-achalasia patients.

EGD only	HRM only	FLIP only	EGD & HRM	EGD & FLIP	HRM & FLIP	All	None
0	1	3	0	17	7	5	9

Discussion: EGJ impedance planimetry is a useful diagnostic procedure to clarify the cause of esophageal dysphagia. EGJ opening width <15 mm has excellent sensitivity and high specifity to reveal functional or structural EGJ abnormalities.

Esophago-gastric junction dilation in achalasia patients using a balloon with integrated impedance planimetry imaging (EsoFLIP®) PG14

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Background: Esophago-gastric junction (EGJ) balloon dilation is commonly used to reduce esophageal outflow resistance in achalasia patients. We report our first experience and 12 months outcome with the use of the EsoFLIP®, a dilation device incorporating impedance planimetry imaging of balloon diameter.

Methods: 10 patients (5 females, age 45.9 [39.0-70.1] years) with achalasia underwent balloon dilation of the EGJ using the EsoFLIP® system, fitted with a 30 mm dilation and impedance planimetry imaging balloon. Dilations were performed under manometric pressure monitoring until real time display of balloon reached a 30 mm cylindrical shape.

Results: 10 EsoFLIP® dilations were performed without complications. At 12 (5.3-14.9) months follow-up 6 patients were satisfied with treatment outcome. Eckardt score was significantly lower than before dilation (2.0 [1.0-5.3] vs. 6.0 [5.3-7.5], p=0.028). 4 patients had recurrence of dysphagia, treated by peroral endoscopic myotomy in 2 and repeat dilation in 1.

Discussion:EGJ dilation in achalasia patients using the EsoFLIP® catheter has the advantage of real time imaging of balloon shape, aiding in catheter placement and monitoring the extent of dilation.

Comparison of impedance planimetry (EndoFLIP®) and videofluoroscopy for evaluation of esophagogastric junction opening width. PG15

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Background: Impedance planimetry (EndoFLIP®) is a diagnostic procedure to test esophageal distensibility. In this study impedance planimetry and videofluoroscopy were compared for the evaluation of esophagogastric junction (EGJ) opening width in dysphagia patients.

Methods: In 56 patients (40 males, age 50.2 [range 18-83] years) both impedance planimetry and videofluoroscopic swallow studies, followed by a transit test of a 14mm-tablet, were performed within 90 days. EGJ diameters estimated by impedance planimetry were compared to the corresponding results of videofluoroscopic examinations and passage of a 14mm test tablet into the stomach.

Results: A significant correlation between EGJ diameter ≤15.0 mm by impedance planimetry and tablet impaction was found (r=0.31, p=0.02). Impaction of the tablet occurred in 31/56 patients. Nine patients showed a moderate delay (>15s), three a short delay (≤15s), and 13 no delay of tablet passage.

Discussion: Impedance planimetry and esophageal videofluoroscopy correlate significantly regarding tablet impaction and esophagogastric junction opening during deglutition. Impedance planimetry and a videofluoroscopic transit test of standardized 14mm tablet are useful in demonstrating esophageal outflow obstruction in dysphagic patients.

A Rare Case of Collagenous Gastritis PG16

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Background: Collagenous gastritis is defined histologically by a subepithelial collagen band of more than 10 µm thickness and an infiltration of inflammatory cells in the lamina propria. The disease was first discovered in 1989 and is extremely rare: only 60 cases have been described in the English literature so far. There is no standardized therapy due to the lack of randomized controlled studies.

Results: A 24-year-old female patient reported alternating diarrhea and constipation as well as intermittent abdominal cramps for at least one year and a slight body weight loss during the past weeks. Laboratory findings showed an elevated calprotectin (513 mg/kg) without further abnormalities. Colonoscopy revealed normal endoscopic and histological findings. Gastroscopy revealed multiple nodularities in the gastric corpus and a surrounding mucosa that appeared to be atrophic. Histological findings showed a thickened subepithelial collagenous band as well as an increased infiltrate of eosinophils, plasma cells and scattered neutrophils in the lamina propria. Therapy with a proton pump inhibitor as well as oral budesonide was initiated.

Conclusion: Two types of collagenous gastritis are suggested in the literature: a pediatric type with upper gastrointestinal symptoms and an adult type with chronic diarrhea due to an association with coexisting collagenous colitis. While our patient showed no histological involvement of the colon, she did present with diarrhea, making a definitive association with one of the types difficult. Further reports and studies are warranted to better understand the mechanisms of this rare entity.

AbbVie IBD Grant 2015 Poster PG17

Mucosal Consequences of Systemic Antimicrobial CD4$^+$ T Cell Reactivity

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Background: Healthy host-microbial mutualism relies on compartmentalization and proper regulation of systemic and mucosal immune responses. However, systemic bacteraemias occur frequently, for example due to reduction in barrier function by use of non-steroidal anti-inflammatory drugs (NSAID), resulting in induction of systemic antimicrobial immune reactivity. Importantly, systemic hyper-reactive CD4$^+$ T cells might be involved in the pathogenicity or chronicity of inflammatory bowel diseases (IBD).

Methods: We generated a genetically modified *Escherichia coli* strain expressing a defined T helper cell epitope to study antigen-specific systemic antimicrobial CD4$^+$ T cells in gnotobiotic mouse models.

Results: We found that the presence of systemic antigen-specific antimicrobial CD4$^+$ T cells resulted in massively increased bacterial translocation during dextran sodium sulfate (DSS) colitis. Interestingly, this effect was mediated by the presence of a single cognate bacterial neo-antigen peptide as T helper cell epitope.

Conclusions: Systemic antimicrobial CD4$^+$ T cell reactivity can impact adversely on mucosal integrity and homeostasis under conditions of reduced barrier function.

The effects of diet on intestinal microbiota in a gnotobiotic mouse model PG18

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Background
The importance of the microbiota in influencing health and disease of the host is well accepted. Indeed, numerous medical conditions related to a Western lifestyle have been associated with a disturbed microbiota. However, the mechanisms driving this relationship remain unexplained. As diet is known to be a major force shaping both the microbiota and the host, we addressed the effects of a fat-enriched and a starch-enriched diet on the murine intestinal microbiota.

Methods
Gnotobiotic animals represent an optimal model to study the interactions between the host and its microbiota. We fed mice colonized with 12 defined bacteria species two purified diets, enriched either in fat or in starch and compared them to a group fed a conventional chow, containing more complex carbohydrates and more microbiota-accessible fibers. We then investigated the impact of the different diets on the microbiota. Metagenomics analysis allowed us to investigate composition of the microbiota along the gut as well as the growth dynamics of each single species whereas bacterial metatranscriptomics analysis allowed us to address the gene expression profile of the different bacteria under the three conditions.

Results
Only mice fed the fat diet developed obesity and impaired fasting glucose. Germ-free control mice fed the fat diet remained lean. The microbiota composition was heavily altered by the nature of the diet (purified vs chow) but was independent of the fat or starch content, as mice fed with either starch or fat diet harboured a similar microbiota composition. The changes induced by a diet switch occurred very quickly after only one day. In contrast, the growth dynamics and the gene expression profile of most species was dependent on the exact nature and composition of the food.

Conclusions
The nature of the diet (purified ingredients vs conventional plant-based chow) is crucial in shaping microbial composition and has a greater effect than the fat or starch content. Therefore, microbial composition is not crucial in the pathogenesis of metabolic syndrome in our model. However, the massive changes in the growth rate and gene expression profile that have been observed in all conditions will allow us to better understand how despite a similar microbiota composition, mice fed the fat diet develop a different phenotype than their starch diet fed counterparts.

Coating of commensal microorganisms by SIgA may favor commensal-host mutualism by diminishing the bacterial stress responses PG19

Hai Li, Kathy McCoy, Andrew Macpherson

Background:
Sectretory IgA (SIgA) is a key component of mucosal immune system. It has been shown involved in gut barrier protection by excluding the direct contact of pathogens and pathoboints to intestinal epithelium It is well known that a huge amount of IgA is secreted into gut lumen and much of them specific to inhabiting commensal bacteria, and SIgA can be detected on the surface of a large population of gut bacteria, jet it is still elusive what function it has in commensal-host mutualism.

Methods:
To investigate the function of SIgA, auxotrophic *E. coli* HA107 were used to induce specific IgA secretion in C57BL/6 and no antibody control J heavy chain knockout mice. *E. coli* MG1655 were then administrated to mice and bacterial RNA were isolated from different gut compartments and sequenced.

Results:
By comparing IgA coated and non-coated bacterial transcriptional patterns, we show that the IgA coating reduces the bacterial oxidative stress response, especially in colonic mucus. Further studies determine bile acid is one of the inducer of bacterial stress in the gut.

Conclusions:
Our primary data showed the bacteria in the gut is stressed likely by host-derived bile acids and SIgA diminishes bacterial stress. We are trying to figure out the relation between the protection role of IgA and bile acid induced the bacterial stress responses.

Influence of hypoxia on healthy volunteers and patients with inflammatory bowel disease PG20

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Background and Aims: Hypoxia can induce inflammation in the gastrointestinal tract and a previous study from our group suggests an impact of hypoxia on the course of inflammatory bowel disease (IBD). We aimed to evaluate prospectively and under standardized conditions what effects hypoxia has on healthy volunteers and on IBD patients.

Methods: Ten healthy volunteers, 11 Crohn's disease (CD) and 9 ulcerative colitis (UC) patients in stable remission underwent a 3 hours exposure to hypoxic conditions simulating an altitude of 4000 meters above sea level in a hyperbaric pressure chamber situated at the Swiss aeromedical centers Dubendorf, Switzerland. Stool samples analyzing calprotectin and microbiotal composition, biopsy samples from the rectosigmoid region and blood samples were repetitively collected and analyzed in conjunction with detailed records of clinical symptoms.

Results: In the healthy volunteer group (median age 24.8 years), no significant changes on the mRN levels of p62 or IL-18 were revealed in biopsies taken from the sigmoid region on the day before the hypoxic chamber (T1), in biopsies taken directly after the hypoxic chamber (T2), as well as in biopsie taken 1 week after the chamber (T3). However, the calprotectin level showed a relevant increase in most volunteers to up to 10 fold of the initial measured value. In CD patients (median age 35.6 years mRNA levels of p62 and IL-18 increased significantly between T1 and T3 (for p62 4.144 fold increase $p<0.05$; for IL-18 7.31 fold increase, $p<0.05$). Furthermore, calprotectin level increased up to 8 fold of the initial measured value. In UC patients (median age 31.1 years), mRNA levels of p62 and IL-18 increased between T1, T2, and T3 but did not reach statistical significance. Calprotectin levels increased up to 18 fold of the initial measured value. One patient in the UC group dropped out of the study because of a flare on T2, another two patients reported increased activity of their disease.

Conclusions: The importance of environmental factors in the pathogenesis including their diseas modifying potential are increasingly recognized in IBD. Understanding molecular and microbiologic consequences of intestinal hypoxia may ultimately derive further insights on the pathogenesis of IB far beyond exposure to low partial oxygen pressure ambient air.

Increased IL-19 Expression in IBD Patients and Colitis Models Indicate Immunosuppressive Function

PG21

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Background: Interleukin (IL)-19, a member of the IL-10 cytokine family, has a rather undefined function. We hypothesized an immunosuppressive role of IL-19 and increased concentrations in inflammatory bowel disease (IBD) patients with active disease. **Methods**: Sera of 30 Cohn's disease (CD) patients and 41 ulcerative colitis (UC) patients were allocated from the Swiss IBD cohort. We measured IL-19 and the other cytokine family members IL-20 and IL-24 by ELISA. The function of IL-19 was further investigated with a newly generated IL-19 KO mouse strain. **Results:** Increased IL-19 and IL-20 but not IL-24 concentrations were observed in sera from IBD patients with active disease, correlating with serum CRP levels and inversely associated with patient's age. Furthermore, Dextran Sodium Sulfate (DSS) colitis leads to an increased IL-19 expression. Bone-marrow derived macrophages but not dendritic cells has been identified as the cellular source for IL-19. Stimulation with Toll-like receptor (TLR) 2, 4 and 9 ligands further up-regulates IL-19 expression by macrophages. Injection of lipopolysaccharide (LPS) leads to increased IL-6 in spleen and liver from IL-19 deficient animals. **Conclusion:** IL-19 expression is increased in IBD patients with active disease and colitis models. Studies with IL-19-deficient mice indicate that IL-19 suppresses inflammatory cytokine responses.

Low Prevalence of Helicobacter pylori Infection with low Antibiotic Resistance in the Swiss Population

PG22

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Background: An infection with *Helicobacter pylori* is of importance for the development of gastritis, peptic ulcer disease and gastric cancer. In the last decade the prevalence and antibiotic resistance has not been studied in Switzerland. **Methods**: In a retrospective cross-sectional study the prevalence of *H. pylori* infection was analyzed in gastroscopy charts and associated histology reports obtained at the Inselspital for the year 2012 (KEK number: BE 135/15). **Results:** In 184 out of 945 patients an infection with *H. pylori* was diagnosed based on gastroscopy reports an infection with *H. pylori* was observed. Fourteen percent of the native Swiss population was infected. Higher prevalence was observed in immigrants with the highest prevalence in immigrants originating from Latin America. The prevalence is low in young people, peaks at an age between 40 and 60 years and declines in old people. In contrast to the Swiss population, immigrants have the highest prevalence at age < 20 years, which declines with age. The infection with *H. pylori* is associated with a higher prevalence of gastritis, peptic ulcer disease and gastric cancer. After eradication with standard therapy (amoxicillin, clarithromycin, pantoprazole) only 14 patients were followed up, in which a successful eradication was documented with a 13C urea breath test. In only one patient antimicrobial resistance was tested revealing resistance to metronidazole and clarithromycin. **Conclusion:** We observed a low prevalence of *H. pylori* in the Swiss population.

Neural control of the esophagogastric junction- Is there a nitrergic innervation of motor endplates in the crural diaphragm of piglets?

PG23

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Background
The crural diaphragm (CD) and the lower esophageal sphincter (LES) form the antireflux barrier of the esophagogastric junction (EGJ). Both muscles are simultaneously inhibited during swallowing and transient LES relaxation, the latter is often accompanied by gastroesophageal reflux. The neural control of both muscles is of interest as they show different composition and innervation. The underlying mechanism is still not fully understood but recent findings describe a possible peripheral mechanism based on the action of nitric oxide (NO) and/or additional vagal fibres that innervate the CD. This study aims to find evidence for a nitrergic co-innervation of motor endplates (MEPs) in the CD in order to gain more insight into the neural control of the EGJ in piglets.

Methods
Tissue blocks from two piglets were processed for cryosectioning and comprised esophageal as well as crural and costal diaphragm samples. The morphological investigations included NADPH-diaphorase- and AChE staining and fluorescence immunohistochemistry with antibodies against neuronal nitric oxide synthase (nNOS) and vesicular acetylcholine transporter (vAChT).

Results
Nitrergic co-innervation of MEPs in the CD of piglets could not be confirmed so far, whereas the already known co-innervation in the esophagus could be shown in piglets.

Conclusion
The morphological base for a peripheral mechanism at the EGJ in piglets could not be confirmed in this study, which points to other mechanisms of neural control, possibly via vagal fibres.

Electrical Stimulation (ES) of the Lower Esophageal Sphincter (LES) to address Gastroesophageal Reflux Disease (GERD)

PG24

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Background: Fundoplication is an effective treatment for GERD, but is associated with adverse effects, mainly dysphagia, pain and gas-bloat syndrome. ES of LES might provide an alternative as it lacks those complications.

Methods: 7 Patients with GERD at least partially responsive to proton pump inhibitors (PPI) and esophagitis LA Grade A-C received ES of LES after laparoscopic placement of electrodes (20 Hz, 215 µs, 3 – 8 mA in multiple 30-minute sessions). Patients were followed-up with daily symptom and medication diaries, and 24h-impedance-manometry (imp-pH) after 6 months.

Results: Median follow-up was 12 months (min 3 - max 42). There were no major peri- or postoperative complications. Median preoperative esophageal pH<4 was 9.6% (5.0-14), median resting LES pressure (LESP) 7mmHg (0-16). Ineffective esophageal motility was present in 6 patients (86%). Postoperative pH<4 (n=5) was 3.5% (2.1-5.9), LESP 22.8 (9 – 34). After 6 months, 5 patients were completely off PPI. No patient complained of dysphagia or pain.

Conclusions: ES of LES leads to enhanced LES pressures and decreased esophageal acid exposure. It is a safe and effective treatment for GERD and without the typical adverse effects of traditional antireflux surgery.

PG25

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Combined endoscopic treatment of Barrett's esophagus (BE) with dysplasia: Single center's outcome data

Background: Endoscopic treatment with endoscopic mucosal resection (EMR) and Radiofrequency ablation (RFA) represents a standard treatment of dysplastic BE. Randomized studies have shown efficacy in selected patient groups. Long-term follow-up results are still awaited. We present outcome data from a Barrett's cohort at the Kantonsspital St. Gallen.
Methods: Patients were included consecutively for combined endoscopic treatment from 2009 – 2015. After EMR of nodular lesions RFA was performed with the balloon (HALO 360) and sectorial device (HALO 90). Patients were surveyed thereafter at a 3 months interval until complete eradication, followed by two 6 months and 12 months interval. Outcome parameters were complete reepithelialisation without dysplasia or resistance or recurrence of dysplasia.
Results: 58 patients were included. Mean age at first intervention was 62 years (range 47-85 years); 14% (8) were female. 40% (23) presented with adenocarcinoma (CA), 53% (31) with high grade dysplasia (HGD) and 7% (4) with low grade dysplasia (LGD). 10% (6) patients underwent surgical resection after EMR, 90% (52) were eligible for endoscopic treatment only. 27% (14) had RFA, 15% (8) EMR and 58% (30) had combined treatment with EMR and RFA. 100% (4) of the LGD-group, 84% (26) of the HGD-group, and 90% (18) of the endoscopic CA-group achieved complete reepithelialisation or no more dysplasia. Resistant or recurrent dysplasia was observed in 8% (4).
Conclusion: Combined endoscopic treatment is a highly effective therapy with 92% success rate, short surveillance intervals are needed to detect early recurrence of dysplasia and resistance to treatment.

PG26

A Rare Case of Mid-gastrointestinal Bleeding

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Background: Mid-gastrointestinal bleeding (MGIB) is defined as bleeding located between the papilla and the ileocecal valve. It accounts for 5% of all GIB. The cause of MGIB is manifold and includes vascular, inflammatory, tumorous, diverticular and iatrogenic disorders. Video capsule endoscopy (VCE) as a noninvasive tool has high sensitivity and specificity compared with intraoperative enteroscopy as the standard for detecting a bleeding source in the small bowel. Thus VCE is generally recommended for the evaluation of patients with suspected MGIB prior to the use of more invasive endoscopic techniques.

Case: A 28 year-old women was referred in March 2016 with severe chronic iron deficiency anaemia (IDA) and suspicion of chronic MGIB to perform a VCE after negative upper endoscopy and colonoscopy. In the past she was recurrently treated with iv iron supplementation. Laboratory findings revealed a haemoglobin concentration of 83 g/L. The serum iron and ferritin concentrations as well as the transferrin saturation were low. VCE showed a single blue vascular nodular lesion in the jejunum in the sense of a venous malformation. No other bleeding source was detected.

Conclusions: Vascular malformations are aberrations in the normal vascular architecture. Within the GI tract, they may present with bleeding, secondary IDA and, forming a mass lesion, with intussusception. Angiodysplasia are the most common type of vascular malformations in the GI tract. Venous malformations are much less common. Their treatment is in particular determined by the extent of intestinal involvement and the severity of the disease and ranges from iron supplementation and blood transfusion as a supportive therapy to surgical resection and endoscopic sclerosis in case of more significant hemorrhages.

PG27

Zangenbioptische Colon-Polypektomie erbringt die überraschende Diagnose

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Kasuistik: Eine 82- jährige Patientin wird bei Verdacht auf Pyelonephritis eingewiesen.
Untersuchungsbefund: Es stellt sich eine subfebrile, hämodynamisch stabile Patientin ohne Druck- oder Klopfdolenz urogenital vor. Bei erhöhten Entzündungswerten (CRP 140 mg/l, Leukozyten 13.8 x 10^9/l) ist der Urinstatus unauffällig.

Verlauf: Die Verdachtsdiagnose kann nicht bestätigt werden, es findet sich kein Infektfokus. Es fallen sonografisch aber metastasenverdächtige Leberrundherde auf, Segment III und IV. Die Läsionen werden im CT Abdomen/Thorax bestätigt, zudem stellen sich Osteolysen BWK 7 und Os ilium dar. Gynäkologisch wird ein Mamma-Carcinom ausgeschlossen. Die Gastroskopie ist unauffällig. Coloskopisch zeigt sich nur ein kleiner flacher Polyp im Colon ascendens, dieser wird zangenbioptisch entfernt.

Überraschenderweise ergibt sich aus diesem Biopsat die **Diagnose** eines ALK (anaplastic lymphoma kinase) negativen, anaplastischen grosszelligen T-Zell-Lymphoms.
Im PET-CT zeigt sich erst das gesamte Ausmass der Tumorerkrankung im Lymphom-Stadium IV mit Lebermetastasierung und multiplen ossären Manifestationen im gesamten Stammskelett, nodalen Manifestationen abdominal und retroperitoneal. Jedoch findet sich kein Tumor-Bulk, der auf die primäre Lymphom-Manifestation schliessen liesse.

Unter **Therapie** mit einem altersadaptierten CHOP-Schema hat sich der Zustand der Patienten erfreulicherweise gut gebessert.

Fazit: Während die intestinale Manifestation von NHL- Lymphomen ein seltenes Ereignis ist, wird dies in der Subgruppe der ALK negativen anaplastischen grosszelligen T-Zell-Lymphome häufiger beschrieben. Die Endoskopie sollte beim Staging dazugehören und kann wie es dieser Fall zeigt auch die Diagnose bringen.
Selbst kleine atypisch anmutende makroskopische Befunde können bei der histologischen Aufarbeitung wertvolle Informationen zur Diagnostik beitragen.

PG28

PEG complications: Experiences from a single center

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Background: Since the introduction of percutaneous endoscopic gastrostomy (PEG) in 1980, PEG is a mainstay for the nutrition of patients with limited swallowing by neurological, inflammatory or neoplastic processes. Despite long term experience a quite high rate of complication rate is reported in the literature.

Methods: We analyzed PEG complications from our radio-oncology department from February 2007 to January 2013. Additional cases prospectively recorded from our complication database from August 2014 to May 2016 were included. Complications were categorized and possible causes detected. More than one classification per patient was possible.

Results: We identified 13 cases of the radio-oncology and 9 from the gastroenterological database (n=22). Most patients (18/22, 82%) had head and neck carcinomas. Infections or leakages with local or systemic inflammation were most common (13/23, 57%). Buried bumper occurred in 3 patients, problems related to PEG-insertion in 4 patients and 3 developed illness related problems. Beside 6 cases with technical failures, follow-up problems were present in 10 patients and illness related factors in 9 patients. Infections or leakages mainly occurred in the first week (10/13, 76%).

Conclusion: Beside indication and technical factors, follow up plays a key role in the management of patients with PEG insertion. Most infections and leakages occur in the first week underlining the necessity of early professional handling after insertion.

Is smoking cessation linked to new ulcerative colitis cases? A retrospective cohort-based hypothesis. PG29

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Background: Smoking has a differential effect on inflammatory bowel diseases (IBD); deleterious for Crohn's disease (CD) and protective for ulcerative colitis (UC). Thickness of the mucus layer, immune system (cytokines production), microvasculature and intestinal microbiome are potential mechanistic factors influenced by the nicotine and numerous other substances. It has been hypothesized that smoking cessation is associated with the second peak of diagnosis in UC patients after 50 years old. Our aim was to confirm this hypothesis using data on smoking status at IBD diagnosis.

Methods: Adult IBD patients included in the Swiss IBD cohort from November 2006 to November 2015 were asked about their smoking status at diagnosis. We compared the proportion of former smokers in 10-year groups of UC and CD patients.

Results: 2361 IBD patients (1366 CD, 995 UC) were included in the analysis. Among them 52% of CD and 24% of UC patients were smokers at diagnosis (proportion of smokers in Switzerland (2014): 29%).The higher proportion (66 %) of former smokers at diagnosis was in the 50 to 60 years old group of UC patients compared to only 26% in CD patients between 40 to 50 years old ($p<0.001$). On a gender basis, the higher proportion of former smokers is particularly significant high among male 50-60 years old with UC (68%) and persists among them over 60 years old (52%).

Conclusions: The proportion of former smokers at diagnosis increases dramatically and significantly over years in UC patients compared to CD patients. A peak was reached over 50 years old suggesting an indirect impact of smoking cessation on the second peak of diagnosis in ulcerative colitis.

Determinants of Tobacco Consumption in the Swiss IBD Cohort PG30

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Background: Tobacco consumption is an important environmental factor in inflammatory bowel diseases (IBD). Our aim was to identified characteristics associated with smoking in Crohn's disease (CD) and Ulcerative colitis (UC).

Methods: Adult UC and CD patients included in the Swiss IBD cohort study (SIBDCS) from Nov. 2006 to Nov. 2015 were asked about their smoking status. Patients were separated in two groups (active smokers vs. non-smokers).
A logistic regression analysis was performed with smoking as main outcome.

Results: 999 UC and 1386 CD patients were included in the study. In the univariate analysis, smoking was positively associated with the female gender in CD patients. Smoking CD patients had more stenosis and used significantly more oral Budesonide, whereas UC patients used more topical treatments. A high anxiety and depression score was significantly associated with smoking among CD patients. The use of invalidity insurance was significantly higher in smoking UC and CD patients in the univariate analysis and was confirmed in the multivariate analysis (OR 1.8 [1.1-3.0], $p=0.02$ for UC and OR 3.4 [1.3-9.1], $p=0.015$ for CD).

Conclusion:
After adjustment for disease pattern and activity, the only factor significantly associated with tobacco consumption in IBD patients is the need for invalidity insurance.
This positive association between active smoking and invalidity insurance is, however, not specific to IBD patients but also known in the Swiss population (Suchtmonitoring Schweiz, www.suchtschweiz.ch ; www.addictionsuisse.ch).

What kind of IBD patients succeed in smoking cessation? - Insights from the Swiss IBD Cohort Study - PG31

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Background: Tobacco consumption is known to have a differential effect in Crohn's disease (CD) and Ulcerative colitis (UC). Smoking cessation can transiently worsen disease course in UC whereas it should be beneficial to CD patients. Our aim was to identify whether this effect drives success in smoking cessation.

Methods: Retrospective analysis of prospectively yearly collected data from adult UC and CD patients included in the Swiss IBD cohort study (SIBDCS) from November 2006 to November 2015.

Results: 999 UC and 1368 CD patients were included in the study and separated in three groups (smokers, past-smokers and non-smokers at enrollment). In general, past smokers who succeed in smoking cessation are males, older, with a higher BMI ($p<0.001$). The disease location was less extensive in UC (mostly left sided colitis and proctitis) ($p=0.121$) and less ileal in CD (compared to active CD smokers) ($p=0.009$). Concerning treatment, UC past smokers used significantly more topical treatment and CD past smokers required less anti-TNF and conventional immunosuppressants. The disease severity measured by clinical scores and CRP/albumin showed no significant difference.

Conclusions: UC and CD patients in the Swiss IBD cohort who succeed in smoking cessation seem to be patients with a pattern of disease which is less likely to be influenced by smoking. Further investigations are needed to identify whether this phenotype is due to smoking cessation or likely to ease it.

Protective role of specific pathogen free microbiota in bile duct ligated and CCL_4 treated mice

PH1

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Background: In chronic liver disease the presence of gut-derived bacterial products and the resultant increase in inflammatory cytokines in the splanchnic and systemic circulation may contribute to the progression of fibrosis. However, the composition of the intestinal microbiota and the host-microbe interaction in the development of liver fibrosis remain largely unknown. We hypothesized that fibrosis would be attenuated in a gnotobiotic model of limited intestinal colonization (altered Schaedler flora, ASF) compared to a more complex colonization with specific pathogen free flora (SPF). We aimed to investigate the development of fibrosis and portal hypertension in ASF and SPF mice.

Methods: Liver fibrosis was induced by common bile duct ligation (BDL) for 14 days or intraperitoneal (IP) injection of 20% (dilution in olive oil) carbon tetrachloride (CCL_4) for 10 weeks in ASF or SPF male, C57BL/6 mice. Hemodynamic measurements were performed after 14 days in BDL or 10 weeks in CCL_4 treated mice. Liver histology and collagen deposition were evaluated using Sirius red staining for determination of fibrosis degree. To assess bacterial translocation, mesenteric lymph nodes, spleen and liver were dissected aseptically and then cultured on Luria Bertani agar and blood agar plates for aerobic and anaerobic culture respectively.

Results: There were no differences in portal pressure between sham-operated (controls) ASF or SPF mice. After BDL or CCL_4 treatment portal pressure (PP), portosystemic shunts (PSS) and collagen deposition within the liver showed a significant increase in both groups. However, the increase in portal pressure and degree of fibrosis was significantly higher in ASF than SPF mice:

	14 days Bile duct ligated mice				10 weeks CCL_4(IP) treated mice			
	ASF-sham	ASF-BDL	SPF-sham	SPF-BDL	ASF-control	ASF-CCL_4	SPF-control	SPF-CCL_4
PP cmH_2O	8.4	11.8**	7.2	9.7*	8.5	12.2**	7.4	10.4*
PSS %	0.29	2.91**	0.38	2.42*	0.6	3.5*	0.5	1.8*
Collagen %	0.1	9.6***	0.3	5.2***	1.1	7.6***	0.8	4.3***

(*p < 0.05 **p < 0.005 ***p < 0.005)

Bacterial translocation was significantly higher in ASF-BDL than SPF-BDL mice suggesting that bacterial translocation occurred more frequently in ASF-BDL mice. The increase in the bile infarcts area was significantly higher in ASF mice (ASF-BDL 13.5% vs. SPF-BDL 4.8% *P=0.026*). No significant bacterial translocation was observed in CCL_4 treated mice.

Conclusions: SPF mice presented attenuated fibrosis and portal hypertension compared to ASF mice. Contrary to our hypothesis, these findings suggest that a more complex intestinal bacterial flora may play a hepato-protective role. Our results are in line with studies showing that germ free mice are more susceptible to liver injury and fibrosis suggesting the beneficial role of intestinal microbiota in preventing liver injury (Tabibian *et al.* Hepatology 2016 and Mazagova *et al.* FASEB J 2014).

Alcohol intake increases the risk of hepatocellular carcinoma in hepatitis C virus-related compensated cirrhosis

PH2

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Introduction: Whether alcohol intake increases the risk of complications in patients with HCV-related cirrhosis remains unclear. **Aim**: To determine the impact of alcohol intake and viral eradication on the risk of HCC, decompensation and death.

Patients and methods: Data on alcohol intake and viral eradication were prospectively collected in 192 patients with compensated HCV-related cirrhosis.

Results: 74 patients consumed alcohol (median alcohol intake: 15 g/day); 68 reached viral eradication. During a median follow-up of 58 months, 33 patients developed HCC, 53 experienced at least one decompensation event, and 39 died. The 5-year cumulative incidence rate of HCC was 10.6% (95% CI: 4.6-16.6) in abstainers vs. 23.8% (95% CI: 13.5-34.1) in consumers (p=0.087), and 2.0% (95% CI: 0-5.8) vs. 21.7% (95% CI: 14.2-29.2) in patients with and without viral eradication (p=0.002), respectively. The lowest risk of HCC was observed for patients without alcohol intake and with viral eradication (0%) followed by patients with alcohol intake and viral eradication (6.2% [95% CI: 0-18.4]), patients without alcohol intake and no viral eradication (15.9% [95% CI: 7.1-24.7]), and patients with alcohol intake and no viral eradication (29.2% [95% CI: 16.5-41.9]) (p=0.009). In multivariate analysis, lack of viral eradication and alcohol consumption were associated with the risk of HCC (hazard ratio for alcohol consumption: 3.43, 95% CI: 1.49-7.92, p=0.004).

Conclusion: Light-to-moderate alcohol intake increases the risk of HCC in patients with HCV-related cirrhosis. Patient care should include measures to ensure abstinence.

Diagnosis accuracy of ALT and waist circumference as a screening test for insulin resistance

PH3

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Introduction: ALT and waist circumference are both correlated to insulin resistance. **Objective:** To determine whether ALT provides information in addition to waist circumference for identifying insulin resistance.

Methods: Insulin resistance defined by homeostasis model assessment of insulin resistance index ≥3. A waist circumference ≥80 cm in women and ≥94 cm in men was considered excessive. Elevated ALT were defined using either the usual cut-off or updated cut-offs of 19 U/l in women and 30 U/l in men.

Results: 288 participants without medication affecting insulin concentration were included. 81 (28%) were insulin resistant, 30 (10%) and 98 (34%) had increased ALT using usual and updated cut-offs, respectively, and 218 (76%) had excessive waist circumference. Excessive waist circumference identified 73 insulin resistant subjects. Among subjects with normal waist circumference, insulin resistance was as frequent in participants with normal ALT as in those with increased ALT. Among subjects with excessive waist circumference, insulin resistance was less frequent in participants with normal ALT according to the usual cut-off (31% vs. 56%, p=0.001), and tended to be less frequent in participants with normal ALT according to updated cut-offs (29% vs. 41%, p=0.07) than in those with increased ALT.

Conclusion: ALT is useful for identifying insulin resistance only if waist circumference is excessive. In subjects with excessive waist circumference, insulin resistance is present in more than 40% in women with ALT >19 U/l and in men with ALT >30 U/l, and in more than 50% in individuals with ALT >45 U/l.

Alcoholic liver disease confers a worse prognosis than chronic hepatitis C infection and non-alcoholic fatty liver disease in patients with cirrhosis

PH4

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Introduction: Cirrhosis is a heterogeneous clinical condition that includes patients at wide-ranging stages of severity. The role of the underlying liver disease on patient prognosis remains unclear. **Aim:** To assess the impact of the underlying liver disease on the occurrence of HCC and death.

Patients and methods: Data related to the occurrence of HCC and death were collected during a 21-year period among patients with cirrhosis related to ALD, HCV infection or NAFLD.

Results: 764 patients (526 ALD, 157 HCV, 81 NAFLD, 64% of male, median age 57 years [95% CI: 56-58]) were included. ALD patients were younger than HCV and NAFLD patients (55 vs. 65 vs. 63 years, respectively; p<0.001) and had worse liver function (median MELD score: 9.3 vs. 7.3 vs. 7.5, p<0.001; % of Child-Pugh stage B or C: 48% vs. 8% vs. 16%, respectively; p<0.001). During a median follow-up of 58 months (95% CI: 52-64), 87 patients developed HCC and 380 died. The 10-year cumulative incidence rate of HCC was lower in ALD patients than in HCV and NAFLD patients (8.5% vs. 22.5% vs. 23.5%, respectively, p<0.001). The 10-year cumulative incidence rates of mortality was higher among ALD patients than among HCV and NAFLD patients (58.3% vs. 46.0% vs. 48.4%, respectively; p=0.03). In multivariate analyses, ALD was associated with a reduced risk of HCC (HR: 0.41; 95% CI, 0.22-0.77; p=0.006) but with a higher risk of mortality (HR: 1.57; 95% CI, 1.24-2.00; p<0.001). ALD patients died more frequently from decompensation of cirrhosis (p<0.001).

Conclusion: Despite lower incidence of HCC, patients with ALD-related cirrhosis have a worse outcome than those with chronic HCV infection or NAFLD-related cirrhosis.

Alcohol abstinence improves the prognosis of alcoholic liver disease related cirrhosis in both compensated and decompensated patients

PH5

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Introduction: The primary objective in the management of patients with alcoholic liver disease (ALD) is alcohol abstinence. Whether abstinence has similar impact on mortality in all stages of the disease remains unclear. **Aim:** To assess the impact of abstinence on mortality of patients with ALD-related cirrhosis according to the Child-Pugh stage.

Methods: Data related to death were collected during a 21-year period among patients with cirrhosis related to ALD.

Results: 526 patients (68% of male, median age 55 years [95% CI: 54-56]) were included. 48% of the patients belonged to Child-Pugh stages B or C. Median MELD score was 9.3 (95% CI: 8.6-10.0). During a median follow-up of 54 months (95% CI: 47-59), 273 patients died. Causes of death were hepatocellular carcinoma in 12 cases, liver failure in 178 cases and non-liver related in 83 cases. In multivariate analyses, abstinence was associated with a reduced mortality rate (HR: 0.49; 95% CI, 0.33-0.74, p<0.001) and with a reduced liver-related mortality rate (HR: 0.35; 95% CI, 0.21-0.59, p<0.001). In sensitivity analyses according to Child-Pugh stages, abstinence was associated with reduced mortality in Child-Pugh stage A (HR: 0.40; 95% CI, 0.27-0.59, p<0.001) as well as in stages B and C, (HR: 0.47; 95% CI, 0.26-0.83, p=0.01). Abstinence had a similar impact on liver-related mortality in Child-Pugh stage A (HR: 0.39; 95% CI, 0.22-0.67, p<0.001) as well as in stages B and C (HR: 0.40; 95% CI, 0.21-0.76, p=0.006).

Conclusion: Alcohol abstinence improves the prognosis of alcoholic liver disease related cirrhosis in both compensated and decompensated patients.

Portal vein recanalization using a transhepatic approach is feasible and effective in most of non-cirrhotic patients with porto-mesenteric vein occlusion

PH6

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Introduction: Portal vein occlusion is a condition that can be associated with gastrointestinal bleeding (GIB), portal biliopathy or intestinal ischemic necrosis. Portal vein recanalization (PVR) without shunting the liver could prevent complications related to portal hypertension and restore a physiological portal perfusion. **Aim:** To evaluate the feasibility and the efficacy of PVR in patients with chronic portal vein occlusion.

Methods: All non-cirrhotic patients with non tumoral porto-mesenteric vein occlusion in which PVR was attempted using a transhepatic approach were reviewed.

Results: 13 patients were included (10 men, median age: 53 years [95% IC: 39-58]). Indications for portal vein recanalization were GIB in 4 cases, portal biliopathy in 1 case, reduction of portal pressure before surgery in 4 cases and other reasons in 4 cases. Chronic occlusion involved only the main portal vein in 8 cases, together with the mesenteric and/or the splenic veins in 4 cases and only the mesenteric vein in 1 case. Recanalization was successful in 11 cases (85%). One treatment failure was related to unrecognized obliterative portal veinopathy that made recanalization of the portal vein useless. The median follow-up was 38 months (95% CI: 12-60). Anticoagulation was given to 9 patients after recanalization (69%, median duration: 1 month [95% IC: 0-12]). The actuarial probability of stent permeability was 69% (95% CI: 44-94) at 2 years (78% and 50% in patients who received and who did not receive anticoagulation, p=0.4).

Conclusions: PVR using a transhepatic approach is feasible and effective in most of non-cirrhotic patients with chronic porto-mesenteric vein thrombosis.

Characteristics of patients with HBV and HCV dual infection in a Western European country

PH7

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Introduction: The epidemiology of HBV and HCV infections is continuously evolving. Updated data on dual HBV and HCV infection are still needed **Aims:** To assess the main characteristics of patients with HBV and HCV dual infection, to compare these with those of patients infected with either HBV or HCV and, among patients with dual infection, to assess fibrosis according to HCV replication.

Methods: Data of 23 patients with dual infection were compared to data from 92 age and sex-matched HBV or HCV mono-infected patients.

Results: Patients with dual infection were more often immigrants from Africa or Asia than HCV or HBV patients (52% vs. 20% and 22%, respectively, p=0.01). Intravenous drug use was the route of transmission in 22% of patients with dual infection, which was less frequent than in HCV patients (41%) but more frequent than in HBV patients (0%). Extensive fibrosis or cirrhosis was as frequent among dual infected patients as among those with HCV or chronic hepatitis B infection (19% vs. 29% vs. 14%, respectively, p=0.4), even when fibrosis stage was reported considering the duration of infection. In dual-infected patients, the prevalence of extensive fibrosis or cirrhosis was similar in patients with and without detectable HCV RNA (18% vs. 20%).

Conclusions: Patients with HBV and HCV dual infection were more often immigrants from Africa or Asia and had similar fibrosis stages than HCV or HBV mono-infected patients. In patients with dual infection, extensive fibrosis or cirrhosis was not associated with HCV replication.

Durable Response in the Markers of Cholestasis through 18 Months of Open-Label Long-Term Study of OCA in PBC

PH8

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Background: Obeticholic Acid (OCA) is a selective FXR agonist developed for treatment of primary biliary cholangitis (PBC). 216 patients were randomized and dosed in a double-blind (DB), placebo-controlled, phase 3 PBC trial (POISE); 97% of patients completing the DB phase enrolled in the open-label extension (OLE). The OLE aim is to assess the durability of OCA on the markers of cholestasis and safety.

Methods: Study inclusion criteria: PBC diagnosis, ALP ≥1.67x ULN and/or total bilirubin (bili) >ULN to <2x ULN, stable UDCA dose or unable to tolerate UDCA. During the DB phase, patients were randomized to: daily Placebo (PBO), 5 to 10 mg OCA titration, or 10 mg OCA. In the OLE, all patients were to be initially treated with 5 mg OCA with the option to increase based on response and tolerability every 3 months.

Results: Both OCA groups had significant reductions in ALP (U/L) after 12 months of DB treatment (PBO: -12 ± 80; OCA Titration: -106 ± 87, p<0.0001; 10 mg OCA: -122 ± 75, p<0.0001). This response was durable through an additional 18 months of the OLE (PBO: -98 ±70, p<0.0001 OCA Titration: -111 ± 90, p<0.0001; 10 mg OCA: -107 ± 91, p<0.0001). After 12 months of DB treatment, bili (µmol/L) in the PBO group increased (1.5 ± 4.3, p<0.05), but remained stable in OCA Titration and 10 mg groups (-0.6 ± 3.5 and -1.2 ± 4.7). During the OLE, the change from baseline in bili was sustained (PBO: 1.9 ± 14.0; OCA Titration: -0.3 ± 3.9; 10 mg OCA: -1.3 ± 4.5).

Conclusion: OCA treatment improves liver biochemistry, which is sustained throughout 18 months of the OLE.

REGENERATE: A Global Phase 3, Double-Blind, Randomized, Placebo-Controlled Study of OCA for NASH

PH9

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Background: Nonalcoholic Steatohepatitis (NASH) is a slowly progressive chronic liver disease without approved therapies. Obeticholic Acid (OCA) is a potent FXR agonist that has been shown to improve liver histology in patients with NASH (the FLINT Trial). The objective of the ongoing, randomized, global, Phase 3 study REGENERATE, is to further evaluate the effect of OCA on liver histology and clinical outcomes in patients with NASH and Stage 2-3 fibrosis.

Methods: 2065 patients will be randomized 1:1:1 to 10 mg OCA, 25 mg OCA or placebo, each added to standard of care. An interim analysis at 18 months will evaluate the effect of OCA on liver histology. Total study duration is driven by time required to accrue a total of 264 clinical outcome events (estimated to be ~6 years). Multiple non-invasive assessments of efficacy will be performed. Safety evaluations will include adverse events and laboratory parameters.

Analysis: The interim co-primary liver histology endpoints at 18 months are: (I) improvement in fibrosis by ≥1 stage with no worsening of NASH and (II) resolution of NASH with no worsening in fibrosis stage. The primary endpoint at the end of the study will be assessed by comparing the time to first occurrence of clinical outcome events in each arm.

Conclusions: This robust Phase 3 study is designed to evaluate the effect of OCA on liver histology and effects on progression to cirrhosis, liver-related clinical outcomes and mortality.

Hepatic Manifestations of Wilson Disease - The CHUV Experience 2005-2015

PH10

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Background and aim: Wilson disease (WD) is an inherited disorder of hepatic copper excretion leading to the accumulation of copper in the liver as well as the brain, cornea and other organs. Here, we describe the adult cases of hepatic WD diagnosed in the Division of Gastroenterology and Hepatology of the CHUV between 2005 and 2015.

Methods: Clinical manifestions, results of diagnostic tests, management and outcome of adult patients with hepatic WD were recorded.

Results: Ten new adult cases of hepatic WD were diagnosed in our center between 2005 and 2015. Five were women and 5 men, with a median age at diagnosis of 26 (range, 18-56) years. Four patients presented with acute liver failure (ALF), 4 with persistently elevated liver function tests, and 2 with decompensated cirrhosis. None had neurological manifestations. Only one patient, presenting with ALF, had a Kayser-Fleischer corneal ring. Median ceruloplasmin level at diagnosis was 0.13 (range, < 0.03-0.30) g/l, median 24 h urinary copper excretion 2.6 (range, 0.3-62.0) μmol/24 h, and median hepatic copper concentration 789 (range, 284-1677) μg/g. At least one mutation in the *ATP7B* gene was identified in 8 patients; the results of genetic testing are pending in 2 patients. Allelic frequency of the common H1069Q mutation was 19%. Leipzig scores were ≥ 4 in all patients with a complete diagnostic dataset. Time from presentation to diagnosis varied between 2 hours and 20 years. Three patients presenting with ALF and one with decompensated cirrhosis underwent successful liver transplantation. One patient with ALF recovered under chelator therapy, as predicted by a Dhawan score < 11. D-penicillamine was used as first-line chelator treatment, with a subsequent switch to trientine due to adverse effects in 2 out of 6 patients.

Conclusions: The clinical presentation of hepatic WD is highly variable. Three out of 10 patients were diagnosed at an age > 35 years. A high index of suspicion in clinically compatible situations is key. The Leipzig score is very useful to ascertain a diagnosis of WD.

Intestinal epithelial barrier in liver cirrhosis a role for bile salts in the mucus layer.

PH11

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Pathological bacterial translocation (PBT) in liver cirrhosis (LC) is the pathophysiological hallmark for spontaneous bacterial infections increasing mortality several-fold. Factors known to contribute to PBT in LC are among others an increased intestinal epithelial permeability. Since mucus represents one of the major components of this barrier we hypothesize that i) gut mucus is altered in LC and ii) bile could be a modulator of its production.

For this purpose two different models of experimental LC (Bile duct ligation (BDL) and the chronic treatment with carbon tetrachloride (CCl4)) in mice were used. These two models allowed as to separate the effect of LC in absence of luminal bile in the context of LC under gnotobiotic conditions. Mucus thickness on gut explants, MUC2 immunostaining as well as PAS (Periodic acid–Schiff) staining to visualize goblet cells were utilized.

We have observed a reduction in mucus thickness (Control 101.34µm ± 9.54 vs BDL 77.49µm ± 14.31 in Ileum; control 154.38µm ± 12.51 vs BDL 100.74µm ± 0.6 in proximal colon) and goblet cell numbers in ileum and colon of mice following BDL from 1 to 3 weeks but not in mice treated with CCl4 for 8 weeks as compared to healthy

Biliary cirrhosis with almost complete absence of bile salts in the gut vastly ameliorates the mucus barrier which most likely contributes to enhance PBT in BDL. In addition, this indicates that the bile pool has a role in the goblet cell maturation and differentiation.

Gene expression in the neonatal liver is shaped by maternal microbiota

PH12

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Background: Mammalian embryonic immune system development occurs in the absence of exposure to live bacteria, although the developing fetus is exposed to microbial products from the maternal microbiota. In fact, the maternal microbiota, during pregnancy and during lactation, educates the neonatal intestinal tissue resulting in the newborn's success to control its endogenous colonisation[1]. However, the potential impact of the maternal microbiota on liver development and function in the offspring are not clearly understood.

Methods: Germ-free (GF) mice were transiently colonised with bacteria during pregnancy by oral gavage with the auxotrophic *Escherichia coli* strain HA107. Liver tissue of the offspring was analysed by RNA sequencing (Illumina Hiseq3000 technology) at day 14 after birth.

Results: We have observed that in the neonatal liver the genes preferentially expressed in the offspring of gestational colonized dams are involved in cell adhesion, cell cycle regulation and lipid and retinol metabolism, implying a potential role of the maternal microbiota in the development of a fatty liver. Moreover, in the absence of exposure to maternal microbial products, genes involved in organ development and B cell function are preferentially expressed in the neonatal liver, suggesting that the maternal microbiota may alter the neonatal repertoire of immunoglobulins. Furthermore, RNA sequencing results in offspring born to antibody-deficient dams showed that maternal antibodies are necessary for the maternal-microbiota-dependent induction of genes involved in the proliferation and differentiation of the neonatal liver tissue.

Conclusions: Our results suggest that both the microbiota and antibodies from the mother impact on liver development and function in the neonate.

[1] Gomez de Agüero, M.*, Ganal-Vonarburg, S.C.* et al. Science. 2016.

SAFETY AND RADIATION EXPOSURE IN DIAGNOSTIC HEPATIC HEMODYNAMIC TECHNIQUES

PH13

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Background & Aims. Hepatic venous pressure gradient (HVPG) and transjugular liver biopsy (TJLB) are increasingly used in the management of patients with liver disease. We aimed to describe the safety profile of these procedures, providing data on the intra- and peri-procedure complications, radiation exposure, and amount of iodinated contrast material used.

Methods. In 106 consecutive patients undergoing HVPG and TJLB in a single tertiary care center in the period December 2014-April 2016, data on fluoroscopy time (FT), absorbed radiation dose, equivalent effective dose (mSv), and volume of iodinated contrast material (ICM) were prospectively collected and reviewed, together with clinical and laboratory data. Incidence and severity of procedure-related complications were assessed. In 28 hospitalised patients creatinine values after 72 hours of the procedure were reviewed to identify contrast- induced nephropathy (CIN).

Results. Median effective radiation dose was 5.4 mSv (IQR 10 mSv). 28.3% of patients exceeded an effective exposure of 10 mSv and 9.4% exceeded 20 mSv. Only age and BMI correlated with radiation dose (R=0.327, p=0.001 and R=0.410, p<0.0001 respectively), and only BMI remained independently associated to an exposure over 20 mSv. Procedure-related complications occurred in 8 patients (7.5%), and were minor in 6 cases. Median ICM volume was 12.5 ml. 6/28 patients met the diagnostic criteria for CIN.

Conclusions. HVPG and TJLB show a good safety profile and radiation exposure associated to these procedures is in most of the cases low. In hepatic hemodynamics procedures, efforts should be made to reduce the radiation dose in patients with obesity and to use the minimal possible ICM volume in patients with acute-on-chronic liver failure.

Phenotypic characterisation of human serum albumin (HSA) in cirrhotic patients

PH14

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Background. Albumin undergoes posttranscriptional changes in chronic advanced liver disease. Some albumin isoforms are independently associated with complications of cirrhosis. The aim of our study was to characterise posttranscriptional modifications of albumin in patients with cirrhosis and to determine whether these changes could depend on the aetiology of liver disease.

Methods. Forty-five patients and the corresponding blood samples were classified according to the aetiology of cirrhosis into alcoholic (ASH, n = 15), non-alcoholic steatohepatitis (NASH, n = 15) and hepatitis C virus infection (HCV, n = 15). Blood donors (n = 15) served as controls. Ultra-high performance liquid chromatography coupled to high-resolution mass-spectrometry (UHPLC-MS) and electrospray ionization (ESI) were performed.

Results. Four major isoforms of the native HSA were detected: 'HSA+160' isoform is a glycosylated isoform impairing binding activity of human serum albumin, 'HSA+50' and 'HSA+100' have not yet been described so far and 'HSA+120' is a cysteinylated isoform leading to loss of antioxidant activity of human serum albumin. Significant differences in abundance of the cysteinylated isoform between ASH vs. NASH (p = 0.023) and ASH vs. HCV (p = 0.003) were detected.

Conclusion. There were significant differences regarding the cysteinylated isoform of HSA allowing to discriminate between ASH and NASH and ASH and HCV cirrhosis.

Verteporfin inhibits hepatocellular carcinoma growth in vitro and in vivo

PH15

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Hepatocellular carcinoma (HCC) is one of the most common malignant tumors worldwide. Angiogenesis and the Hippo signaling pathway (hpo) play an important role in the development and progression of HCC. Here we study the effect of Verteporfin (VP) in vitro and in vivo in HCC without prior light activation, focusing particularly on the mode of action of VP.
VP was able to impair HCC cell lines proliferation in a time-dose-dependent manner, as observed by cell viability and clonogenic assays. VP significantly down-regulated the mRNA expression of proliferative genes and differentiation genes interfering with cell-cycle progression and enhancing apoptosis, as assessed by q-PCR and flow cytometry. VP treatment reduced the proliferation and the tube formation capabilities of immortalized microvascular endothelial cell (HMEC-1).
Subcutaneous HCC cell line xenografts in $Rag2^{-/-}\gamma_c^{-/-}$mice showed significantly reduced tumor growth after two weeks of VP treatment. There was a marked decrease of Ki67 positive cells within the tumor tissue and also a statistically significant down-regulation of proliferative genes expression. VP-treated mice showed a significant decrease of CD31+ cells within the tissue as well as a significant down-regulation of VEGF-A mRNA levels. While previous authors suggest the mechanism of action of VP as the result of a direct binding of VP to the YAP/TEAD complex, our results show, that VP interferes with the autophagic flux, co-localizing into the lysosomes, with VP acting as an early stage autophagy inhibitor.
Our results suggest that the antitumor activity of VP in HCC models is due to an inhibition of tumor angiogenesis as well as due to a direct effect on tumor cell proliferation and progression, interfering with the autophagy machinery. Verteporfin may be a promising drug in the treatment of otherwise inoperable, advance HCC.

Deletion of the Hippo core kinases MST1 and MST2 by siRNA rescued liver regeneration in aged mice.

PH16

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Background: The Hippo pathway controls organ size by regulating cell proliferation and apoptosis. We investigated how the Hippo pathway is regulated during the physiological process of liver regeneration after PH to define targets to improve the recovery of non-regenerative livers. Moreover by using a non-regenerative aged mouse model we aim to demonstrate that inhibition of the MST1 and MST2 Hippo core kinases has clinical potential to restore liver regeneration following PH.
Methods: Eight week and 12 month old mice were subjected to 67% PH. Liver regeneration was assessed by quantification of the Ki6 positive hepatocytes and by the liver to body weight ratio and YAI activation. SiRNA was used to knock down MST1 & 2 in the liver.
Results: Following a standard 2/3 PH in young mice we observed an increase in the activation of the core kinases MST1 and LATS1 during the hypertrophic phase of liver regeneration. The return of MST1 and LATS to a steady-state levels coincided with the activation of the YAP targets genes (Birc5, Cyclin B and Foxm1) and with the peak of hepatocytes proliferation. Following PH in aged mice we observed an anomalous activation of the MST1 and LATS kinases and impairment in the YAP target genes activation in the non-regenerating liver. Silencing the core kinases MST1 and MST2 by siRNA femoral vein injection provoked quiescent hepatocytes to re-enter proliferation and restored liver regeneration in aged mice after PH.
Conclusion: Our data suggest that the Hippo pathway is a component of the liver regenerative process and that targeting the Hippo core kinases MST1 and MST2 could be clinically relevant to restore impaired liver regeneration.

Direct antiviral agent (DAA) treatment of chronic HCV Infection results in rapid regression of transient elastography (Fibroscan®) and validated fibrosis markers FIB4 and APRI PH17

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Background
Novel direct antiviral agents (DAA) for chronic hepatitis C have revolutionized the HCV treatment. Rates of sustained virological response (SVR) have improved drastically since introduction of DAA in 2014. Transient Elastography (TE; Fibroscan®) is the non-invasive technique to assess liver stiffness and TE values correlate well with fibrosis stage. Indication for DAA treatment of HCV is often based on TE values. Histological regression of fibrosis has been well documented in long term studies. We here examined the changes in TE values and fibrosis scores within 18 months after successful DAA treatment of HCV.

Methods
500 patients that received a DAA based treatment for chronic HCV were included. TE values recorded prior to therapy (median 3 months, range 0 to 5 years) and within 18 months after HCV therapy were evaluated. Changes in TE values were correlated with FIB4 and APRI Scores where available.

Results
Median TE prior to DAA treatment was 12.6 kPa (IQR 10.9), median TE post treatment 9.0 kPa (IQR 10.8). This equals a TE regression of 28.6%% within 18 months after successful HCV DAA treatment. Further subgroup analyses will be presented.
Liver enzymes correspondingly showed remarkable reduction, often already during DAA treatment. Average FIB4 and APRI prior to therapy were 3.86 and 1.91 respectively. Average post treatment FIB4 was 2.83 while post treatment APRI was 0.77. This results in a decrease in FIB 4 of 26.81% and a regression in APRI of 59.84%. Thus both values fall below the published cutoff values for significant liver fibrosis following successful DAA treatment of chronic HCV.

Conclusion
Patients with SVR after DAA therapy showed a rapid and significant regression of TE values within 18 months after end of treatment. Rapid decrease of TE is in concordance with regression of validated fibrosis scores FIB4 and APRI. It remains to be examined whether this indicates a true regression of fibrosis or merely resolution of chronic liver inflammation with subsequent improvement of laboratory parameters. Further investigation into TE values and correlating liver histology after DAA treatment is warranted.

Real life experience with direct antiviral agent (DAA) treatment of chronic HCV Infection in a Swiss Center PH19

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Background
Treatment of chronic hepatitis C with novel direct antiviral agents (DAA) for chronic hepatitis C has resulted in remarkable rates of sustained virological response (SVR) in large clinical trials. Here we present real life results for all oral HCV treatment with DAA from a Swiss center.

Methods
267 chronic HCV and HCV-HIV co-infected patients who were treated with a DAA based regimen between June 2014 and December 2015 were included. HCV Genotype, fibrosis stage, assessed with liver biopsy or fibroscan prior to treatment, treatment regime and duration, viral load and treatment outcome were recorded. Adverse events where not systematically recorded.

Results
Median Age was 55 (IQR 13, range 23-82) years. 178 (67%) were male patients. According to pre-treatment TE-values 41 (15.4%) had fibrosis stage F0-F1, 30 (11.2%) F2, 60 (22.5%) F3 and 137 (51.3%) F4. Median baseline viral load was 1'400'000 (IQR 3'334'963). Overall SVR rates were 90.6%, 88.2%, 78.4% and 75.0% for Genotypes 1, 2, 3 and 4 respectively. No clinically relevant adverse events were observed.

Conclusion
Real life data from our center confirm the overall excellent SVR rates after DAA treatment of chronic Hepatitis C. Identifying patients at risk for relapse and developing adjusted treatment protocols will remain a task for clinical practice in the future.

Neutrophil-to-lymphocyte ratio - a prognostic biomarker for decompensated cirrhosis PH18

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Background: Acute decompensation of cirrhosis (AD) may lead to hospitalisation, extrahepatic complications and death. Therefore risk assessment for cirrhotic patients at admission to hospital is crucial. Validated predictive scores are complex and time consuming. Leucocyte differentiation, i.e. neutrophil-to-lymphocyte ratio (NLR), has been associated with infectious complications and mortality in various extra-hepatic and recently hepatic diseases. In two distinct Acute-on-chronic liver failure (ACLF) cohorts from King's College Hospital it predicted 28-day mortality. NLR may also have a prognostic significance in patients with acute decompensation of cirrhosis.
Methods: We retrospectively analysed patients hospitalised for AD at the Cantonal Hospital St. Gallen between 2012 and 2015. 118 patients were included and divided into the following groups: AD/ACLF, 28-day survivors/non-survivors. Leukocyte differentiation and NLR were assessed at admission, and correlated with clinical parameters and predictive scores.
Results: NLR was positively correlated with SIRS- (r=0.31, p<0.001), MELD- (r=0.25, p=0.006) and CLIF-SOFA (r=0.20, p=0.026) scores. NLR was higher in patients with ACLF compared to AD (median 6.02 vs. 3.7, p<0.001); and negatively correlated with creatinine-clearance (r=-0.27, p=0.004). Higher NLR values were predictive of 28-day mortality (median 10.22 vs. 4.29, p=0.032; AUROC 0.7855 [0.6293-0.9417], p=0.002; 73% sensitivity, 84% specificity, criterion >7.76).
Conclusion: NLR ratio is a simple, rapid and cost-effective marker of systemic inflammation. It was an independent predictor of 28-day mortality for patients with decompensated cirrhosis. NLR may be a candidate biomarker to stratify disease severity in patients with AD and ACLF at admission to hospital.

Isolation, Characterization and Differentiation of Stem Cell Organoids Derived from Gallbladder Tissue PH20

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Background Recent developments in three-dimensional culture models allowed the expansion of adult stem cells in the form of organoids. We identified the gallbladder as a source of intrahepatic stem cells. Our culture methods allow the long term culture and expansion of gallbladder derived organoids. The current focus is to define conditions which drive the differentiation of organoid cells into hepatocytes.

Methods Organoids are isolated from C57BL/6J entire livers or gallbladders and expanded in Matrigel™. Culture conditions for expansion are based on growth factors including *WNT* activation (R-Spondin) and *TGF-beta* inhibition (Noggin). Differentiation conditions include the removal of R-spondin and Noggin and the addition of dexamethasone.

Results Isolation of stem cells from non-regenerating mouse livers revealed that gallbladders are a potent source of organoids. Expansion of gallbladder derived organoids is possible for up to one year, independently from the age of the donor mice. Application of differentiation media induces expression of hepatocyte lineage markers, such as HNF4a and albumin.

Conclusions Organoids can be isolated and expanded long term in vitro and are a potential powerful cell source for the treatment of severely damaged and genetic diseased livers.

The health burden of Primary Biliary Cholangitis in Switzerland SwissPBC | SASL 36 **PH21**

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Background: Primary Biliary Cholangitis (PBC) is a rare autoimmune cholestatic liver disease of unknown cause. Epidemiological data on PBC in Switzerland do not exist. The aim of our study is to assess the disease burden of PBC in Switzerland. This survey should be the basis for a prospective PBC registry in Switzerland

Methods: This is a nationwide, cross-sectional, multi-centre study involving also family doctors and gastroenterologists outside centres.

Preliminary results: About 500 patients can be recruited from the University Hospitals and hepatology centres. 43/295 gastroenterologists, 406/5004 general practitioners answered the survey. 30 out of the 43 replying gastroenerologists have PBC patients, for a total number of 119 patients. 18 gastroenterologist are willing to participate, for a total number of 60 patients. 78 out of the 406 replying GPs have PBC patients, for a total number of 116 patients. 32 GPs are willing to participate, for a total number of 44 alive patients. About 50 PBC patients could be identified but are not available for the study because their physicians are not willing to participate. About 60 patients could be recruited from outside of centres.

Conclusions: Patients recruitment will last until the end of June, data on the precise numbers of the recruited patients and analysis of the collected data will be presented.

POSTERS SURGERY

Functional characteristics of microencapsulated porcine islets of Langerhans: Improving the quality of transplantation **PS1**

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Abstract

The successful transplantation of porcine islets of Langerhans (PLI) requires functional *in vitro* testing prior to engraftment. Physiologically, PLI do not only secrete insulin, and it is important to compare the qualitative and quantitative response of PLI and recipient islets to nutrients, hormones, and neuromediators prior to therapeutic transplantation. Despite progress in the clinical and therapeutic application of PLI, detailed knowledge regarding their physiological functions remains limited. The aim of the current study was to evaluate the quantitative and dose-dependent response of microencapsulated PLI (mPLI) to nutritive, hormonal, and pharmaceutical stimuli, and study the limits of their functional survival. PLI were isolated from pigs, encapsulated, and transferred to a miniaturized culture system. The resulting mPLI were then challenged with stimuli in normoglycemic Krebs-Ringer bicarbonate buffer culture medium, and their functionality was examined by repeated glucose stimulation on days 3, 5, 7, and 11. Media samples were evaluated for insulin release. Highly viable cells exhibited first and second phase peak insulin secretion. mPLI had increased insulin secretion in response to all physiological human stimuli, except for clonidine (Clo), which decreased secretion (68 ± 12%). There were no variations in the stimulation index (SI), but the time to peak (TTP) was prolonged significantly for Clo (165 ± 21%), glucagon (284 ± 45%), and tolbutamide/glucose (141 ± 9.6%). Dose-dependent stimulation (DDS) increased the SI and TTP for glucose (SI, 170 ± 14%; TTP, 200 ± 75%; 16.6 mM vs. 32 mM) and arginine (SI, 288 ± 48%; TTP, 190 ± 41%; 5 mM vs. 20 mM), although interestingly a dose of 40 mM arginine reduced the SI/TTP. Repeated glucose challenge caused a 90% decline in insulin secretion within 11 days. In conclusion, these data reveal a detailed dynamic functional analysis of mPLI. Functional testing prior to transplantation could be used as a novel standard to improve the transplantation of PLI.

Benign multicystic peritoneal mesothelioma: case report and literature review **PS2**

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Background: Benign multicystic peritoneal mesothelioma (BMPM) is a rare benign tumor of primary peritoneal origin. Etiology is unknown. To date, less than 200 cases were reported, including 17 cases among children and teenagers.

Methods: Case report and literature review.

Results: We report a case of a 16-year-old male complaining of diffuse abdominal pain associated with weight loss for three months. CT-scan demonstrated free abdominal fluid of unknown etiology .An exploratory laparoscopy showed multiple cystic lesions and BMPM was confirmed at pathology. Peritonectomy with hyperthermic intraperitoneal chemotherapy (HIPEC) was decided according to literature reports. No postoperative morbidity was reported at 30 days.
Based on our literature review, mean age at presentation was 30-40 years. The disease affects predominantly reproductive females. Recurrence is more frequent in women. Most patients were reported disease-free 1 year post-operatively. A high recurrence rate (up to 50%) seems to be related to non-extensive surgery. Disease-related deaths are rare.

Conclusions: BMPM is rare tumor of peritoneal origin. Treatment aims at symptoms control and preventing local recurrence. Cytoreductive surgery with HIPEC represents a good treatment option for selected patients.

Outcomes of 50 consecutive transanal total mesorectal excisions for rectal cancer

PS3

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Background
Transanal total mesorectal excision (taTME) is an alternative to conventional mesorectal excision owing to its ability to achieve clear distal and circumferential resection margin in rectal cancer.

Methods
Consecutive patients treated by taTME were included in a prospective cohort study. Perioperative and short-term surgical outcomes were measured along regular clinic visits and the results were reported as median and interquartile range (IQR).

Results
50 patients with rectal cancer (7cm to anal verge, IQR 6-8) underwent a taTME between Feb 2013 and May 2016. Age and body mass index were 66.5 years (IQR 57.25-76.75) and 26.5kg/m^2 (IQR 22.8-30.1). 33 (66%) patients had neoadjuvant radiochemotherapy. Median surgery time was 355 minutes (IQR 314-419), including an ileostomy. Median length of stay was 13 days (IQR 10-16.25). Dissection of the mesorectum was good (98/50 Mercury I) and all distal and circumferential margins were clear. Median T stage was 3 (IQR 2-3). 13 patients had lymphnode metastases for a median number of retrieved nodes of 24.6 (IQR 18-34). Last, cumulative 30-day morbidity amounted to 26% major complications (Dindo Clavien III-V), including 4 anastomotic leaks (8%) and 32% minor complications (Dindo Clavien I-II).

Conclusion
Transanal total mesorectal excision allows good surgical and oncologic quality to the expenses of a reasonable surgery time and morbidity.

Long-term results of endoscopic balloon dilation for treatment of colorectal anastomotic stenosis

PS4

Magdalena Biraima • Michel Adamina • Res Jost • Stefan Breitenstein • Christopher Soll

Background Despite standardized techniques, anasto- motic complications after colorectal resection remain a challenging problem. Among those, anastomotic stricture is a debilitating outcome which often requires multiple interventions and which is prone to recur. The present series investigates the long-term results of endoscopic balloon dilation for stenotic colorectal anastomosis.
Methods Consecutive patients from a single institution who presented with an anastomotic stenosis after a col- orectal resection were identified using a prospective clini- cal database. Medical records were systematically reviewed to detail patients' outcomes.
Results Over 17 years (1988–2015), 2361 consecutive patients underwent a colorectal anastomosis. Of those, 76 patients (3.2 %) suffered a symptomatic anastomotic stenosis within a median of 5 months (interquartile range (IQR) 2–13) of the index procedure. All stenoses were primarily treated by endoscopic balloon dilation. Median follow-up was 11 years (IQR 7–14). In half the patients, one to two attempts at endoscopic balloon dilation defini- tively relieved the stenosis. Overall, the median number of endoscopic balloon dilation required was 3 (IQR 2–3). Recurrence rates at 1 year, 3 year, and 5 year were 11, 22, and 25 %, respectively. Median time to recurrence was 12 months (IQR 3–24). Ultimately, two patients (2.6 %)underwent an operation due to failure of endoscopic treatment. All other patients (97.4 %) were treated suc- cessfully with endoscopic balloon dilation. A total of 12 patients (15.7 %) suffered a complication from endoscopic dilation. Of those, 11 were minor bleeding and one was a perforation at the level of the anastomosis. All complica- tions were managed conservatively, and no emergency procedure was required as a consequence of attempted endoscopic balloon dilation.

Conclusion Endoscopic balloon dilation is a safe approach to effectively relieve an anastomotic stenosis following a colorectal resection.

Comparison of robotic-assisted vs laparoscopic resection of rectal cancer after neoadjuvant chemoradiotherapy

PS5

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Background: Ongoing studies compare the effectiveness, the technical and oncological outcomes of robotic-assisted vs laparoscopic rectal surgery with total mesorectal excision (TME). For both techniques we analysed our perioperative results in patients with locally advanced rectal cancer and neoadjuvant chemoradiotherapy (CRT).

Methods: Retrospective analysis of prospectively collected data. From January 14 to April 16 a total of 30 patients with rectal cancer underwent a laparoscopic or a robotic-assisted DaVinci Xi TME in our department. In the robotic group (Rob-G) a total of 10 patients (age 64 ± 14, 80% f) were included, in the laparoscopic group (Lap-G) 20 patients (age 61 ± 11, 45% f).

Results: The average operation time was significantly longer in the Rob-G compared to the Lap-G (421 ± 87 min vs 278 ± 54 min; p = < 0.05). Severe complications (Clavien-Dindo III or IV) occurred in 15% in Rob-G vs. 10% in Lap-G (p = ns). On the specimen the number of resected lymph nodes did not differ significantly (Rob-G 17.5 ± 6.8 vs Lap-G 20.8 ± 7.3, p = ns). The quality of the TME was complete in 100% of the Rob-G and in 90% of the Lap-G (p = ns). The mean hospital stay was 14 ± 5 days in the Rob-G and 14 ± 7 days in the Lap-G (p = ns).

Conclusions: Although our team is at the beginning of the learning curve with the DaVinci Xi TME, we achieve comparable results to the laparoscopic technique in regards to perioperative morbidity, quality of oncological resection and length of hospital stay. The influence on oncological outcomes should be investigated in further studies with a larger patient collective.

Impact of macrophage dependent ATP release via Connexin 43 on abdominal sepsis outcome

PS6

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Danger associated molecular patterns, including extracellular nucleotides such as ATP, are released during sepsis. Extracellular nucleotides modulate responses via specific receptors that are present on various immune cells. Here, we explored by which mechanism ATP is released during abdominal sepsis and focused on the importance of hemichannel Cx43 in mediating ATP release from macrophages during sepsis.

Macrophages were isolated from peritoneum and liver from C57Bl/6J mice. The release of extracellular ATP was quantified using luciferin-luciferase assay. In vivo, we used LPS injection and caecal ligation and puncture (CLP) as a model of peritonitis.

Macrophages were identified to release ATP in response to toll like receptor (TLR) 2 and 4 agonists. Inhibition of Connexin 43 via specific antagonists reduced extracellular ATP levels. In vivo, Cx43 was not constitutively expressed in liver but was highly induced following LPS injection or CLP. Cells expressing Cx43 in septic livers were identified as infiltrating macrophages and neutrophils. We identified elevated Cx43 expression at the cell surface and in the endoplasmic reticulum of primary M1 macrophages but not M2 macrophages after stimulation with LPS. However, Kupffer cells were Cx43 negative. Blocking of Cx43 during CLP using Gap27 increased serum levels of TNFα and IL1β and prolonged survival significantly compared to PBS treated controls.

In conclusion, LPS induced upregulation of the hemichannel Cx43 on peritoneal macrophages that is associated with elevated ATP release and outcome after peritoneal sepsis in mice.

Robotic Esophagectomy: Concept and First Experience With the New DaVinciXi System PS7

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Background: Esophageal resection is an essential part in the treatment of esophageal cancer but remains a highly delicate procedure. To facilitate the operation and to reduce morbidity, minimal invasive techniques have gained popularity within the last years. Here we present our concept and our first results of robotic assisted operations in esophageal surgery.

Methods: In October 2015 we have started robotic esophageal resection in our institution using the latest DaVinciXi System. Due to our concept we perform the abdominal part in an open procedure using the robotic assistant in the thoracic part of the Ivor Lewis procedure. Gastroesophageal anastomoses were performed completely intrathoracal by using the robotic system without a thoracotomy.

Results: So far 4 patients have been operated on using this new approach. All patients were male, and the average age was 61 years. 3 patients had an adenocarcinoma, one patient had a neuroendocrine tumor. Neoadjuvant radiochemotherapy was applied on 3 patients. In none of the patients conversion to the open procedure was necessary. Anastomoses were performed with a robotic assisted continuous suture. Mean operation time was 476 minutes. RO resection was achieved in all patients, and there was no mortality and no anastomotic leakage. There was one Clavien Dindo I complication, as well as one II and III.

Conclusions: Robotic assisted esophageal resection using the latest DaVinciXi System is feasible and the first results are promising.

Stereotactic Navigation in Minimal Invasive Liver Surgery PS8

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Background: In patients with malignant hepatic disease, local ablation is a tissue-sparing alternative when resection is not feasible. Here, technical accuracy, safety and clinical efficiency in terms of local tumour control using stereotactic minimal invasive navigation for ablation (MINA) of liver lesions is reported.

Methods: Treatment with MINA using microwave ablation (MWA) included malignant liver lesions not amenable to conventional surgery. Indications for using a laparoscopic approach were lesions located peripherally or in proximity to adjacent organs, with planned combined resection and ablation strategies, or with additional diagnostic laparoscopy. A navigation system using a rigid surface registration method was applied for placement of ablation antennas. Technical accuracy (registration and target positioning errors), safety (complications within 90 days), and clinical efficiency (rate of incompletely ablated lesions at 3 month) were analysed.

Results: Laparoscopic MINA: 54 patients with 346 malignant liver lesions at two European Centres treated between 2013 and 2015. Median lesions treated per patient : 3 (1-25). Average registration error: 8.4mm. Complications: grade I-II 13%, grade IIIa 4%. Local recurrence at 90 days: 9% of lesions. Mean LOS: 2 days. Percutaneous MINA: 63 patients with 96 lesions over 28 month. Complications: Grade I-II 5%, grade > II 0%. Median LOS: 2 days. Local recurrence at 90 days 14%, with 2/3 successful early re-ablation with complete tumor control.

Conclusions: Minimal invasive stereotactic navigation allows precise, efficient and safe treatment options and offer new treatment strategies for patients not amenable to conventional surgery or with complicated recurrent disease.

LADD bands causing chronic constipation and small bowel obstruction: Leading symptoms for intestinal malrotation in adults PS9

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Background: During embryonal development a lack of normal 270° counter clockwise rotation of the midgut can lead to nonrotation, malrotation or volvulus. 85% of these cases are symptomatic in the first two years of life. In adults intestinal malrotation occurs with an incidence of 0.2% with often unspecific symptoms like constipation or abdominal pain and may lead to acute or chronic obstruction.

Methods: We present the case of a 55 year old woman suffering from unspecific abdominal symptoms for years; conservative treatment has been frustrating. Finally an abdominal CT scan detected a long segmental obstruction of the duodeno-jejunal part with the jejunum shifted to the right and the ileum to the left. Due to this malrotation we performed a laparoscopic duodenal dissociation called LADD´s procedure with an anatomical repositioning of the gut. Intraoperatively the jejunum was not located left to the superior mesenteric artery like usually but distended to the right and fixed with ligaments. Postoperative recovery was uneventful, the patient was free of complains.

Results: Midgut malrotation caused by persisting peritoneal fibrous bands fixing the duodenum and caecum to the abdominal wall occurs with a great clinical variety in adults. These so called LADD bands cause symptoms of intestinal obstruction.

Conclusion: Malrotation in adults is a very rare disease but still should be one differential diagnosis in patients with unspecific chronic abdominal symptoms. CT scan may confirm the diagnosis. LADD´s procedure is the treatment of choice with restoration of the anatomy. With the increasing number of CT scans malrotation will be detected more frequent in future.

An Unusual Case of Well-differentiated Neuroendocrine Tumour of the Ileum with Peritoneal Carcinomatosis PS10

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Background: According to WHO 2010 classification, based on proliferative index, Neuroendocrine Tumours are divided in low grade and intermediate grade neuroendocrine tumours (NETs) and high grade neuroendocrine carcinoma (NEC). NETs are relatively low-aggressive tumours, with a rather indolent disease course and good prognosis in most patients; mesenteric lymph nodes and liver are the prevalent metastatic sites. NEC have a worse prognosis and peritoneal carcinomatosis is a common finding. ***Methods:*** We report the case of a 68-year-old male, with a history of diarrhea and flushing, admitted in our Center for small bowel obstruction. The pre-operative CT scan showed a 4 cm ileal solid mass with free peritoneal fluid, without any liver nor thoracic lesions. We performed an urgent explorative laparotomy and about 40 cm from the ileocecal valve, we found a stenotic ileal tumour, with a mesenteric adenopathies and diffuse micro and macronodular peritoneal carcinomatosis. We performed a 30 cm small bowel resection with manual L-L anastomosis. ***Results:*** Pathologic evaluation of the resected specimen showed a well differentieted (G1) neuroendocrine tumour 1,4 × 0,5 cm in size, with two metastatic nodes. The tumour presented muscular infiltrations, perineural and lymphatic vessels invasion and multiple mesenteric implants. The immunohistochemistry analysis revealed synaptophysin and chromogranin A positivity and a Ki-67 expression < 2%. Mitotic count was less than 2 × 10 high-power fields (HPF). Our diagnosis was pT2, pN1, M1,L1, G1. ***Conclusions:*** This case is challenging because the tumour expresses low proliferative index like G1 tumours, but shows an aggressive clinical behaviour such as node metastasis and peritoneal carcinomatosis, wich is not considered by the current NETs classifications, and makes it difficult to predict the prognosis.

Evaluation of intraperitoneal mesh implantation managing open abdomen: comparisons of outcome between two tertiary centers

PS11

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Background: Patients with open abdomen represent difficult clinical situation that are associated with significant short term and long term morbidity e.g. incisional hernia. Aim of the present study was to compare the outcome between mesh implantation and conventional treatment without mesh implantation.
Methods: In this study the results from two treatment strategies from two tertiary centers (Bern and Vienna) are analyzed. We compared our management technique on the one hand in fascial dehiscence and on the other hand in open abdomen with patients treated in the Surgical Department of Vienna.
Results: In Bern 124 of 200 patients (62%) were treated with mesh implantation, whereas non-resorbable mesh was not implanted in Vienna. Patients in Bern were significantly older compared to the cohort of Vienna (65, range 22-85; versus 56, range 20-88 years). Mean redo surgery after open abdominal treatment was 1 (0-29) in Bern and 4 (0-46) in Vienna. The incidence of fistula was 18% in Bern and 23% in Vienna and the mortality was 17% in Bern and 13% in Vienna.
Conclusion: Mesh implantation is a safe treatment option managing open abdomen without increasing the rate of intestinal fistula.

Percutaneous ureteral stent vs. double J stent: Analysis of infectious and urological complications after kidney transplantation

PS12

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Background: Ureteral complications remain a long-term complication after kidney transplantation. In this study we compared the outcome between percutaneous ureteral stent vs internal double J stent placement in patients who underwent kidney transplantation.
Methods: We retrospectively analyzed all patients undergoing kidney transplantation from 2005-2014 where whether a percutaneous ureteric stent (group A) or an internal double J stent (group B) was used. After excluding patients younger 18 years and multiorgan transplantation, a total of 310 patients were identified.
Results: 217 patients (70%) were treated with percutaneous ureteral stent; 93 (30%) with double J. Type of stent used was related to the period (group A 2005-2010; group B 2011-2014) and the surgeons choice. 99% of ureteric anastomosis were performed using the Lich-Gregoir technique. Mean follow up was 64 months in group A and 26 months in group B ($p<0.001$). There was no dif-ference in terms of urinary tract infections within 6 weeks ($p=0.204$). In total, 28 (9.0%) developed ureteric complications, 33 (10.6%) vesicuoureteral reflux and 54 (17.5%) received urologic redo-intervention during follow-up. In group A, significantly more ureteric complications and vesiculoureteral reflux were detected leading to more total redo-urologic interventions ($p=0.018$, $p<0.001$ and $p=0.003$, respectively).
Conclusion: The use of percutaneous ureteric stents is associated with more ureteric complications, vesiculourethral reflux and needed urologic redo Intervention than double J stents after kidney transplantation.

PERIPHERIC VS PEDICLE DIVISION IN LAPAROSCOPIC RESECTION OF SIGMOID DIVERTICULITIS

PS13

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Introduction: Laparoscopic rectosigmoid resection is the standard surgical treatment for recurrent sigmoid diverticulitis. Different surgical approaches are practiced. Of particular interest is the mesenterial division, either performed on sigmoid vessels, or on inferior mesenteric vessels. Objective of this study was to compare intra and postoperative complications of both techniques.

Methods: Retrospective analysis of patients underwent elective laparoscopic sigmoid resection between January 2004 and December 2014.

Results: A total of 1016 patients were operated. A central division of the mesenteric vessels was performed in 280 patients (27.6%), while a peripheral dissection was performed in 736 patients (72.4%). Between these two groups no statistically significant difference regarding age, sex distribution, or co-morbidities was observed.13 patients (1.3%) developed anastomotic leak, of which 9 had a preservation of mesenteric vessels (1.2%vs.1.4% P=0.794). 24 patients (2.4%) developed postoperative rectal bleeding, in only 9 cases an anastomotic bleeding was confirmed endoscopically (7 in peripheral dissection group vs 2 in central ligature group, 0.95% vs 0.7% P=0.712). Moreover, postoperative morbidity did not significantly differ between the two groups. A very low mortality rate was observed, with 2 deaths occurring in the group with peripheral dissection.

Discussion: Ligation of inferior mesenteric vessels doesn't seem to affect anastomotic healing; both surgical techniques presented similar incidence of anastomotic bleeding. We observed no significant difference in overall morbidity and mortality. A prospective analysis is planned to compare the long-term results with the quality of life.

Intestinal Metastasis of Cutaneous Melanoma. A Rare Cause of Intussusception.

PS14

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***Background*:** Intussusception is a rare cause of acute bowel obstruction. In adults it is mostly caused by intraluminal intestinal tumors as a result of unequal motility between adjacent intestinal segments. Small bowel (SB) obstruction caused by intestinal melanoma metastasis is indeed very rare and so far very poorly described in literature.

***Methods*:** An 87-year-old male was admitted in out center for small bowel obstruction, with a two week history of abdominal distention and emesis. He referred COPD, malnutrition, and removal of a cutaneous lesion from the scalp 20 years earlier with no documentation available. He underwent a non diagnostic colonoscopy. A preoperative CT scan showed an ileo-ileal invagination over a likely intraluminal organ lesion. We performed an explorative laparotomy with a 40 cm SB resection and an ileoileal laterolateral anastomosis.

***Results*:** SB is rarely affected by secondary tumor lesions, of which metastatic melanomas are the most frequent. SB melanoma can either be asymptomatic or present with a complication such as obstruction, intussusception or perforation. Adult intussusception accounts for fewer than 5% of all cases and only 1% of all bowel obstructions. Between 70-90% are secondary to tumors of which 15-25% are benign and 10% idiopathic.

***Conclusions*:** Despite being rare, cutaneous melanoma is the most common extra abdominal source to involve the SB. Surgical intervention is mandatory in cases of intussusception in adults and cases should always be fully investigated to find the underlying cause.

Surgical Site Infection (SSI) Rate in Colorectal Surgery- experience from a Single Centre. PS15

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***Background*:** Surgical site infections (SSIs) represent a major cause of the postoperative morbidity after colorectal surgery. Treatment consumes important health care resources, and thus, its prevention and optimized treatments are crucial. A Swissnoso report has shown a SSI rate of 12.8%.
Methods: We built a multidisciplinary team to monitor postoperative SSIs (defined as its occurrence within 30 days of surgery). 194 consecutive patients, who underwent colorectal surgery from July 2013 to June 2015, were studied. Patient's characteristic, operative data and the postoperative course were analyzed.
Results: There were 194 patients (90 male, 104 female, median age 57 years) who underwent colorectal surgery (173 elective, 21 emergency operations). The most common surgical indications were diverticulitis and functional colon disease (103 cases, 53 %) and cancer (91 cases, 47 %); 73% of patients had a laparoscopic approach. The overall SSI rate was 5.15% (10 SSI); whereby 3 SSI were superficial, and 5 were deep, and 2 were organ/space SSI, respectively. Incidences of SSI were different for the type of surgical approach and operative indications. While 5 SSI were treated conservatively, the remaining 5 cases required radiological or surgical interventions. The mean length of hospital stay for patients with SSI was 20 days.
Conclusion: Compared to the national level, we could show a much lower SSI rate at our institutions. Correct timing of antibiotic prophylaxis, a meticulous surgical technique to avoid contaminations and spillage of infectious materials, as well a laparoscopic approach are key points. Timely recognition and an adequate treatment may limit the consequences of SSIs.

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