Posters

ACUTE PANCREATITIS AND VASCULAR COMPLICATIONS

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Introduction

Up to one-quarter of patients with acute pancreatitis (AP) develop vascular complications (VC) according to radiological studies, most common being venous thromboses (VT) (1-4). Potentionally lethal VC are pseudoaneurysm of visceral vessels and intraabdominal hemorrhage (1,2).

Methods

We conducted a retrospective study of AP cases hospitalized at our department from January 2005 till end of March 2025 and analysed VC - we looked at AP etiology and severity, type of vascular involvement, need for intensive care treatment and survival.

Results

Characteristics	Value
Total AP patients	1579
Patients with VC	33 (2,1 %)
Male	23 (69,7 %)
Female	10 (30,3 %)
Age	Mean: 57,8 (Range: 34-83)
Etiology of AP:	
Biliary	14 (42,4 %)
Alcoholic	13 (39,4 %)
Hypertriglyceridemic	2 (6,1 %)
Hypercalcemic	1 (3,0 %)
Iatrogenic (post-ERCP)	1 (3,0 %)
Ischemic	1 (3,0 %)
Idiopathic	1 (3,0 %)

Table 1: Demographic and Etiologic Characteristics of Patients with VC

The most common VC was splanchnic VT (22; 66.7%), comprising: 9 portal VT (image 1), 5 splenic VT (image 2), 4 combined portal and splenic VT, 1 superior mesenteric VT, 3 extensive (portal, splenic, and superior mesenteric) VT.

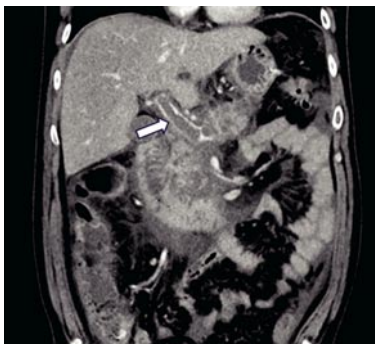

Image 1: White arrow pointing at thrombus in portal vein on CT

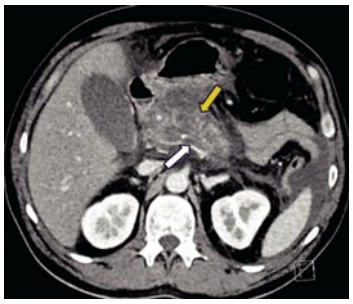

Image 2: White arrow pointing at thrombus in splenic vein and orange arrow pointing at WON on CT

Peripheral VT events occurred in 7 patients (21.2%): 2 deep VT, 4 upper extremity thrombophlebitides, and 1 basilar VT. Two patients had arterial complications: 1 brachial artery embolism and 1 superior mesenteric artery stenosis (underlying ischemic AP). Pseudoaneurysms were observed in 2 patients. One female with biliary AP had a superior mesenteric vein pseudoaneurysm and mesocolic hematoma (image 3), requiring surgery with full recovery. Another female with biliary AP developed a common carotid artery pseudoaneurysm due to complication of central venous catheterization. Walled-off necrosis (WON) occurred in 6 patients, all of whom also had portal or splenic VT. Two patients (6.1%) required surgery, nine (27.3%) were treated in the ICU, and one patient (3%) died from ischemic pancreatitis with multiorgan failure.

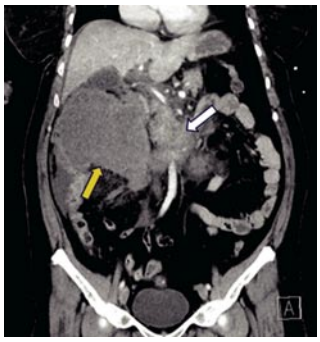

Image 3: Superior mesenteric vein pseudoaneurysm (white arrow) and mesocolic hematoma (orange arrow) on CT

Conclusion

Awareness of potential vascular involvement in setting of AP is crucial for timely diagnosis and effective management. In our series rate of VC was low most likely due to routine thromboprophylaxis in AP. All patients with WON developed splanchnic VT confirming the link between severity of AP with local VC.

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Association of ultra-processed food intake with the risk of inflammatory bowel disease - an idea for the use of a nutritional questionnaire based on several clinical cases

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Introduction

Ultra-processed foods are a category of processed foods characterized by complex manufacturing methods. They often contain numerous artificial ingredients and additives such as flavorings, sugars, stabilizers, emulsifiers, and preservatives. Several studies have linked the consumption of ultra-processed foods to an increased incidence and prevalence of chronic inflammatory diseases, including inflammatory bowel disease (IBD).

Between January and April 2025, three young male patients were admitted to our department with first-time severe presentations of Crohn's disease. In all three cases, dietary histories revealed regular consumption of highly processed foods prior to disease onset.

Case presentations

Case 1

An 18-year-old male arrived at the emergency department experiencing diarrhea (up to 10 bowel movements daily for the last 6 months), along with abdominal pain and a weight loss of 10 kg during that time. He was otherwise in good health. His family background included an aunt with inflammatory bowel disease (IBD). As a first-year university student who had recently relocated to Ljubljana, his diet consisted of 1–2 meals per day, primarily made up of high-calorie, high-fat, and high-sodium processed foods, while lacking in fiber, protein, and essential micronutrients. He did not smoke. During the physical examination, mild tenderness was observed in the right lower quadrant of the abdomen.

Laboratory results upon admission:

Endoscopy showed deep ulcers in terminal ileum

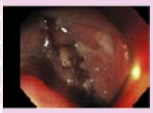


Figure 1: Colonoscopy image January 2025

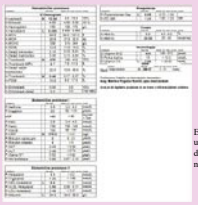
Histopatology indicated features of Crohn's disease.

Stool culture and toxin testing for *Clostridioides difficile* were negative.

Case 2

A 39-year-old male presented to the emergency department with one month of diarrhea (up to 5 bowel movements per day), vomiting, abdominal pain, and an 8 kg weight loss. He had previously visited the emergency department twice for acute gastroenterocolitis; both times, stool cultures were negative. An earlier upper endoscopy showed a hiatal hernia, and abdominal ultrasound was normal. He was otherwise healthy. Due to mildly elevated cholesterol levels, he had changed his diet and intentionally lost 22 kg over the previous year through diet and exercise. Prior to this, his lifestyle was unhealthy—eating one meal per day, typically late at night, consisting of 1–2 pizzas, fries, and hamburgers. He also smoked.
On physical examination: mild tachycardia (98 bpm), fever (38.0°C), and abdominal tenderness without signs of peritonitis.

Laboratory results at admission:



CT scan showed inflammation of the colon mainly in the transversum

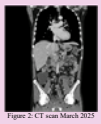


Figure 2: CT scan March 2025

Endoscopy revealed inflammation and deep ulcers in the ascending, transverse, and descending colon; the rectum appeared relatively normal..

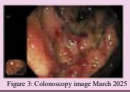


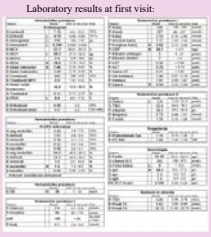
Figure 3: Colonoscopy image March 2025

Histopatology indicated features of Crohn's disease of the colon.

Case 3

A 21-year-old male visited the IBD Centre in February 2025. In July 2023, he had a perianal abscess drained by a proctologist. This was followed by the development of a perianal fistula, which was also drained. In December 2024, he began experiencing bloody bowel movements up to 15 times per day.
He was otherwise healthy, with allergies to pollen and dust. He was a computer science student who often spent nights playing video games, eating chips and candy, and drinking sugary soft drinks.
On physical examination: overweight, pale, normocardic, with mild diffuse abdominal tenderness.

Laboratory results at first visit:

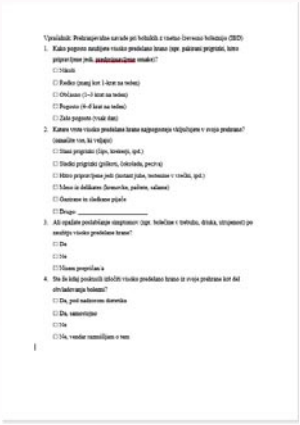


Endoscopy showed normal terminal ileum and difuse colitis.

Figure 4: Colonoscopy, February 2025

Histopathology indicated features of inflammatory bowel disease. Based on his perianal fistula and other findings, Crohn's disease was the most likely diagnosis.

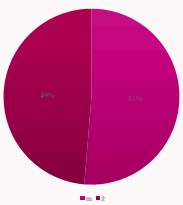
At the Inflammatory Bowel Disease Centre of General Hospital Jesenice, we treat approximately 300 patients annually. As part of our clinical practice, we routinely use a patient-reported outcome (PRO) questionnaire. Since 2020, a clinical dietitian has been part of our multidisciplinary care team for our patients.



Example of the diet questionnaire that was used

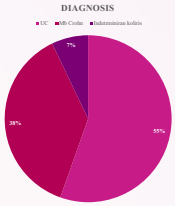
IBD Centre Jesenice statistics (2024)

GENDER



male	137
female	130

DIAGNOSIS



Diagnosis	number
Ulcerative colitis	148
Mb Crohn	100
Indeterminate colitis	19

Discusion

Based on our clinical observations, we conclude that there is a link between high consumption of ultra-processed foods and the development of chronic inflammatory bowel disease. Using a dietary questionnaire, we observed that mainly younger men diagnosed with Crohn's disease often had diets predominantly composed of ultra-processed foods. We believe that including a clinical dietitian in the routine care of IBD patients is essential to improving long-term outcomes.

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Comparison of complications after ileal pouch-anal anastomosis in ulcerative colitis patients with and without primary sclerosing cholangitis

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Background

- Patients with PSC-UC are more likely to experience pouchitis, chronic pouchitis and pouch failure than patients with UC alone.
- The aim of retrospective study is to compare rates of pouch complications and need for biologics in UC IPAA patients with and without PSC.

Methods

- A retrospective cohort study of patients who underwent IPAA surgery between March 2015 and February 2024.
- Pouchoscopies and clinical examination were performed 1, 3, 6, and 12 months after restoration of the faecal stream.
- Fisher's exact test was used to compare frequency of pouch complications between PSC-UC and UC group.

Results

- 186 patients with UC that underwent IPAA surgery, among them 14 (7.5%) with concomitant PSC.
- By month 12, 92.9% of PSC-UC patients had developed pouchitis compared to 61.0% in the UC only group (n= 178, RR 1.52, 95% confidence interval (CI) 0.19-11.92, p=0.02) *Fig 1*.
- After a median follow-up of 24 months, the need for biologics in PSC-UC group tended to be higher (n=163: 30.8% vs 12.7%, RR 2.43, 95% confidence interval (CI) 0.68-8.66, p=0.09).
- Pouch failure tended to occur more frequent in the PSC-UC group (n= 163: 7.7% vs 4.0%, RR 1.92, 95% confidence interval (CI) 0.21-17.31, p=0.45).

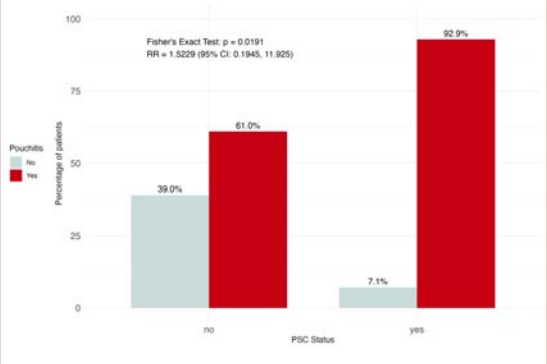

Figure 1
Percentage of patients with at least one episode of pouchitis in the first year after IPAA surgery

Conclusion

Percentage of patients with at least one episode of pouchitis in the first year after IPAA surgery was significantly higher in UC-PSC group. Additionally, patients with PSC-UC after IPAA surgery appear to be at higher risk for pouch complications, such as pouchitis, the need for biologics and pouch failure, however statistical significance was not achieved due to a low sample size in UC-PSC group.

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COIs

Comparison of European and American societies for Gastrointestinal Endoscopy guidelines for prediction of choledocholithiasis in patients with acute biliary pancreatitis – a prospective single center study

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BACKGROUND

Guidelines for management of suspected choledocholithiasis from both European (ESGE) and American Societies for Gastrointestinal Endoscopy (ASGE) were not primarily designed for patients with acute biliary pancreatitis (ABP), which differ from general population with choledocholithiasis. Moreover, they suggest different diagnostic and therapeutic workup in certain cases (Table 1). We previously performed assessment of both guidelines in the setting of ABP on retrospective cohort in which European guidelines outperformed American.

Table 1: Comparison of ASGE 2019 and ESGE algorithms for diagnosis and management of suspected choledocholithiasis.

Algorithm of American Society for Gastrointestinal Endoscopy 2019 guidelines for risk assessment and management of suspected choledocholithiasis		
ERCP	High probability	• CBD stone visible on transabdominal ultrasound/CT or • Clinical ascending cholangitis or • Total bilirubin > 68,4 µmol/mL and dilatated CBD on transabdominal ultrasound/CT
EUS	Intermediate probability	• Abnormal liver biochemical tests or • Age over 55 or • Dilatated CBD on transabdominal ultrasound/CT
/	Low probability	• No predictors present
Algorithm of European Society of Gastrointestinal Endoscopy 2019 guidelines for suspected common bile duct stones		
ERCP	High likelihood	• CBD stones identified on transabdominal ultrasound or • Features of cholangitis
EUS	Intermediate likelihood	• Abnormal liver function tests or • CBD dilatation on transabdominal ultrasound
/	Low likelihood	• Normal liver function tests and no dilatation od CBD on transabdominal ultrasound

AIM

To further validate of our previous findings using a prospective cohort.

METHODS

We conducted a prospective observational single center study. Data from 56 patients hospitalized in our tertiary referral center was collected between 7.2.2023 and 22.6.2023.

RESULTS

Patient flow chart is depicted in Figure 1. Forty patients were included in the final analysis, 10 (25%) had choledocholithiasis (7 confirmed with endoscopic retrograde cholangiopancreatography, 3 with endoscopic ultrasound). Comparison of probability/likelihood groups by both guidelines is presented in Table 2, sensitivity and specificity of groups and single predictors is available in Table 3. As previously, third ASGE high probability predictor (total bilirubin > 68.4 µmol/mL and dilatated common bile duct on transabdominal ultrasound) performed poorly, resulting in superior specificity of ESGE high likelihood predictors (93.3% vs 96,7%). More patients were classified as low likelihood by ESGE (3 vs 5). Adherence to ASGE guidelines instead of ESGE would result in 1 unnecessary endoscopic retrograde cholangiopancreatography and 2 unnecessary endoscopic ultrasounds.

CONCLUSIONS

Our prospective study further suggests that European guidelines outperform American in the sitting of acute biliary pancreatitis.

Figure 1: Patient flow chart.

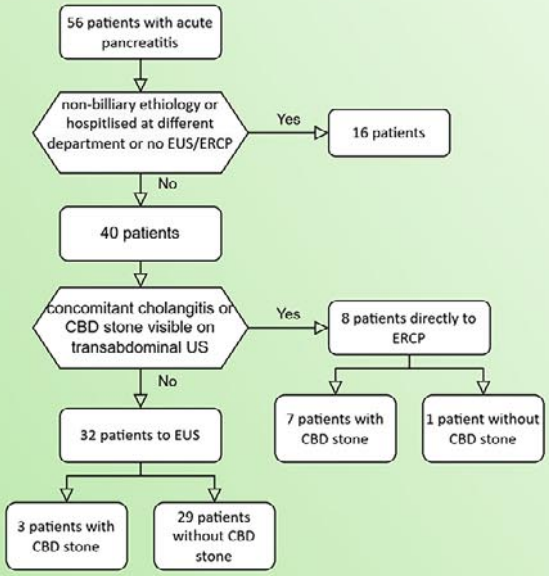

Table 2: Comparison of ASGE 2019 probability and ESGE likelihood groups for common bile duct stones in acute biliary pancreatitis.

	Common Bile Duct Stone	
	Yes (N= 10)	No (N=30)
ASGE high probability	6 (75%)	2 (25%)
ASGE intermediate probability	4 (13.8%)	25 (86.2%)
ASGE low probability	0 (0%)	3 (100%)
ESGE high likelihood	4 (80%)	1 (20%)
ESGE intermediate likelihood	6 (20%)	24 (80%)
ESGE low likelihood	0 (0%)	5 (100%)

Table 3: Sensitivity and specificity of ASGE 2019 and ESGE algorithms and single predictors for prediction of choledocholithiasis in acute biliary pancreatitis.

	Sensitivity (%)	**Specificity (%)**
ASGE high probability	60	93,3
ASGE intermediate probability	100	10
ESGE high likelihood	40	96,7
ESGE intermediate likelihood	100	16,7
Common bile duct stone visualized on transabdominal ultrasound	20	96,7
Clinical ascending cholangitis (ASGE)/Features of cholangitis (ESGE)*	40	100
Dilated common bile duct on transabdominal ultrasound plus elevated bilirubin > 68.4 µmol/L	40	96,7
Abnormal liver biochemical tests (ASGE)/Abnormal liver function tests (ESGE)*	100	20
Age over 55	80	36,7
Dilated common bile duct on abdominal ultrasound	50	80

Conversion surgery for advanced hepatocellular carcinoma following complete response to transarterial radioembolization combined with atezolizumab and bevacizumab

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Background:

The current update of Barcelona Clinic Liver Cancer Classification recommends systemic treatment with atezolizumab and bevacizumab as the first-line therapy. However, recent studies suggest that integration of immune checkpoint inhibitors (ICIs) with locoregional therapies like transarterial radioembolisation (TARE) presents a potentially successful strategy for improving outcomes in advanced HCC. Combining radiation with ICIs has proven to have a synergistic and an abscopal effect.

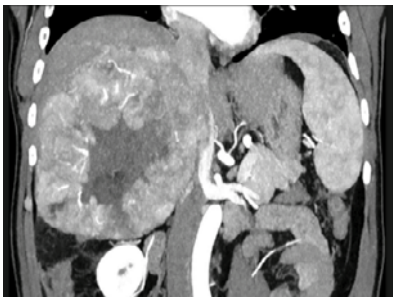
Aim:

Our study presents a case series of three consecutive patients with advanced hepatocellular carcinoma, who were treated with TARE followed by atezolizumab and bevacizumab.

Material and methods:

Between June 2020 and April 2024, three patients with advanced HCC were treated with TARE followed by atezolizumab and bevacizumab.

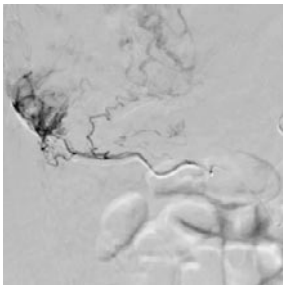
- **Patient 1**: A 59-year-old female, Child-Pugh A, with a 12 cm tumor and a 1,5 cm satellite lesion located in the liver, with hepatic vein and inferior vena cava (IVC) tumor thrombosis (Vv3).
- **Patient 2**: A 63-year-old male with chronic HCV, without cirrhosis, presenting with a 10 cm tumor and portal vein tumor thrombosis (Vp4).
- **Patient 3**: A 50-year-old male, Child- Pugh A with a 17 cm tumor with portal vein and IVC tumor thrombosis (Vp3, Vv3).



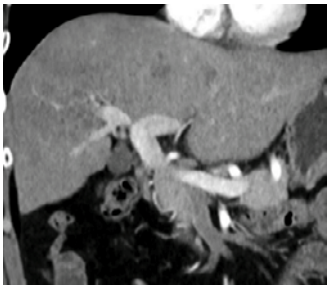
Patient 3: CT scan before treatment showed a 170 mm HCC in the right hepatic lobe, involving the right portal vein branch and extending into the right hepatic vein, with tumor thrombus identified in the IVC (Vp3, Vv3).

Results:

- All three patients achieved complete radiologic response according to the mRECIST criteria.

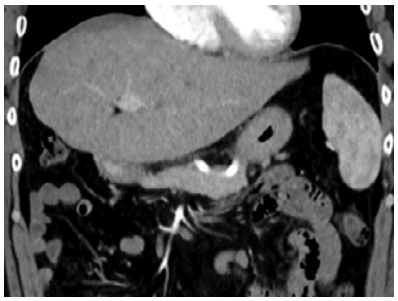


Patient 3: Angiography revealed a complex tumor perfusion. The right hepatic artery supplied approximately 70% of the tumor, while the remaining vascular supply came from two smaller branches of the right renal artery and a dominant branch from the right renal hilus.



Patient 3: Follow-up CT after transarterial radioembolisation (TARE) and 7 cycles of atezolizumab/bevacizumab showed complete response according to mRECIST criteria.

- The combined treatment approach enabled surgical resection in all three patients, each achieving a complete pathological response.
- Follow-up dosimetric analysis showed that all tumors had received a subtherapeutic absorbed radiation dose.
- No serious adverse events were recorded during the course of the treatment.



Patient 3: Follow-up CT after TARE and immunotherapy, followed by a right hepatectomy showed homogenous liver parenchyma with no radiologic signs of HCC recurrence.

Conclusion:

Our findings indicate that in carefully selected patients, the combination of transarterial radioembolization and systemic immunotherapy may enable surgical resectability of advanced hepatocellular carcinoma, even in cases where an adequate tumor absorbed dose cannot be provided.

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Cytomegalovirus enterocolitis in a patient with amiodarone hypersensitivity pneumonitis

Darinka Purg, Marko Hojnik, Nika Aleksandra Kravos Tramšek

A 78-year-old patient with known non-ischaemic dilated cardiomyopathy with reduced left ventricular ejection fraction, asthma and type 2 diabetes mellitus was treated with amiodarone from 2019. In April 2023, he developed hypersensitivity pneumonitis due to amiodarone and methylprednisolone (0.5 mg/kg body weight) was initiated along with prophylactic osteoporosis treatment and trimethoprim with sulphamethoxazole.

On the 18th day of methylprednisolone treatment, an Addisonian crisis resulted. Subsequent investigations revealed Herpes simplex virus type 1 infection and elevated serum Cytomegalovirus (CMV) DNA levels. Gastrointestinal complications included fungal esophagitis, Helicobacter pylori chronic gastritis and mild chronic duodenitis.

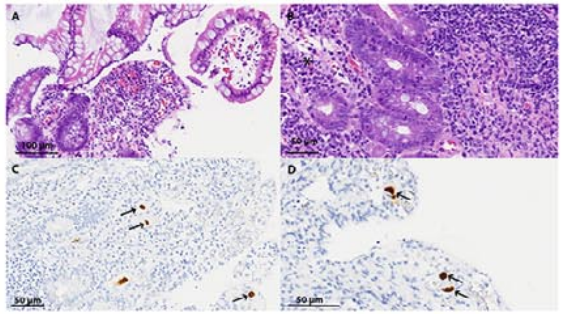

Figure 1 (a-d): Small intestinal mucosa samples. The villi were normally dense with epithelium without atypia. The lamina propria was focally mildly fibrosed, moderately infiltrated with mononuclear cell inflammatory infiltrate rich with plasma cells ((b) - area with symbol *). A few eosinophilic and neutrophilic granulocytes were also present in the inflammatory infiltrate. Lymphatic aggregates were present. There were no signs of cryptitis, no crypt microabscesses and no epithelioid granulomas. Immunohistochemical staining revealed nuclear staining in CMV infected cells ((c, d) - marked with arrows).

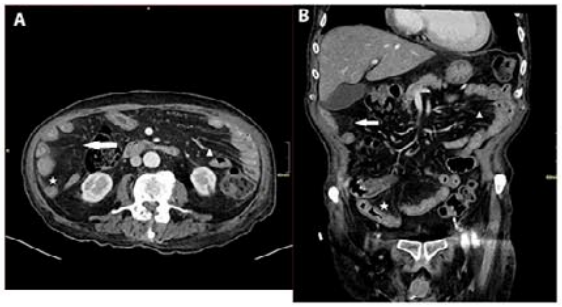

Figure 2 (a-b): Axial (A) and coronal (B) contrast-enhanced CT image showed signs of infectious enteritis. The capture shows diffuse small bowel wall thickening with mucosal hyperenhancement – so called accordion sign (asterisk) and pericentric fat stranding (arrow). It also shows mesenteric vessel engorgement (arrowhead).

CMV infection was histologically confirmed in the terminal ileum (Figure 1 a-d) and colonic mucosa samples. Abdominal CT confirmed infectious enteritis involving the entire small bowel (Figure 2 a-b). Ischemic colitis, coeliac disease, inflammatory bowel disease and parasitic infections were ruled out.

Treatment with valganciclovir (900 mg BID) for six weeks was successful, leading to clinical improvement and a disappearance of CMV DNA. Follow-up endoscopic and histological examinations did not confirm the persistence of CMV infection.

Regular follow-ups continue, with the patient still receiving low-dose methylprednisolone. Further hematological evaluation is planned due to persistent monoclonal gammopathy, however until now we didn't proof lymphoma, myeloma or other hematological malignancy.

Conclusion

Cytomegalovirus colitis is considered in patients with AIDS, hematological malignancies or after tissue and organ transplantation. It is also appropriate to consider it in the case of immunocompromised patients after glucocorticoid therapy (1-2). We report a case of tissue-invasive CMV infection in an immunocompromised patient due to long-term corticosteroid therapy after amiodarone-induced interstitial pneumonitis.

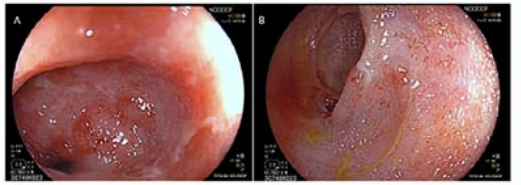

Figure 3 (a-b): Endoscopic image of terminal ileum. The capture shows mucosal inflammation, ulceration, and erythema.

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EFFICACY AND CONSUMPTION OF GOLIMUMAB IS SIMILAR WITH EUROPEAN AND AMERICAN DOSING REGIMENS IN ULCERATIVE COLITIS: RESULTS OF A PROSPECTIVE STUDY

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BACKGROUND AND AIM:

- Golimumab maintenance dose for patients weighing ≤ 80 kg **differs** in European Union (EU) (= 50 mg every 4 weeks) and United states of America (US) (= 100 mg every 4 weeks) .
- But is efficacy, safety and drug consumption **the same after 1 year of treatment**?

MATERIAL AND METHODS:

- Prospective multicenter study of 29 patients ≤ 80 kg with ulcerative colitis.
- The same induction of golimumab and different 1 year maintenance regimen:
  - US (52 %): 100 mg every 4 weeks,
  - EU (48 %): 50 mg every 4 weeks:
    - Inadequate or loss of response in EU **patients increase to 100 mg every 4** weeks.
- Co-primary endpoints: **endoscopic improvement and clinical remission.**

Table 1: Patient demographics

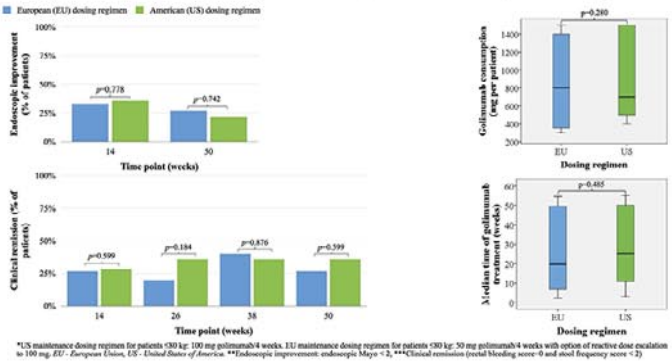
		European (EU) dosing regimen*	American (US) dosing regimen**	All patients	p-value
Number of patients		14	15	29	/
Sex, patient number (%)	Male	4 (28.6)	5 (33.3)	9 (31.0)	/
	Female	10 (71.4)	10 (66.7)	20 (67)	/
Age at diagnosis (years, median with range)		25 (14 – 53)	36 (17 – 66)	31 (14 – 66)	0.012
Montreal disease extent, number of patients (% per group)	E1 (proctitis)	2 (13.3)	6 (40)	8 (27.6)	/
	E2 (left-sided)	10 (66.6)	4 (26.7)	14 (48.3)	/
	E3 (extensive)	2 (13.3)	5 (33.3)	7 (24.1)	/
Age at the start of golimumab treatment, median in years (range)		34 (18 – 58)	47 (19 – 71)	40 (19 – 71)	0.007
Treatment at the start of golimumab, number of patients (% per group)	Aminosalicylates	11 (78.6)	10 (66.6)	21 (72.4)	0.474
	Systemic steroids	6 (42.9)	4 (26.7)	10 (34.4)	0.359
	Local steroids	1 (7.1)	2 (13.3)	3 (10.3)	0.584
	Azathioprine	0 (0)	3 (20)	3 (10.3)	0.077

* EU: 50 mg of golimumab every 4 weeks with option of reactive dose escalation to 100 mg mg in case of inappropriate response
**US: 100 mg of golimumab every 4 weeks)

RESULTS:

- Patient demographic data (Table 1).
- Endoscopic improvement and clinical remission rates were similar in EU and USA maintenance regimens (Figure 1).
- 8/14 (57%) of patients in EU regimen needed dose escalation to 100 mg due to inadequate response.
- Drug persistence and drug consumption were similar in both maintenance regimens (Figure 1).
- In the US regimen 3 potentially drug-related side effets occurred, none in the EU regimen.

Figure 1: Efficacy and consumption of golimumab in European vs. American dosing maintenance regimens



*US maintenance dosing regimen for patients <80 kg: 100 mg golimumab/4 weeks. EU maintenance dosing regimen for patients <80 kg: 50 mg golimumab/4 weeks with option of reactive dose escalation to 100 mg. *EU - European Union, US - United States of America.* **Endoscopic improvement: endoscopic Mayo < 2, ***Clinical remission (rectal bleeding score=0 and stool frequency score < 2)

CONCLUSIONS:

- EU and US golimumab maintenance regimens resulted in **similar endoscopic improvement and clinical remission rates** in UC with body weight ≤ 80 kg
- Due to high dose escalation rates in EU regimen **dose consumption was similar** in both maintenance regimens.

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ENDOSCOPIC FULL-THICKNESS RESECTION (EFTR) IMPLEMENTATION IN A SINGLE CENTER: INDICATIONS AND OUTCOMES IN THE FIRST 35 CASES

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BACKGROUND AND AIM

- Endoscopic full-thickness resection (EFTR) is a minimally invasive resection technique for epithelial and subepithelial lesions of the gastrointestinal tract.
- It reduces procedure-related complications and mortality.
- The aim of this study is to report the results of all EFTRs performed at a single centre in Slovenia.

MATERIAL AND METHODS

- EFTR was introduced in our unit in June 2022.
- All consecutive patients were included in prospectively managed EFTR registry.
- Data were extracted from the registry and analyzed retrospectively.
- Endpoints of the study were: technical success, R0-resection, adverse events and rate of the surgery (medical indication and EFTR complication.

RESULTS

Figure 1

Table 1

All patients, All EFTR procedures N (%)	34 (100), 35 (100)
Male (%), female (%)	22 (64.7), (35.3)
Technical success N (%)	30 (85.7)
Median lesion size in mm (range)	13 (5– 25)
R0 resection N (%)	23 (65.7)
Hospitalization N (%), Surgery after EFTR N (%)	24 (68.6), 16 (45.7)

Table 2

Indication for EFTR	N (%)
Carcinoma	13 (37.1)
Periappendiceal lesion	9 (25.7)
Fibroadenoma	7 (20.0)
Peridiverticular lesion	2 (5.7)
Neuroendocrine tumor	2 (5.7)
Subepithelial lesion	1 (2.9)
Scar	1 (2.9)

Table 3

Anatomic site	N (%)
Appendix	9 (25.7)
Ascending colon	7 (20.0)
Sigmoid colon	6 (17.1)
Splenic flexure, colon	4 (11.4)
Descending colon	2 (5.7)
Transverse colon	2 (5.)
Hepatic flexure, colon	2 (5.7)
Antrum, duodenal bulb	1 (2.9), 1 (2.9)
Gaster corpus	1 (2.9)

Table 1 represents demographic patient data and treatment outcome.
Table 2 represents indications for EFTR.
Table 3 represents anatomic site of lesions removed with EFTR.
Table 4 represents adverse events during or after EFTR.
EFTR – endoscopic full thickness resection.

Table 4

Adverse events		N (%)	treatment
appendicitis		3 (8.6)	surgery
perforation	Sigmoid colon	1 (2.9)	surgery
	Ascendingt colon	1 (2.)	conservative

- June 2022 – June 2024: a total of **35 lesions** in 34 patients were removed with EFTR in our unit.
- **Technical success** was achieved in 30 (85.7 %) cases.
- Location ot the majority cases performed: the **colon** 32 (91.4%).
- The commonest indication for EFTR**: pT1 colorectal cancer** 13 (37.1%),The median specimen size was 13 mm (5 – 25 mm).
- The commonest anatomical location: **appendix** 9 (25.7%)
- More than half of the patients 24 (68.6 %) were performed in an inpatient setting.
- **R0 resection** was achieved in 23 cases (65.7 %).
- The most common pathohistological finding **was low-grade dysplasia in tubular adenoma** 8 (22.8 %), followed by normal tissue or inflammation 6 (17.1%), sessile serrated lesion without dysplasia 2 (5.7 %), tubulovillous adenoma (low-grade dysplasia) 2 (5.7%) and neuroendocrine tumor 2 (5.7%).
- The most common adverse event was **appendicitis** 3 (8.6 %),
- A total of 16 patients (45.7%) underwent surgery.
- More than half of the periappendiceal lesions 6/9 (66%) underwent surgery, of which half were due to appendicitis and the other half after the R1 resection.
- Results are represented in Figure 1.

CONCLUSIONS

- Our early experience with EFTR demonstrates its potential as a minimally invasive option for treating a variety of gastrointestinal lesions.
- The procedure proved effective in most cases.
- Appendiceal lesions presented significant challenges, with a high rate of adverse events (appendicitis and a need for subsequent surgical intervention).
- 2/3 of the patients with periappendiceal lesions required surgery, underscoring the difficulty of achieving both safe and complete resection in this location.

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Impact of Surgical Volume on Gastric Cancer Survival in Slovenia: preliminary results

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Introduction

The relationship between hospital surgical volume and gastric cancer survival remains debated. This study evaluates the impact of surgical volume on survival in Slovenia, where surgical centralization is unregulated.

Methods

A retrospective cohort study analyzed 1,014 all cause gastric cancer patients including 868 adenocarcinoma patients diagnosed between 2016 and 2020 using the Slovenian Cancer Registry. Patients were stratified by surgical volume into high- and low-volume centers. Survival analysis was conducted using Kaplan-Meier estimator for overall survival and Pohar-Perme estimator for net survival. Adjustments were made for age, sex, and cancer stage.

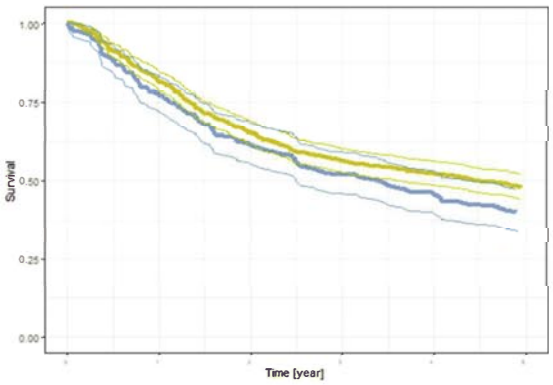

Figure 1. Kaplan-Meier survival analysis with Log-rank test group comparison showing better survival for gastric adenocarcinoma patients opperated in high volume centers (chi-square = 4,56, df = 1, p = 0.03)

Results

Approximately 75% of patients underwent surgery at two high volume university hospitals. Median survival for all cause gastric cancer was 5,8 years in high volume centers and 4 years in low volume centers. For adenocarcinoma the median survival in high volume centers was 4,5 years and 3,4 years in low volume centers. Log rank test showed statistically significant overall survival difference between low and high volume centers for both all cause gastric cancer (chi-square = 5,366, df = 1, p = 0.021) and adenocarcinoma (chi-square = 4,56, df = 1, p = 0.03) (Figure 1). Benefits persisted across most age and tumor stage subgroups (Table 1).

variables		Overall survival		Net survival	
Gastric cancer – all types	df	chi square	p	test statistics	p
center	1	5,366	**0,021**	3,606	0,058
center and sex	3	10,088	**0,018**	5,682	0,128
center and age	5	47,945	**<0,001**	13,621	**0,018**
center and stage	5	231,323	**<0,001**	195,868	**<0,001**
Gastric adenocarcinoma	df	chi square	p	test statistics	p
center	1	4,56	**0,03**	3,20	0,074
center and sex	3	5,60	0,13	3,48	0,323
center and age	5	42,29	**<0,001**	17,93	**0,003**
center and stage	5	180,35	**<0,001**	165,55	**<0,001**

Table 1. Overall survival (Kaplan-Meier survival and Log-rank test group comparison) and net survival (Pohar-Perme Net survival and Log-rank type test group comparison).

Conclusion

High surgical volumes correlate with better survival, underscoring the need for strategic centralization based on local characteristics of individual healthcare systems. Findings provide valuable insights into optimizing gastric cancer care in small healthcare systems like Slovenia. A manuscript providing a more in-depth analysis of the relationship between hospital volume and survival in gastric adenocarcinoma is currently in preparation.

SLOVENSKO ZDRUŽENJE ZA GASTROENTEROLOGIJO IN HEPATOLOGIJO

6th International Congress of Slovenian Society for Gastroenterology and Hepatology

Austria Trend Hotel Ljubljana, June 5th to 7th, 2025

Intestinal Failure: Clinical Case Presentation 1 – SHORT BOWEL SYNDROME

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INTRODUCTION

Short bowel syndrome and intestinal failure are possibly life-threatening conditions, affecting 0.4 to 25.0 people per million across Europe and the USA (1). One of the common complications is renal impairment, which can be caused by water and electrolyte loss (2).

CASE REPORT

- 72-year-old male patient after total gastrectomy for gastric adenocarcinoma was admitted to the hospital due to gangrene of cecum.
- right hemicolectomy and ileostomy were formed
- during hospitalization, **stoma outputs were high (700 ml daily)** and laboratory results showed impaired renal function **(high values of urea and creatinine and electrolyte imbalance)** - he was discharged
- a week later he was examined at the nephrology out-patient clinic where **acute prerenal kidney failure was confirmed** and the patient was admitted back to the hospital
- he received fluids and anti-mobility agents and was discharged after a few days
- ten days later he was admitted to the Department of Clinical Nutrition due to **renal function impairment, electrolyte imbalance, malnutrition and weight loss.**

	ADMISSION	DISCHARGE
BODY WEIGHT	58.8	64.6
TBW (%)	72.8	75.7
TBW (L)	42.8	48.9
PHASE ANGLE	3.0°	2.9°

***TBW – total body water**

HOSPITALIZATION AT THE DEPARTMENT OF CLINICAL NUTRITION

- total parenteral nutrition was optimized due to short bowel syndrome and high stoma outputs
- the patient was and patient and his relatives were included in home parenteral nutrition system

CONSIDER INTESTINAL FAILURE WHEN;

- patient have previously known diseases or conditions that could contribute to dehydration or malabsorption
- renal function deterioration without intravenous therapy
- more than 1000 ml of daily stoma output in the patient
- electrolyte disorders present
- body weight lost

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Intestinal Failure: Clinical Case Presentation 2 – HIGH OUTPUT ILEOSTOMY

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CASE REPORT

- 51-year-old male with Crohn's disease, treated with infliximab, and ileostomy after terminal ileum perforation
- hospitalized due to **acute renal failure** and **hyponatremia**
- five days later due to high creatinine and urea levels, mild **hyperkalaemia** and **hypernatremia** he was hospitalized again
- parenteral hydration resulted in renal function improvement
- in the following years he was consistently losing body weight and noticed **high stoma outputs (> 1.2 L of daily output)**
- in 2022, the patient's body mass decreased from **65 kg to 38 kg**, and by the beginning of 2023 increased to 54 kg
- he was given parenteral nutrition during another hospitalization, but was **not included in home parenteral nutrition system**
- **urosepsis** developed due to **infection** with Enterobacter cloacae complex and was treated with piperacillin/tazobactam and hydrocortisone

HOSPITALIZATION AT THE DEPARTMENT OF CLINICAL NUTRITION

- **malnutrition and myopenia** were diagnosed
- intestinal failure diagnosis was confirmed
- total parenteral nutrition was optimized and patient and his relatives were included in home parenteral nutrition system

	ADMISSION	3 WEEKS LATER
BODY WEIGHT	53.6	54.1
TBW (%)	78.5	71.0
TBW (L)	42.1	38.4
PHASE ANGLE	3.6°	4.6°

***TBW – total body water**

CONSIDER INTESTINAL FAILURE WHEN;

- patient have previously known diseases or conditions that could contribute to dehydration or malabsorption
- renal function deterioration without intravenous therapy
- more than 1000 ml of daily stoma output in the patient
- electrolyte disorders present
- body weight lost

SLOVENSKO ZDRUŽENJE ZA GASTROENTEROLOGIJO IN HEPATOLOGIJO

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Intestinal Failure: Clinical Case Presentation 3 – ESOPHAGEAL PERFORATION

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INTRODUCTION

Esophageal perforation has a mortality rate between 10% - 20%, and the most significant factor affecting survival is how quickly treatment is initiated (1).

CASE REPORT

- 75-year-old male
- abdominal pain and bleeding from the postoperative wound
- treated for **metastatic adenocarcinoma of the ascending colon**, with relapse in the liver and retroperitoneal lymph nodes
- FDG-PET showed **esophageal perforation** with pneumomediastinum and intrathoracic abscess
- chest CT revealed cause of perforation was **extrahepatic metastasis**

	ADMISSION	DISCHARGE
BODY WEIGHT	78 kg	78 kg
TBW (%)	57.0	55.2
TBW (L)	44.5	43.1
PHASE ANGLE	3.8°	4.5°

***TBW – total body water**

HOSPITALIZATION AT THE DEPARTMENT OF CLINICAL NUTRITION

- **malnutrition and myopenia** were diagnosed
- patient kept **nil per os** with **optimized parenteral nutrition** and **trophic enteral feeding** through NJ tube
- vascular access port site tested **positive for Enterobacter cloacae complex** and prolonged antibiotic treatment was required
- **due to severe abdominal pain, hemoptysis and increased inflammatory markers NJ feeding was discontinued**
- total parenteral nutrition was optimized and patient and his relatives were included in home parenteral nutrition system

ALMI 6.20 kg/m^2 *
***ALMI cutoff values for men: ≤ 7.5 kg/m^2 (2)**

CONSIDER INTESTINAL FAILURE WHEN;

- patient have previously known diseases or conditions that could contribute to dehydration or malabsorption
- electrolyte disorders present
- body weight lost

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Intestinal Failure: Clinical Case Presentation 4 – VISCERAL MYOPATHY

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INTRODUCTION

Hollow visceral myopathy, a less severe variant of enteric visceral myopathy, is a rare and frequently underrecognized gastrointestinal condition. It is marked by dysfunction or impaired motility of the intestines, without any clear mechanical blockage (1).

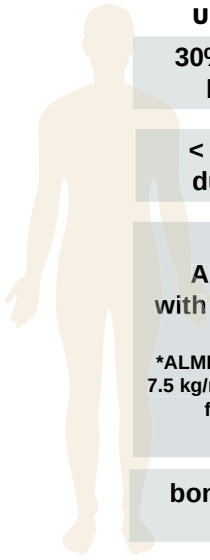
CASE REPORT

- **78-year-old male, 30 % body weight lost**
- **abdominal pain, diarrhea, vomiting, hypoalbuminemia and severe electrolyte disturbances**
- stool leakage and vomiting since childhood, but the **aetiology has never been clarified**
- treated for metastatic, hormone-sensitive prostate cancer, with metastases in the skeleton and lymph nodes

CONSIDER INTESTINAL FAILURE & NEED FOR HOME PARENTERAL NUTRITION

HOSPITALIZATION AT THE DEPARTMENT OF CLINICAL NUTRITION

- **malnutrition, protein-energy malnutrition, sarcopenia** and **osteoporosis** were diagnosed
- patient kept **nil per os** with **optimized parenteral nutrition** and **trophic enteral feeding** through NJ tube
- pathologist reviewed representative samples of the terminal ileum and colon that were resected during operation in 2024, geneticists confirmed a mutation in the MYH 11 gene
- due to **persistent vomiting drainage percutaneous endoscopic gastrostomy** was inserted and instructed patient **nil per os**
- total parenteral nutrition was optimized and patient and his relatives were included in home parenteral nutrition system



UPON ADMISSION

30% of body weight lost in 2 years

< 50% food intake due to dysphagia

ALMI 4.71 kg/m^2 with handgrip < 27 kg *

***ALMI cutoff values for men: ≤ 7.5 kg/m^2 handgrip cutoff values for men: < 27 kg (2)**

bone mineral density (T-score -3.3)

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• [2] Cruz-Jentoft, Alfonso J et al. "Sarcopenia: revised European consensus on definition and diagnosis." Age and ageing 2019; 48(1).

Laparoscopic versus Open Distal Pancreatectomy — A Single-Institution Experience

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Background: Laparoscopic distal pancreatectomy is a minimally invasive surgical approach for treating tumors in the distal pancreas.

Aim: This study aimed to compare this technique with the traditional open procedure.

Material and methods: We retrospectively analyzed a prospectively maintained database that included 400 pancreatectomies (Figure 1). The laparoscopic distal pancreatectomy group (LDP) was compared to the open distal pancreatectomy group (ODP), employing propensity score matching (PSM) for analysis.

Results: Between 2016 and 2023, 108 distal pancreatectomies were performed: 19 (17.6%) laparoscopically and 89 (82.4%) openly, with a conversion rate of 13.6%. Severe morbidity rates were 28.1% in the ODP group, 47.4% in the LDP group, and 15.8% in the ODP-PSM group. The difference in severe morbidity rates between the LDP and ODP-PSM groups was statistically significant (p = 0.034), largely due to a high rate of Clavien–Dindo grade 3a complications, which were 42.1% in the LDP group compared to 10.5% in the ODP-PSM group (p =0.042) (Figure 2). The 90-day mortality rates were 3.3% in the ODP group and 5.3% in the LDP and ODP-PSM groups. The LDP group exhibited a shorter duration of intravenous narcotic analgesia, averaging 5 days compared to 7 days in the ODP group (p = 0.041). The groups had no significant differences in R0 resection or postoperative pancreatic fistula rates.

Conclusions: Oncological outcomes between the two approaches are already comparable, and postoperative pain management appears to be more favorable with the laparoscopic one.

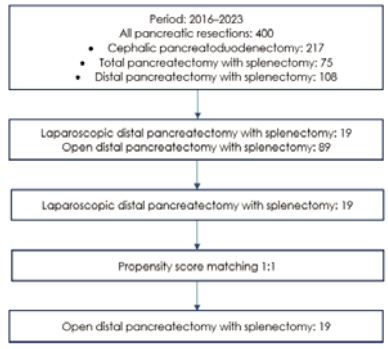
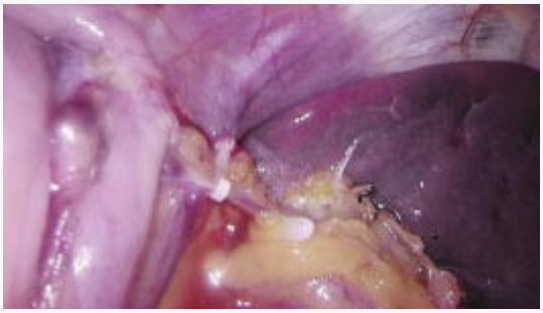


Figure 1. The study flowchart of pancreatectomies from 2016 to 2023.



Picture 1: Ligation of the splenic artery and vein prior to resection of the pancreatic tail

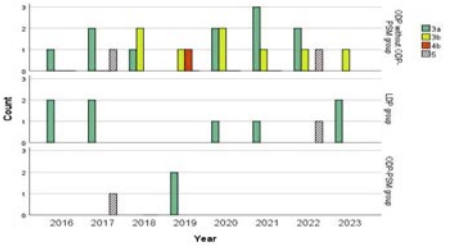


Figure 2. The time-trend analysis of complications of Clavien–Dindo grades ≥ 3a among groups. LDP = laparoscopic distal pancreatectomy; ODP = open distal pancreatectomy; PSM = propensity score matching.

Original publication:
Plahuta I, Šarenac Ž, Golob M, Turk Š, Ilijevec B, Magdalenić T, Potrč S,Ivanecz A.
Laparoscopic and Open Distal Pancreatectomy -An Initial Single-Institution Experience with a Propensity Score Matching Analysis.
Life (Basel). 2025 Jan 14;15(1):97.
doi: 10.3390/life15010097.

Liver MRI elastography: From setup to quality assurance

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BACKGROUND

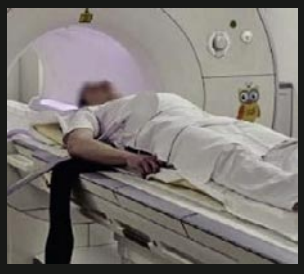
The incidence of chronic liver disease is increasing in the Western world, leading to significant morbidity and mortality, with liver fibrosis as a common outcome. While biopsy remains the gold standard for evaluating liver fibrosis and inflammation, its limitations necessitate noninvasive alternatives, especially for asymptomatic patients with progressive fibrosis. Among noninvasive techniques, MRE is highly regarded for its accuracy and repeatability in assessing liver stiffness using mechanical waves.

PROCEDURE

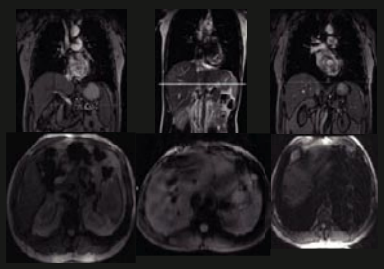
At our institution, MRE is performed using body-array coils. The procedure involves:

1. **Patient Preparation**: Patients fast for 4 hours prior to the examination and hold their breath at end expiration to ensure consistent slice positioning.

2. **Positioning of Passive Driver**: The passive driver is placed over the right hepatic lobe, typically using the xiphoid process and right midclavicular line for positioning.



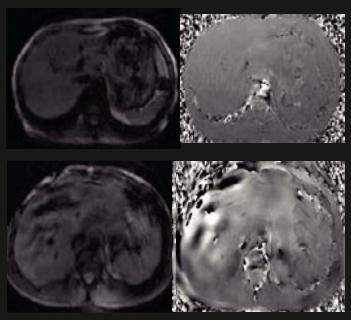
a) Positioning of passive driver



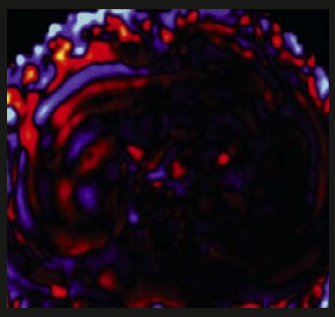
b) Slice positioning with optimal positioning in the middle, too low on the left and too high on the right

3. **Slice Positioning**: Slices are positioned to cover the largest liver surface area at the portal bifurcation, avoiding the liver dome and inferior portions.

4. **Quality Control**: This involves reviewing magnitude images for signal voids, phase and wave images for wave propagation, and elastograms for diagnostic quality.

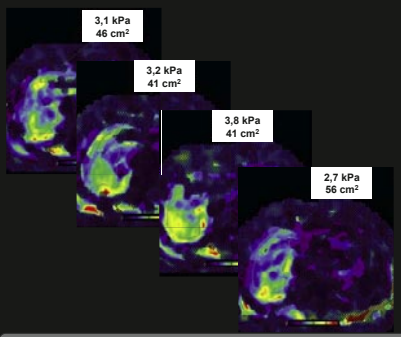


c) Magnitude images with appropriate subcutaneous signal void in the bottom picture



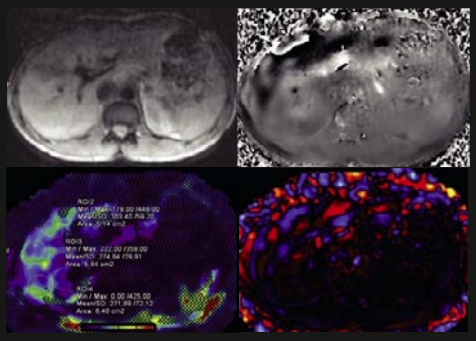
d) Wave image with appropriate wave propagation

5. **MRE Analysis and Measurements**: Images (magnitude, wave, grey- and color elastograms) are reviewed, and stiffness is measured in kilopascals (kPa) using three regions of interest (ROIs) on the greyscale elastogram map, excluding areas prone to artifacts.



f) Generic formula for calculating the weighted arithmetic mean (AM) of the mean liver stiffness values obtained from the ROIs drawn on four sections, with each section having an ROI size of w pixels would be:
AM = (m1w1 + m2w2 + m3w3 + m4w4) / (w1 + w2 + w3 + w4)

The weighted mean for the example on the left would be 3,15 kPa, which would be reported as mild fibrosis (F1).



e) Magnitude, wave and elastogram images of a successful MRE.

CONCLUSION

MRE is a reliable noninvasive method for quantifying liver fibrosis, offering high reproducibility essential for managing and monitoring patients with chronic liver disease.

Sixth Congress of the Slovenian Society of Gastroenterology and Hepatology

Long-term effect of *Helicobacter pylori* eradication on risk factors for cardiovascular disease – is there a connection?

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The clinical trial registration number is EUDRA CT 2020-003399-42.

Introduction: Cardiovascular disease (CVD) remains the leading cause of mortality worldwide and although traditional risk factors for atherosclerosis are well established, accumulating evidence suggests that inflammatory parameters may also play a pivotal role in its pathogenesis. Recently, *Helicobacter pylori* infection has gained increasing attention as a potential contributor to CVD risk. Thus, our aim was to investigate the long-term effects of successful *H. pylori* eradication on several CVD risk factors.

Methods: A total of 72 patients meeting the inclusion and exclusion criteria were enrolled (July 2020 to November 2022). Participants were randomly assigned to two treatment groups (group 1: 14-day regimen with esomeprazole, amoxicillin, and clarithromycin; group 2: 14-day regimen with esomeprazole, amoxicillin, metronidazole and colloidal bismuth subcitrate). We evaluated changes in insulin resistance (HOMA-IR score), lipid profiles and subtypes (nuclear magnetic resonance spectroscopy) and trimethylamine N-oxide (TMAO; Cardio Test INFAI) at baseline, two months, and one year following successful *H. pylori* eradication.

Results: Of the 72 patients included, 13.9% (10/72) did not complete the study protocol. At baseline, no statistically significant differences were observed in CVD risk factors between the two groups. Following successful *H. pylori* eradication (Table 1 and Figure 1), both groups demonstrated significant reductions in total cholesterol (p = 0.004), low-density lipoproteins (p = 0.011), small dense lipoprotein particles (p = 0.029), and TMAO levels (p = 0.05). No statistically significant changes were observed in body mass index (BMI, p=0.910), waist circumference (p = 0.325) or insulin resistance (p = 0.342).

Table 1. Changes in various parameters over time in the entire cohort.

	T1 (n=62)	T2 (n=62)	T3 (n=62)	p-value
Body mass index	27.0 ± 4.4	27.0 ± 4.3	26.8 ± 5.2	0.910
Waist circumference	92.8 ± 11.8	92.6 ± 12.0	93.7 ± 11.8	0.325
Antihypertensive therapy	14 (22.6%)	14 (22.6%)	14 (22.6%)	1.000
Dyslipidaemia therapy	6 (9.7%)	7 (11.3%)	7 (11.3%)	0.321
Insulin resistance (HOMA-IR)	2.3 ± 2.1	2.2 ± 1.4	2.0 ± 1.1	0.342
Cholesterol (mg/dl)	212.1 ± 39.5	200.3 ± 40.4	197.3 ± 41.9	0.004
LDL (mg/dl)	131.9 ± 34.0	124.1 ± 37.0	120.2 ± 35.4	0.011
HDL (mg/dl)	56.1 ± 15.5	54.0 ± 14.7	55.2 ± 15.3	0.159
Triglycerides (mg/dl)	141.3 ± 74.7	136.8 ± 63.1	135.8 ± 76.6	0.686
SLDL-p (nmol/l)	604.7 ± 334.0	552.0 ± 351.4	542.7 ± 351.9	0.029
TMAO (mg/l)	38.3 ± 29.9	29.2 ± 18.8	31.5 ± 30.4	0.050

T1 – at baseline, T2 – 2 months post-eradication, T3 – 1-year post-eradication
LDL – low density lipoproteins, HDL – high density lipoproteins, SLDL-p – small low density lipoprotein particles, TMAO – trimethylamine N-oxide

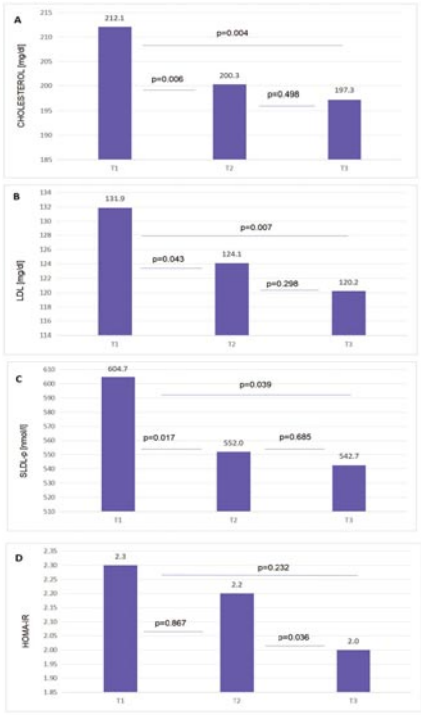

Figure 1. Total cholesterol, low density lipoprotein (LDL), small low density lipoprotein particles (SLDL-p) and insulin resistance (HOMA-IR) levels following *H. pylori* eradication.

T1 – at baseline, T2 – 2 months post-eradication, T3 – 1-year post-eradication

Conclusions: Successful eradication of chronic *H. pylori* infection was associated with a significant reduction in total cholesterol, low-density lipoproteins, small dense lipoprotein particles and TMAO in both treatment groups. These findings suggest that chronic *H. pylori* infection may influence lipoprotein levels and potentially increase the risk for CVD, possibly through increased systemic inflammation.

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Myocarditis induced by ustekinumab - a clinical case

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Introduction

Ustekinumab (UST) is generally considered to be a safe drug with respect to major adverse cardiovascular events (1,2). Myocarditis, although rare, can be an extraintestinal manifestation of inflammatory bowel disease (IBD), due to infection or drug-induced (3).

Clinical case presentation

A 43-year-old woman with ulcerative proctosigmoiditis was unsuccessfully treated with azathioprine, infliximab and filgotinib. UST was introduced as a third-line advanced therapy. Four weeks after induction, she felt chest pain and exertion dyspnoea. ECG showed minor ST changes inferolaterally, hs-TnI peaked at 5016 ng/L. Pro-BNP, CRP, leukocyte and haemoglobin levels were normal. Coronary angiography excluded coronary disease (image 1). Cardiac MRI showed changes consistent with myocarditis (image 2). Infectious causes were excluded and a UST-induced myocarditis was diagnosed. Patient recovered after treatment with acetylsalicylate and discontinuation of UST. We initiated vedolizumab therapy and achieved clinical remission of UC without new adverse events.

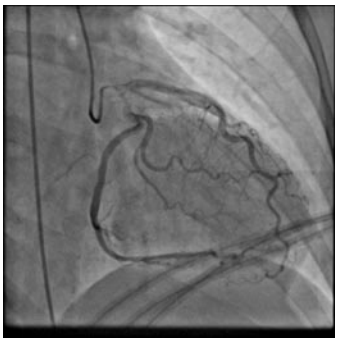

Image 1: Coronarography showing normal coronary vessels

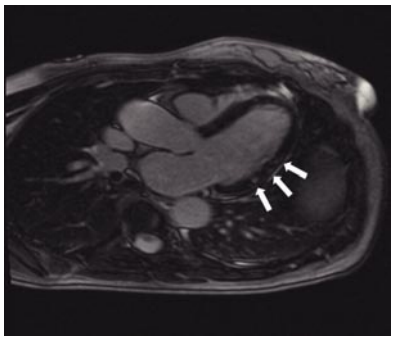

Image 2: Signs of myocarditis (arrows) on cardiac magnetic resonance imaging

Discussion

This case highlights a rare but potentially serious complication of UST treatment. Although UST has demonstrated efficacy and safety in the treatment of IBD, isolated cases of myocarditis suggest that rare idiosyncratic reactions may occur (1). Chronic inflammation increases cardiovascular risk, and myocarditis may be the result of immune dysregulation triggered by the disease or the treatment (3,4). Two other cases of myocarditis caused by UST have been described in the literature (3,5). Non-ischaemic cardiac events, e.g. myocarditis, are less studied than ischaemic events associated with advanced IBD treatments (2). The diagnosis in our case was based on elevated cardiac biomarkers and imaging studies, and exclusion of coronary artery disease and infections. Discontinuation of UST and symptom management resulted in resolution of adverse event.

Conclusion

UST has an overall favourable safety profile, but early recognition and multidisciplinary treatment are crucial when cardiac adverse events occur. This is the third reported case of myocarditis in CVD caused by UST.

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Organ-Preserving Strategy for Locally Advanced Rectal Cancer: *watch& weight approach*

UCC Maribor (observational study - preliminary findings)

Urska Gajsek, Bojan Krebs- Clinical Department of Abdominal and General Surgery, UCC Maribor, Slovenia

Introduction

Treatment of locally advanced rectal cancer involves a multidisciplinary approach. The standard care is neoadjuvant chemoradiotherapy followed by total mesorectal excision (TME). In selected patients who achieve clinical, endoscopic and radiological complete regression after neoadjuvant chemoradiation a narrow follow -up program of watchful waiting (watch and wait approach) could be offered.[1]

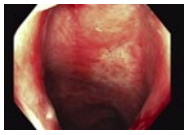
Methods

From 2021 to 2024, 57 patients with stage II/III rectal cancer received neoadjuvant chemoradiation (nCRT). They were reassessed for treatment response 8 weeks post-nCRT. Patients achieving clinical complete response (cCR) entered a "watch and wait" (WW) protocol per Slovenian guidelines.[2] This report covers their outcomes over three years.

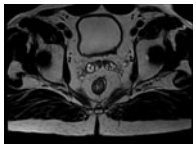
Results

PATIENTS SELECTION: cCR in highly motivated patiets at 8w±2w post nCRT

endoscopy: flat scar, telangiectasia, no ulceration or mass



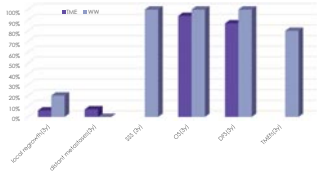
MRI (DWI): no residual tumor /no suspicious lymph nodes



DRE:no palpable mass

		loc reg(3y)	SSS(3y)	dist met(3y	DFS(3y)	OS(3y)	TMEfs(3)
TME	47	6% (3)		7% (5)	87% (41)	94% (3)	
WW	10	20% (2)	100%(2)	0% (0)	100% (10)	100% (10)	80%(8)

Table 1: Observation at 3y:TME-total mesorectal excision; WW- watch&wait; SSS- salvage surgery success;DSF-disease free survival; OS- overall survival, TMEfs- TME free survival



Two out of ten patients enrolled in the WW protocol experienced local regrowth at 12 and 15 months after nCRT and underwent salvage TME surgery. No distant metastases were observed. Patients with incomplete clinical responses were recommended for TME. Long-term organ preservation was achieved in 14% (8) of patients.

Conclusion

17% of our patients had cCR and were suitable for the WW approach.

nCRT for rectal cancer led to long-term organ preservation in 14% of our cohort.

The WW approach appears to be oncologically safe with strict three-year surveillance after reassessment. There was no significant difference in DFS and OS between the TME and WW groups.

Any local regrowth necessitates salvage TME surgery.

No distant metastases have been observed.

Additional results are expected in the coming years.

Literature

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Pembrolizumab-induced enterocolitis – a clinical case

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[2]Department for gastroenterology, Clinic for internal medicine, University Medical Centre Maribor, Ljubljanska 5, 2000 Maribor, Slovenia

Introduction

Immune checkpoint inhibitors have significantly improved the prognosis of certain cancers, but they may have diverse and significant side effects. Among the most common is immune-mediated colitis, and less commonly, extensive enteritis has been described (1,2).

Case report

A 51-year-old patient with two synchronous tumours (clear cell kidney carcinoma and invasive lung adenocarcinoma) on adjuvant pembrolizumab therapy (7 cycles) was hospitalised for severe diarrhoea, diffuse abdominal pain and bloating. Laboratory findings were elevated CRP (8 mg/l), fecal calprotectin (582 µg/g) and serum lipase (12.89 µkat/l). Microbiological causes of diarrhoea were excluded. Endoscopy confirmed erosive rectosigmoiditis (image 1). Histologically most likely diagnosis was immune-mediated colitis. We started empirical treatment with mesalazine and budesonide. Because of the elevated serum lipase, we performed an abdominal CT scan, which showed diffuse inflammatory changes of the small bowel (mainly ileum) without dilatation and no changes in the pancreas (image 2). We concluded that elevated serum lipase was due to intestinal inflammation and not pancreatic involvement. Because of concomitant enteritis, budesonide was replaced by methylprednisolone. There was a marked clinical improvement after 24 hours of treatment. The patient continued outpatient treatment in accordance with the treating oncologist.

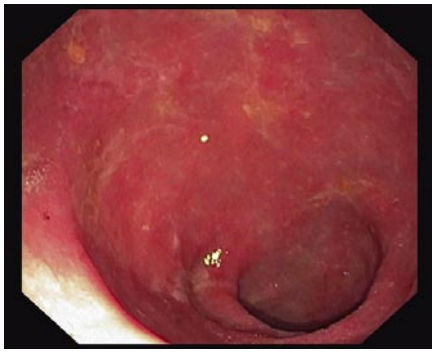

Image 1: Colonoscopy confirming erosive rectosigmoiditis

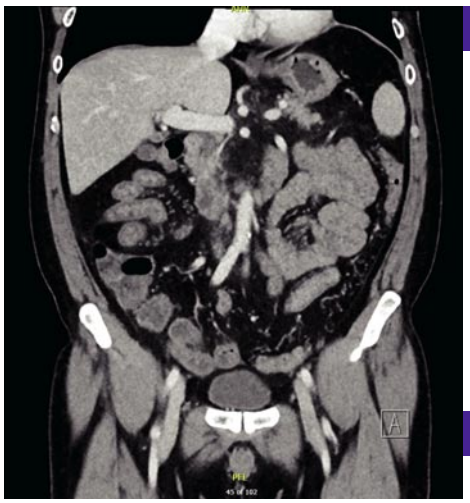

Image 2: Diffuse inflammatory changes in the small bowel on CT

Discussion and conclusion

Immune-mediated colitis, which can occur from a few weeks to a few months after the first immunotherapy administration, is the most common form of gastrointestinal involvement due to immunotherapy (2). In our patient, pembrolizumab caused extensive enteritis in addition to colitis, manifested by diarrhoea, marked flatulence and elevated serum lipase, and he responded very well to systemic corticosteroid treatment. If diarrhoea recurs during dose reduction or after discontinuation of methylprednisolone, he is candidate for biologic therapy (3).

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Postoperative Challenges in Crohn's Disease: The Hidden Burden of Resection Length

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Introduction.
Crohn's disease (CD) is a common chronic inflammatory condition affecting **61.6 to 178 per 100,000** people in Europe. **Small intestinal bacterial overgrowth (SIBO), which is** characterized by excessive bacteria occurs in **up to 45.2%** of CD patients and tends to worsen with aggravating gastrointestinal dysfunction and nutritional deficiencies.

Figure 1. SIBO symptoms

Aim.
To evaluate the **prevalence of SIBO** in Crohn's disease patients following upper gastrointestinal surgery, and its association with postoperative symptoms and resection length.

Methods.
Twenty-six patients' post-upper gastrointestinal surgery were evaluated for SIBO using the **hydrogen glucose breath test.** Clinical characteristics, dietary habits, and symptoms were documented; resection length was obtained from surgical records, and quality of life assessed via the SF-36 questionnaire.

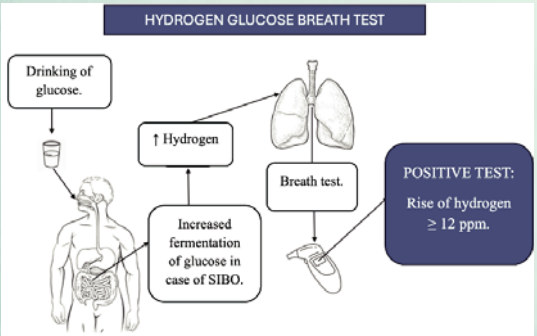

Figure 2. Glucose hydrogen breath test.

Results.
Out of 26 participants, 5 (19.2%) were SIBO positive and 21 (80.8%) SIBO negative (see Graph below). No individual symptom showed a statistically significant association with SIBO positivity. Regarding type of resection: 15/26 (57.5%) had ileocecal resection, 1/26 (3.8%) resection of terminal ileum and ileum, 2/26 (7.7%) segmental resection of the ileum, 3/26 (11.5%) resection of the small intestine, 3/26 (11.5%) segmental resection of the small intestine, 1/26 (3.8%) total colectomy, and in 1/26 (3.8%) data were missing. SIBO was significantly more prevalent in patients with longer intestinal resections ($p = 0.013$).

All surgical resections	Positive test (n = 48)	Negative test (n = 109)	*p*
Age (years)	57,4 ± 16,7	51,7 ± 10,0	0,297
Women (n, (%))	2 (40 %)	9 (42,9 %)	1,00
BMI (kg/m^2)	24,8 ± 3,4	25,7 ± 4,2	0,745
Level of education	4,60 ± 1,14	4,67 ± 1,35	0,732
SE status	6,00 ± 0,82	6,00 ± 1,58	0,820
Time from S (months)	26,3 ± 20,7	23,4 ± 14,4	0,969

Figure 3. Anthropometric data according to SIBO +/- test.

	Positive test (n = 5)	Negative test (n =21)	*p*
Chronic abdominal pain	2,80 ± 1,48	3,33 ± 2,08	0,691
Diarrhea	6,60 ± 1,95	5,24 ± 2,72	0,219
Frequency of defecation	1,00 ± 0,00	1,81 ± 1,12	0,061
Obstipation	1,20 ± 0,45	1,95 ± 2,20	0,616
Floating stool	1,80 ± 0,45	1,76 ± 0,44	0,859
Abdominal cramps	2,60 ± 1,52	3,81 ± 2,50	0,356
Bloating and flatulence	5,00 ± 3,16	4,62 ± 2,94	0,792
Nausea	1,60 ± 0,89	1,81 ± 1,57	0,739
Vomiting	1,00 ± 0,00	1,24 ± 0,89	0,482

Figure 4. Symptoms according to SIBO test.

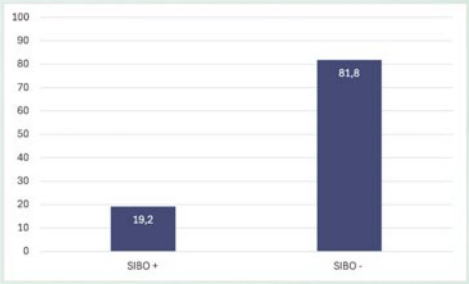

Figure 5. SIBO prevalence after resection due to CD.

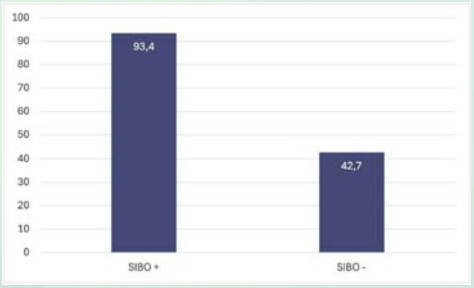

Figure 6. Length of resection according to SIBO +/- test.

Conclusion.
SIBO prevalence post-GI resection for Crohn's disease was **19.2%.** **No symptom** reliably predicted SIBO, likely due to symptom overlap. **Longer resections were significantly associated with higher SIBO incidence**.

Pouchitis assessed by the SES-CD score is more associated with biologic therapy initiation after IPAA than endoscopic element of PDAI

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4. Department of Gastroenterology and Hepatology, University Hospitals Leuven, Leuven, Belgium

Background

- The pouchitis disease activity index (PDAI) is the most used tool to assess the inflammation of the pouch.
- Endoscopic element of PDAI (ePDAI) is often not reliable or responsive .
- The simplified endoscopic score for Crohn's disease (SES-CD) has recently been proposed for this setting.
- We aim to describe the correlation between SES-CD score and several important clinical outcomes.

Methods

- Retrospective cohort study of patients who underwent IPAA surgery.
- Endoscopic and clinical examinations were performed at 1, 3, 6, and 12 months after IPAA for each patient.
- All pouchoscopies (n=497, 86.4% of total) with video- (83.5%) or photo-documentation (16.5 %) were reviewed by the same reviewer (JS) and additionally scored with SES-CD endoscopic score in the pouch body and afferent ileum.
- Kaplan-Meier curves were used to assess the impact of the ePDAI and SES CD scores for initiation of biologics.
- Pouchoscopies were classified as low-grade (ePDAI ≤ 1; SES CD ≤ 3) or high-grade inflammation (ePDAI > 1; SES CD > 3).

Results

- 206 patients (46.1% female), of which 90.3% underwent IPAA surgery due to ulcerative colitis.
- Median follow up after IPAA construction was 25 months.
- 12.6% were receiving biologic therapy at the last follow up.
- Corelation between ePDAI and SES-CD score was linear (rho 0.69, p<0.001).
- At month 3 and 12, only SES-CD was associated with higher need for biologic therapy (month 3: p 0.467 for ePDAI, p 0.042 for SES-CD; month 12: p 0.0571 for ePDAI and p 0.0387 for SES CD) *Fig 1*.

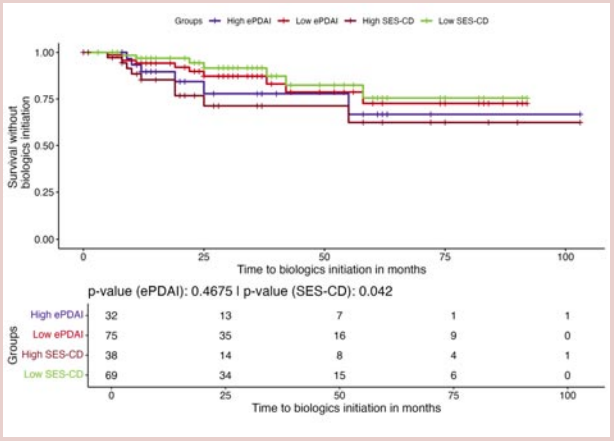

Figure 1
Kaplan-Meier estimation of time to biologics initiation by pouch inflammation at 3 months after IPAA surgery

Conclusion

The SES-CD score may be an alternative to ePDAI for scoring of pouch inflammation. The pouch inflammation described by the SES-CD score is more associated with the need for biologics initiation in patients after IPAA than ePDAI.

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COIs

Prothrombin time, ALT and Protein Concentrations Predict Altered Anticoagulant response in Obese Patients

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Background.
Severe obesity affects **9.2% of adults** and **6.1% of children**, contributing to metabolic dysfunction-associated steatotic liver disease (MASLD) and metabolic syndrome. MBS is an effective treatment; however, impaired hepatic synthetic function—reflected by inadequate anti-Xa response to LMWH—may increase thromboembolic risk in these patients. Anti-Xa activity, alongside other laboratory parameters, serves as a surrogate marker of liver function.

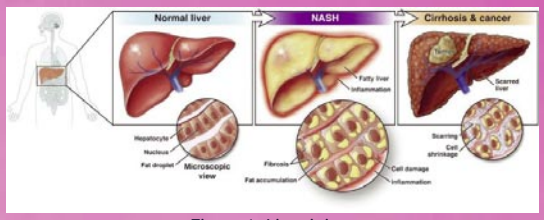

Figure 1. Liver injury.

Objective.
To **assess hepatic synthetic function impairment** after MBS by measuring anti-Xa activity in response to LMWH administration.

Methods.
A prospective study included 77 patients who underwent MBS at UMC Ljubljana over a 3-year period. Anti-Xa activity was measured preoperatively (baseline) and 4 hours after LMWH administration postoperatively. Liver function was assessed using hepatogram, liver enzymes, albumin, total protein, and prothrombin time (PT), and correlated with anti-Xa levels. Histopathological liver changes were evaluated using the Kleiner classification and NAFLD Activity Score (NAS). Predictive Mean Matching and LASSO regression were used to identify key variables in the statistical analysis.

Results.
A significant correlation was observed between anti-Xa levels post-LMWH administration and prothrombin time (PT), alanine transaminase (ALT), and serum protein levels. PT, ALT, and liver proteins emerged as key predictors of hepatic synthetic function. The analysis identified a limited set of predictive markers for assessing liver function impairment. These findings highlight the need for comprehensive testing and more refined modelling to evaluate the degree of hepatic dysfunction.

	1 ($n=6$)	2 ($n=10$)	3 ($n=13$)	p
Anti-Xa BA				0.314
Mean (SD)	0.0133 (0.0103)	0.0250 (0.0237)	0.0108 (0.0144)	
Median (Q1, Q3)	0.0200 (0.0050, 0.0200)	0.0300 (0.0000, 0.0400)	0.0000 (0.0000, 0.0200)	
Min–max	0.0000–0.0200	0.0000–0.0600	0.0000–0.0400	
Missing values	0	0	0	
Anti-Xa SDA				0.344
Mean (SD)	0.2317 (0.0906)	0.1920 (0.0699)	0.1682 (0.0710)	
Median (Q1, Q3)	0.2350 (0.1625, 0.2925)	0.2000 (0.1250, 0.2375)	0.1400 (0.1200, 0.1600)	
Min–max	0.1200–0.3500	0.1000–0.3100	0.1060–0.3200	
Missing values	0	0	0	
DTanti-Xa range				0.344
Mean (SD)	0.2183 (0.0906)	0.2580 (0.0699)	0.2818 (0.0710)	
Median (Q1, Q3)	0.2150 (0.1575, 0.2875)	0.2500 (0.2125, 0.3250)	0.3100 (0.2900, 0.3300)	
Min–max	0.1000–0.3300	0.1400–0.3500	0.1300–0.3440	
Missing values	0	0	0	

BA, before application; *DT*, difference till; *SDA*, after subtherapeutic dose application

Figure 2. Anti-Xa application.

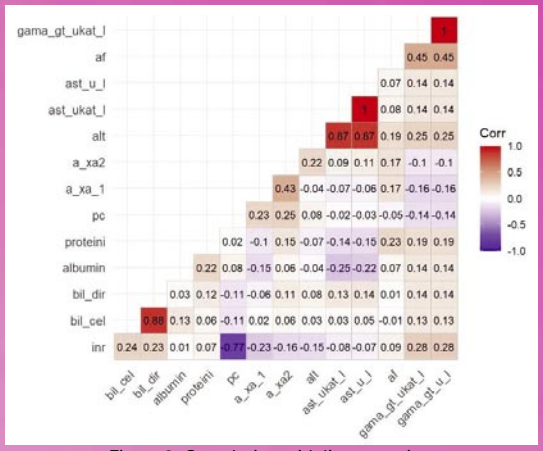

Figure 3. Correlation with liver proteins.

Conclusions.

Hepatic synthetic dysfunction was evident in patients undergoing MBS.
Anti-Xa levels after subtherapeutic LMWH administration showed a significant correlation with prothrombin time, ALT, and protein levels.
Low anti-Xa activity may indicate insufficient anticoagulation, underscoring the need for individualized LMWH dose adjustment to reduce thromboembolic risk.
The limited number of significant predictors highlights the need for more targeted models to assess liver function impairment.

Removal of an ingrown biliary self-expanding metal stent

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Background

Removal of ingrown self-expanding metal stents (SEMS) is difficult. Several possible removal techniques for ingrown SEMS such as »SEMS-in-SEMS« technique, the invagination method, and the use of a mechanical lithotripter have been described (1-5).

A Case Report

67-year-old mail patient, with benign stenosis of distal common bile duct (CBD) due to chronic pancreatitis, was referred 6 months after a PC-SEMS was placed in an attempt to dilate the stenosis. Removal with a snare and »SEMS-in-SEMS« technique failed due to ingrowth of the proximal end of SEMS.

Results

An attempt to remove the SEMS using a mechanical lithotripter and a long guide-wire passed through the mash at the distal end of SEMS in a loop-shaped manner was made (image 1). SEMS was pulled into the lithotripter sheath and peeled of CBD wall (images 2 and 3). There was minimal bleeding and no significant adverse events. Histology of tissue sampled from SEMS showed only chronic inflammation (image 4).

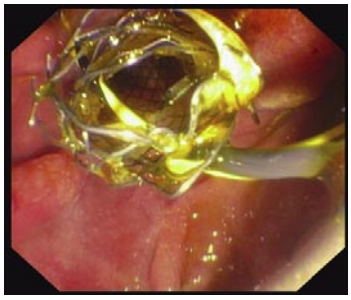
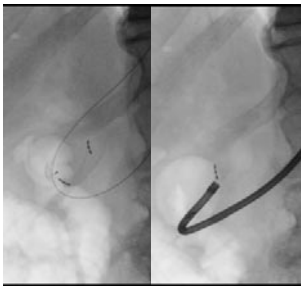


Image 1. Endoscopic view of guide-wire looped through distal end of SEMS.



Images 2 and 3. X-ray of SEMS with looped guide-wire. SEMS pulled into the rescue lithotripter sheath.

Image 4. Removed SEMS with attached tissue.

Conclusion

Removal of an ingrown SEMS can be very painstaking. Using the described technique the procedure can be done using conventional ERCP armamentarium, quickly and safely.

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Safety, efficacy, and pharmacokinetics of idarubicin-loaded drug-eluting microspheres transarterial chemoembolization for intermediate stage hepatocellular carcinoma

Špela Koršič[1,2], Joško Osredkar[3,4], Alojz Šmid[2,5], Klemen Steblovnik[6], Mark Popović[7], Igor Locatelli[4], Jurij Trontelj[4], Peter Popović[1,2]

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Background

Transarterial chemoembolization (TACE) is the treatment of choice for the intermediate stage hepatocellular carcinoma (HCC). While doxorubicin is commonly used, *in vitro* screening suggests that idarubicin may be more cytotoxic against HCC.

Aim

This study investigated the safety, efficacy, and pharmacokinetics of idarubicin-loaded drug-eluting microspheres TACE in intermediate-stage HCC patients.

Materials and methods

Between September 2019 and December 2021, 31 intermediate stage HCC patients were included to this study (table). All patients were treated using 10 mg of idarubicin, loaded to 100 µm LifePearl™ microspheres. Outcomes evaluated included adverse events, objective response rate (ORR), progression-free survival (PFS), time to TACE untreatable progression (TTUP), overall survival (OS), and pharmacokinetics.

Table: Baseline patient's demographic, clinical, laboratory and imaging characteristics (non-alcoholic steatohepatitis – NASH, hepatitis B virus – HBV, hepatitis C virus – HCV, gamma-glutamyl transferase – GGT, aspartate aminotransferase – AST, alanine aminotransferase – ALT, alpha fetoprotein – AFP, left ventricular ejection fraction – LVEF)

Sex, number of patients (%)	
Male/Female	28 (90.3)/3 (9.7)
Age, years	
Mean ± SD	70.6 ± 6.7
Cirrhosis, n. (%)	
Yes/No	30 (96.8)/1 (3.2)
Cirrhosis aetiology, n. (%)	
Ethylic	21 (67.7)
NASH	4 (12.9)
Hemochromatosis	2 (6.5)
HBV	1 (3,2)
HCV	1 (3,2)
Cryptogenic	1 (3,2)
Portal hypertension, n. (%)	
Yes/No	21 (67.7)/10 (32.3)
Ascites, n. (%)	
Yes/No	10 (32.3)/21(67.7)
Laboratory characteristics	
GGT, median (range) [µkat/L]	1.72 (0.24 -14.83)
AST, mean ± SD [µkat/L]	0.80 ± 0.26
ALT, mean ± SD [µkat/L]	0.71 ± 0.39
Total bilirubin, mean ± SD [µmol/L]	25.03 ± 15.9
Albumin, mean ± SD [g/L]	40.90 ± 5.00
AFP, median (range) [kU/L]	5.3 (1 - 4062.5)
Child-Pugh score (n = 30)	
Mean points ± SD	5.8 ± 1.0
Child-Pugh class (n = 30)	
A/B, n (%)	23 (76.7)/7 (23.3)
Imaging characteristics	
Number of lesions, mean ± SD [mm]	3.1 ± 2.1
Diameter of largest lesion, mean ± SD [mm]	44.8 ± 23.0
Cumulative diameter of lesions, mean ± SD [mm]	71.7 ± 39.8
Unilobar disease, n (%)	16 (51.6)
Bilobar disease, n (%)	15 (48.4)
LVEF (%)	
Mean ± SD	64.1 ± 8.7

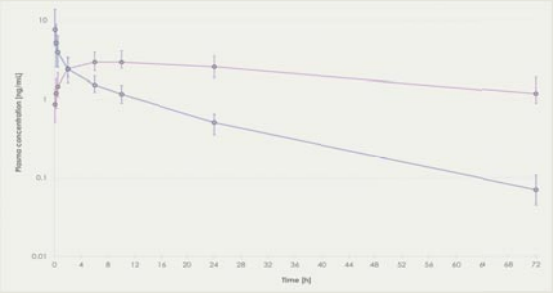

Figure: Geometric mean plasma concentration profiles for idarubicin (blue) and idarubicinol (purple) (n = 31). Error bars indicate first and third quartiles of plasma concentrations.

Results

A total of 68 procedures were performed. Grade ≥ 3 adverse events were noted in 29.4% procedures. The ORR was 83.9%, median PFS and TTUP were 10.5 months (95% CI: 6.8 – 14.3 months) and 24.6 months (95% CI: 11.6 – 37.6 months), respectively. Median OS was 36.0 months (95% CI: 21.1 – 50.9 months). Higher plasma concentrations at 72 hours post-procedure were observed in patients achieving OR (p=0.014 and 0.014, respectively), the cut-off values were identified at 1.2 ng/mL and 1.29 ng/mL for idarubicinol and combined idarubicin-idarubicinol plasma concentration, respectively.

Conclusions

Idarubicin-loaded drug-eluting microspheres transarterial chemoembolization is a safe and effective method of treatment for the intermediate stage hepatocellular carcinoma with low rates of adverse events alongside high tumor response, favourable disease control and overall survival. Idarubicinol and combined idarubicin-idarubicinol plasma concentrations at 72 hours post-procedure may serve as prognostic factors for achieving objective response.

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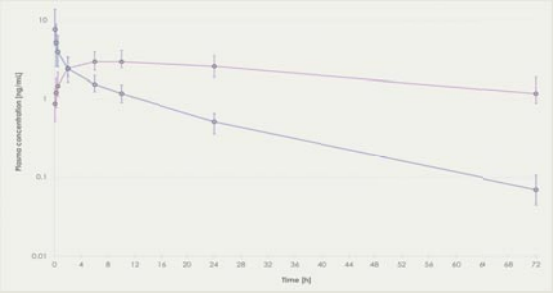

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Idarubicin-loaded drug-eluting microspheres transarterial chemoembolization is a safe and effective method of treatment for the intermediate stage hepatocellular carcinoma with low rates of adverse events alongside high tumor response, favourable disease control and overall survival. Idarubicinol and combined idarubicin-idarubicinol plasma concentrations at 72 hours post-procedure may serve as prognostic factors for achieving objective response.

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SILDENAFIL INDUCED LIVER INJURY – A CASE REPORT

Ana Globočnik, Marko Hojnik, Darinka Purg

Introduction

Drug induced liver injury (DILI) can result from medications, dietary supplements, or various herbal products. When the injury is dose-dependent, it is referred to as intrinsic liver injury. Idiosyncratic liver injury is not dose-dependent and occurs in a small subset of individuals, with a variable latency period (1–2).

Case report

A 59-year-old male with a history of arterial hypertension was admitted to our department due to a two-week history of abdominal pain, jaundice, and elevated liver enzymes.

In the months preceding the onset of symptoms, he had modified his lifestyle by adopting a new diet, increasing physical activity, and initiating the use of a dietary supplement aimed at lowering cholesterol. He reported occasional use of sildenafil. His usual intake of alcohol was at least one unit daily.

Imaging and laboratory diagnostics excluded diseases of the gallbladder and biliary tree, hepatic vascular disorders, infectious causes, inherited metabolic disorders, and immune-mediated liver diseases. Histological examination of the liver biopsy was consistent with DILI, shown in Figure 1a-c.

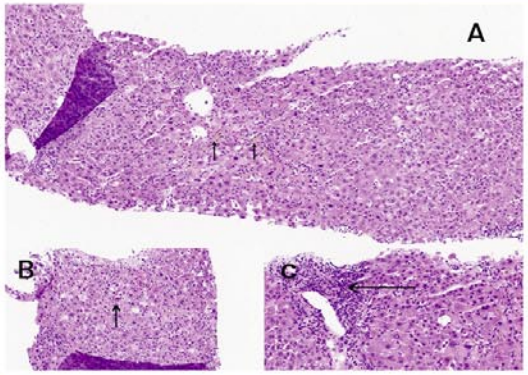

Figure 1a-c: Histological examination of the liver biopsy. The basic architecture of the liver is preserved. Hepatic lobules are predominantly arranged in a dual-row pattern and are radially organized around central veins.

In the area surrounding the central veins, there is focal mild fibrosis and a mild, predominantly chronic inflammatory infiltrate. Hepatocytes near the central veins show swollen, pale cytoplasm containing bile pigment (Figure A: Hepatocytes with intracytoplasmic bile pigment). This pigment is also present in the Hering canals.

Scattered throughout the parenchyma are clusters of mixed-cell inflammatory infiltrates, predominantly mononuclear, associated with areas of lytic necrosis of hepatocytes. Apoptotic hepatocytes are also present in multiple locations (Figure B: Apoptotic hepatocyte). The nuclei of the hepatocytes are focally glycogenated, and the cytoplasm is mostly moderately abundant and eosinophilic.

The portal tracts are of relatively normal size. Focally, there is mild fibrosis with a mild mixed-cell inflammatory infiltrate composed primarily of lymphocytes, with some plasma cells, a few neutrophilic granulocytes, and focally increased eosinophilic granulocytes (Figure C: Inflammatory infiltrate in portal tract). The bile ducts and vasculature in the portal areas show no significant pathological changes.

Special staining for iron (Perls' stain) reveals focal iron deposition in Kupffer cells and mild iron accumulation in the cytoplasm of hepatocytes.

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We confirmed hepatocellular toxic liver injury, most likely due to sildenafil, although a possibility of a combined effect of multiple agents cannot be excluded. At the most recent follow-up, liver enzyme levels had returned to normal. Table 1 and 2 present investigations and their values at the initial and last outpatient assessment.

INVESTIGATION	RESULT	REFERENCE VALUES
Blood count		
Leukocytes (10^9/L)	6.35	4.00 – 10.00
Erythrocytes (10^{12}/L)	5.53	4.50 – 5.50
Haemoglobin (g/L)	162	130 – 170
MCV (fL)	86.1	83.0 – 101.0
Thrombocytes (10^9/L)	279	150 – 410
Biochemical investigations (Blood serum)		
Glucose (mmol/L)	5.7	3.6 – 6.1
Urea (mmol/L)	3.2	2.8 – 7.5
Creatinine (µmol/L)	67	64 – 104
eGF (mL/min/1.73m²)	>90	80 – 120
CRP (mg/L)	4	<5
Total bilirubin (µmol/L)	185	<17
Direct bilirubin (µmol/L)	143	<5
AST (µkat/L)	15.19	<0.58
ALT (µkat/L)	39.63	<0.74
γ-GT (µkat/L)	7.3	<0.92
Alkaline phosphatase (µkat/L)	2.48	0.50 – 2.00
Lipase (µkat/L)	1.55	<1.25
Sodium (mmol/L)	135	135 – 145
Potassium (mmol/L)	3.83	3.5 – 5.3
Chloride (mmol/L)	105	97 – 110
Magnesium (mmol/L)	0.86	0.6 – 1.1
Lactate dehydrogenase (µkat/L)	4.72	<4.13
Albumin (g/L)	36	32 – 55
Ammoniac (µmol/L)	42	<50
Iron (Fe) (µmol/L)	4.19	<4.13
Feritin (µg/L)	3082	30 – 300
Transferrin (g/L)	2.41	2.00 – 3.60
Transferrin saturation (%)	82.1	16 - 45
Ceruloplasmin (g/L)	0.30	0.22 – 0.61
Copper (Cu) (µmol/L)	20.6	11.0 – 22.0
CDT (%)	2.01	1.19 – 2.47
Tumor markers		
Total PSA (µg/L)	0.72	<4
Free PSA (µg/L)	0.258	<0.934
AFP (kU/L)	2.8	<11.1
CEA (µg/L)	<2	<5
CA 19-9 (kU/L)	5	<37
CA 72-4 (kU/L)	2.20	<8.82
β2-microglobuline (mg/L)	2.61	<8.2
Hormones		
B12 (pmol/L)	34	6.1 – 32.6
Folates (nmol/L)	1342	132 – 857
TSH (mU/L)	1.13	0.27 – 4.2
17-beta oestradiol (nmol/L)	0.11	
Progesterone (nmol/L)	<1.6	
Prolactin (µg/L)	5.9	1.6 – 17.7
Testosterone (nmol/L)	35.76	
SHBG (nmol/L)	102.8	13.5 – 71.4
DHEAS (nmol/L)	1.96	
β-HCG (IU/L)	0	<15
FSH (U/L)	5.1	
LH (U/L)	5.0	
Immunology		
ANA, ANCA, ASMA, LKM, liver profile (M2, gp210, sp100, LKM1, LC1, SLA, F-actin)	Negative	
AMA	Suspected	
IgG (g/L)	12.10	7.67 – 15.90
IgA (g/L)	4.09	0.61 – 3.56
IgM (g/L)	0.35	0.37 – 2.86
Toxicology		
Opiates, Amphetamines, Cocaine, Cannabis, Methadone, Benzodiazepines	Negative	
Coagulation profile		
Prothrombin time (PT) (s)	0.82	0.7 – 1.2
INR	1.11	
Thrombin time (TT) (s)	17	15 – 21
Activated Partial Thromboplastin Time (aPTT) (s)	33	26 – 36
Fibrinogen (g/L)	2.58	2.2 – 4.2
Microbiology		
Hepatitis E	Negative	
Hepatitis A	Post-Infectious/Post-Vaccination Status	
Hepatitis B	Non-reactive	
Hepatitis C	Non-reactive	
HIV	Non-reactive	
HSV-1	Negative	
HSV-2	Negative	
CMV	Negative	
EBV	IgG – positive, IgM – negative	
Leptospira	Negative	
Hantavirus	Negative	
Haemocultures	Negative	

Table 1: Investigations and Their Values at the Patient's Initial Assessment in Our Institution

INVESTIGATION	RESULT	REFERENCE VALUES
Blood count		
Leukocytes (10^9/L)	5.08	4.00 – 10.00
Erythrocytes (10^{12}/L)	5.66	4.50 – 5.50
Haemoglobin (g/L)	163	130 – 170
MCV (fL)	84.3	83.0 – 101.0
Thrombocytes (10^9/L)	261	150 – 410
Biochemical investigations (Blood serum)		
Glucose (mmol/L)	6.3	3.6 – 6.1
Urea (mmol/L)	3.9	2.8 – 7.5
Creatinine (µmol/L)	77	64 – 104
eGF (mL/min/1.73m²)	>90	80 – 120
CRP (mg/L)	<3	<5
Total bilirubin (µmol/L)	11	<17
Direct bilirubin (µmol/L)	3	<5
AST (µkat/L)	0.79	<0.58
ALT (µkat/L)	1.21	<0.74
γ-GT (µkat/L)	0.95	<0.92
Alkaline phosphatase (µkat/L)	1.09	0.50 – 2.00
Sodium (mmol/L)	136	135 – 145
Potassium (mmol/L)	4.51	3.5 – 5.3
Chloride (mmol/L)	104	97 – 110
CHE (µkat/L)	193	117 – 317
Cholesterol (mmol/L)	5.23	4.0 – 5.7
Triglycerides (mmol/L)	0.96	0.6 – 1.7
Albumin (g/L)	38	32 – 55
Iron (Fe) (µmol/L)	14	<4.13
Feritin (µg/L)	151	30 – 300
AFP (kU/L)	2.4	< 11.1
Coagulation profile		
Prothrombin time (PT) (K)	0.86	0.7 – 1.2
INR	1.09	

Table 2: Investigations and Their Values at the Patient's Last Outpatient Assessment in Our Institution

Conclusion

A broad spectrum of substances has the potential to cause liver injury. Obtaining a comprehensive medical history and excluding alternative etiologies are essential steps in establishing an accurate diagnosis. The primary therapeutic interventions include discontinuation of the suspected agent and close patient monitoring. Despite an extensive diagnostic work-up, the precise etiology of liver injury may remain unclear (1–3).

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Surgical repair of bile duct injuries due to cholecystectomy

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Background

Bile duct injury during (laparoscopic) cholecystectomy has an incidence of up to 1.5%.

Aim

This retrospective study aims to report the outcomes of surgical repair of bile duct injuries due to cholecystectomy at a tertiary referral center.

Materials and Methods

A retrospective review of patients' records was conducted. The clinical presentations of bile duct injuries, Strasberg classification, surgical repairs, and outcomes were reported.

Results

From 2003 to 2024, 47 bile duct injuries were identified (Figure 1).

In total, 34.0% were recognized intraoperatively.

The bile duct injuries types included Strasberg types B (2, 4.3%), C (5, 10.6%), D (11, 23.4%), E1 (4, 8.5%), E2 (12, 25.5%), E3 (5, 10.6%), E4 (3, 6.4%), and E5 (5, 10.6%).

The T-tube group included 6 (12.8%) patients, the primary repair and T-tube group included 10 (21.3%) patients, and the Biliodigestive anastomosis group included 31 (65.9%) patients.

The overall morbidity rate was 40.4%, the major morbidity rate was 21.3%, and the mortality rate was 4.3% (Figure 2, Table 1).

Grade A patency was achieved in 95.6% of patients (Figure 3). In the Biliodigestive anastomosis group, the actuarial 1-, 5- and 10-year grade A patency rates were 77.0%, 70.0% and 70.0%, respectively (Figure 4).

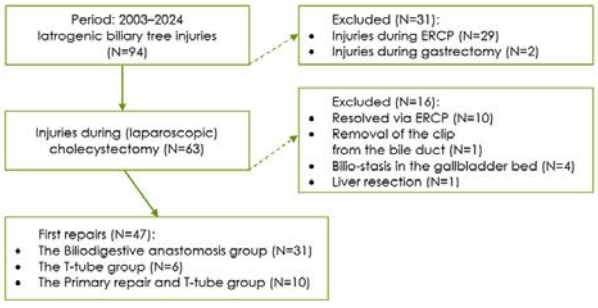

Figure 1. A study flow chart.
ERCP: Endoscopic retrograde cholangiopancreatography.

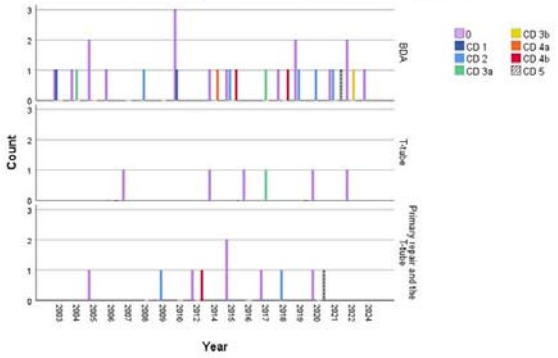

Figure 2: The short-term outcomes of repair of bile duct injuries according to the Clavien–Dindo (CD) classification. BDA: biliodigestive anastomosis.

Table 1: The rates and grading of severe morbidity (Clavien–Dindo ≥ 3a) according to the time frame of the repair. BDA: Biliodigestive anastomosis.

Time frame	Total (N=47)	BDA group (N=31)	T-tube group (N=6)	Primary repair and T-tube group (N=10)
During index surgery	1 (6.25%)	11.1% 3b		
Early (day 1–7)	5 (33.3%)	30.0% 3b, 2 pts 4b	25.0% 3a	20.0% 5
Intermediate (1–6 weeks)	3 (30.0%)	50.0% 3a, 4a, 5		25.0% 4b
Late (> 6 weeks)				

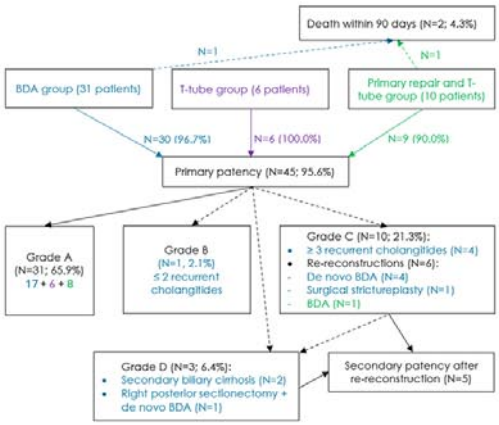

Figure 3: Patency of repairs of bile duct injuries. BDA: Biliodigestive anastomosis.

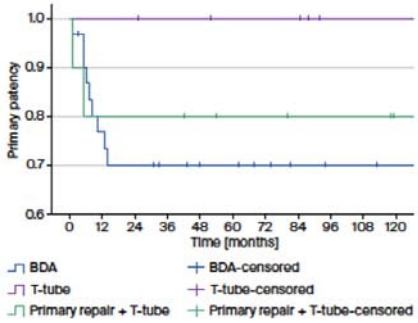

Figure 4: Kaplan–Meier curves of actuarial primary patency dependent on time. BDA: biliodigestive anastomosis.

Conclusions

The rate of BDI remains stable. The outcomes of repairs in terms of complications and patency rates are comparable to those in other reports.

Original publication

Plahuta I, Turk Š, Lovrenčič Petreski B, Magdalenić T, Potrč S, Ivanecz A. *Surgical repair of bile duct injuries due to cholecystectomy—an experience from a referral center in Slovenia.* Life (Basel). 2025 May 15;15(5). [Ahead of print].

The impact of *Helicobacter pylori* eradication on long-term ghrelin levels and body weight

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The clinical trial registration number is EUDRA CT 2020-003399-42.

Introduction: The association between chronic *Helicobacter pylori* infection and hormone levels affecting food intake and obesity remains controversial. Thus, our aim was to investigate the long-term effect of *H. pylori* eradication on changes in ghrelin and leptin levels.

Methods: A total of 72 patients meeting the inclusion and exclusion criteria were enrolled (July 2020 to November 2022). Participants were randomly assigned to two treatment groups (group 1: 14-day regimen with esomeprazole, amoxicillin, and clarithromycin; group 2: 14-day regimen with esomeprazole, amoxicillin, metronidazole and colloidal bismuth subcitrate). We evaluated changes in insulin resistance (HOMA-IR score), body mass index (BMI) and serum levels of ghrelin and leptin (ELISA test) at baseline, two months, and one year following successful *H. pylori* eradication.

Results: Of the 72 patients included, 13.9% (10/72) did not complete the study protocol. Both treatment groups were similar at enrollment and showed no statistically significant differences (p = 0.332 for OLGIM stages; p = 0.583 and p= 0.696 for antrum and corpus atrophy respectively, p = 0.177 and p = 0.296 for antrum and corpus intestinal metaplasia respectively). No statistically significant changes were present in BMI (p = 0.910) and insulin resistance (p = 0.342) after *H. pylori* eradication. A statistically significant decrease in ghrelin serum levels was observed in both treatment groups (p < 0.001, Figure 1), but not in leptin serum levels (p = 0.309) as seen in Table 1.

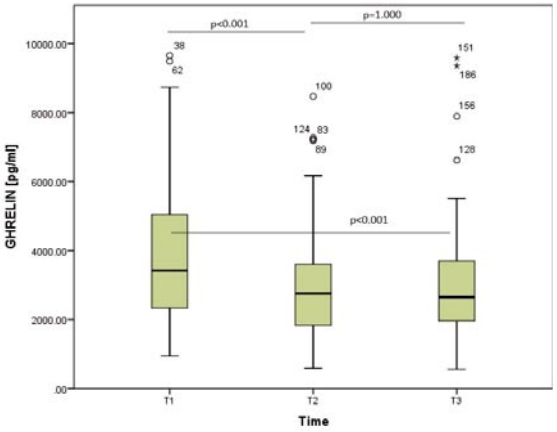

Figure 1. Serum ghrelin levels at baseline, two months after eradication therapy and one year after successful eradication of *Helicobacter pylori*.

T1 – at baseline, T2 – 2 months post-eradication, T3 – 1-year post-eradication

Conclusions: Successful eradication of chronic *H. pylori* gastritis decreased serum ghrelin levels regardless of the presence of gastric mucosal atrophy. Furthermore, no changes in BMI or waist circumference were detected after one year of follow-up, proving that *H. pylori* eradication is not related to weight gain through hormonal changes as previously hypothesized. These results reduce the fear that massive *H. pylori* eradication from the population could be associated with obesity.

Table 1. Propensity score matching for serum ghrelin and leptin levels with exclusion of cofounding factors.

	T1	T2	T3	p-value
Leptin (pg/ml)	7922.3 ± 8295.3	9022.1 ± 8335.0	9050.4 ± 7423.4	0.309
Ghrelin (pg/ml)	3531.2 ± 1638.6	2882.4 ± 1353.5	3014.6 ± 1599.7	**< 0.001**

T1 – at baseline, T2 – 2 months post-eradication, T3 – 1-year post-eradication

Literature:

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Clinical case: Unexpected Discovery of Anal Canal Apocrine Hidrocystoma Mimicking Neuroendocrine Neoplasia

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DIAGNOSTIČNI CENTER BLED

We describe a rare benign tumor located in the anal canal called apocrine hidrocystoma.
Usually this lesion presents as an asymptomatic nodule on the head and neck [1]. As far as the authors know, no such lesion has been described in the gastrointestinal tract.

The presented patient is a 55-year-old female who was referred for colonoscopy following a positive FIT test in the national colorectal cancer screening program.

Colonoscopy identified 4x4 mm submucosal lesion in the anal canal (Figure 1, 2) that exhibited characteristics of neuroendocrine neoplasia [2], so we opted for endoscopic submucosal dissection (Figure 3).

Subsequent histopathological analysis revealed a cystic lesion lined by a double-layered epithelium – findings consistent with apocrine hidrocystoma (Figure 4).

Endoscopic diagnosis was challenging beacuse the lesion mimicked neuroendocrine neoplasia, yet a definitive diagnosis was changed by pathohistological examination. This underscores the importance of endoscopic evaluation and histopathological analysis in accurately diagnosing such rare conditions.

As shown in our case, there is a possibility of non-neuroendocrine neoplasias in the rectum. The differential diagnosis includes leiomyoma, gastrointestinal stromal tumor, lipoma, lymphangioma (3).

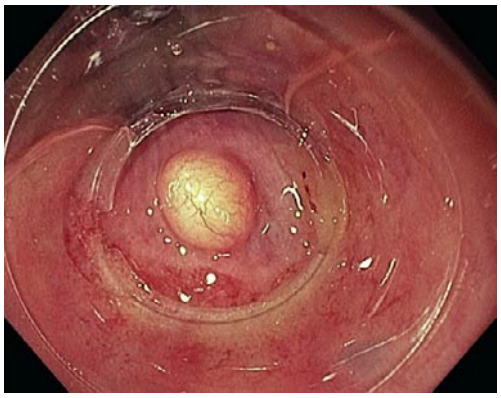

Figure 1: White Light Image of the Lesion

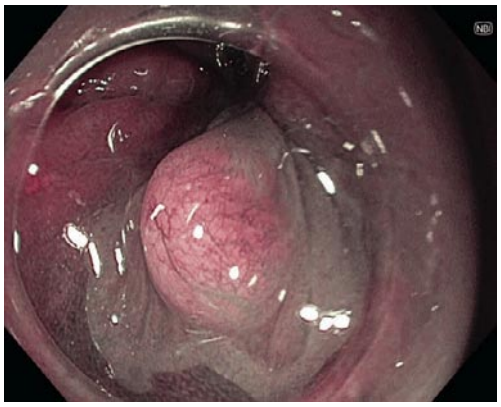

Figure 2: Narrow Band Image of the Lesion

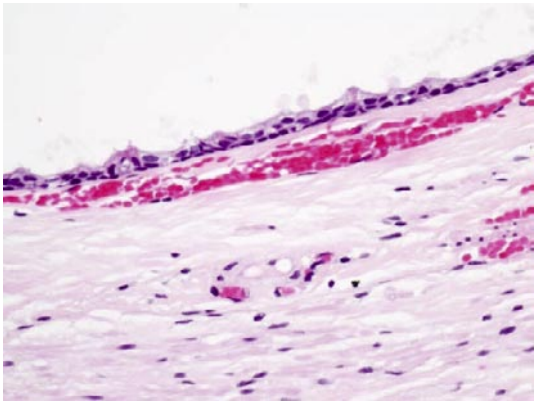

Figure 4: Cyst lined by a double-layered epithelium, an outer layer of flattened cells and inner layer of taller, cuboid cells, H&E. 400 × magnification

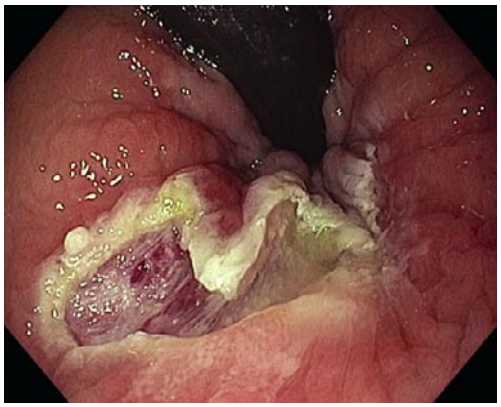

Figure 3: Post-ESD defect

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WEEK 4 USTEKINUMAB SERUM CONCENTRATION IS ASSOCIATED WITH EARLY AND LATE ENDOSCOPIC IMPROVEMENT IN PATIENTS WITH ULCERATIVE COLITIS – RESULTS FROM A PROSPECTIVE OBSERVATIONAL STUDY

Tara Velepec[1], Nuša Šimnovec[1], Saša Golob2, Gregor Novak[1,2], Jurij Hanžel1,2, Nataša Smrekar[2], Borut Štabuc[1,2], Živa Pipan Tkalec[3], Nina Hauptman[3], Nina Zidar[3], Iztok Grabnar[4], Tomaž Vovk[4] and David Drobne[1,2]

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BACKGROUND:

Healing of colonic mucosa is an important goal of ulcerative colitis (UC) treatment. Ustekinumab, an interleukin (IL)-12/23 inhibitor, is one of the therapeutic options for patients with moderate to severe UC. The exposure–response relationship between ustekinumab and endoscopic improvement is not well studied in real-life settings.

AIM:

AIMWe studied the correlation between early ustekinumab serum concentrations and endoscopic improvement in UC.

MATERIAL AND METHODS:

This was a prospective, observational, single-center study at the Department of Gastroenterology, UMC Ljubljana. UC patients initiating ustekinumab therapy had their serum ustekinumab concentrations measured at baseline (peak level after infusion), and then at weeks 2 and 4. Endoscopic activity was assessed at weeks 8 and 24 using the Mayo endoscopic subscore, with improvement defined as a score of ≤1. Patients who prematurely discontinued treatment due to loss of response before endoscopic assessment were classified as non-responders. Statistical analysis included the Mann–Whitney U test, Chi-square test, Fisher's exact test, and ROC curve analysis, as appropriate.

RESULTS:

Table 1: *Patient Demographics, Serum Ustekinumab Concentrations Over Time, and Endoscopic Outcomes*

Number of patients	35 (19 males, 16 females)
Mean age (years ± SD)	42.03 ± 14.46
Serum ustekinumab concentrations (µg/mL)	
Week 0 (34 patients)	153.94 (IQR: 132.13–175.51)
Week 2 (30 patients)	41.66 (IQR: 33.52–46.40)
Week 4 (27 patients)	19.91 (IQR: 14.49–23.18)
Endoscopic improvement (n (%))	
Week 8	11/35 (31.43%)
Week 24	19/35 (54.29%)

Patients with endoscopic improvement at week 8 and 24 had higher serum concentrations than those without improvement (Figure 1 and 2).

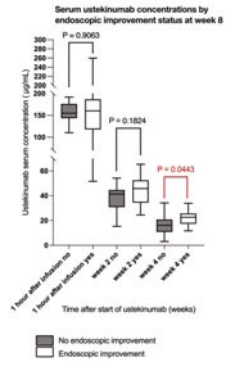

Figure 1. *Serum ustekinumab concentrations at baseline (peak concentration), week 2, and week 4 in patients with and without endoscopic improvement at week 8.*

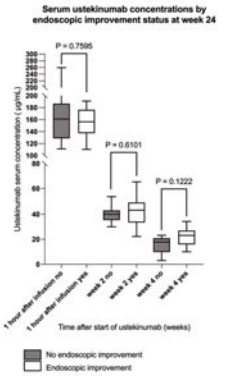

Figure 2. *Serum ustekinumab concentrations at baseline (peak concentration), week 2, and week 4 in patients with and without endoscopic improvement at week 24.*

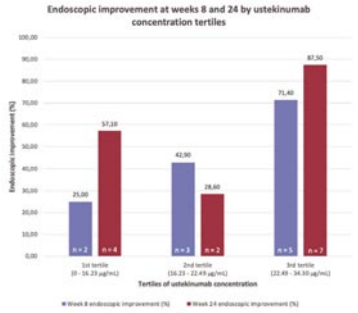

Figure 3. *Proportion of patients with endoscopic improvement at weeks 8 and 24 across tertiles of week 4 ustekinumab serum concentrations.*

Table 2: *Predictive Value of Week 4 Ustekinumab Levels for Endoscopic Improvement at Weeks 8 and 24*

Timepoint	AUC (95% CI)	p-value	Cut-off (µg/mL)	Sensitivity	Specificity	Improvement ≥ Cut-off	Odds Ratio (95% CI)
Week 8	0.754 (0.541–0.967)	0.019	20.9	70.0%	83.3%	7/9 (77.78%)	3.462 (0.984–12.179)
Week 24	0.701 (0.481–0.921)	0.073	22.0	53.8%	88.9%	7/8 (87.50%)	4.571 (0.692–30.220)

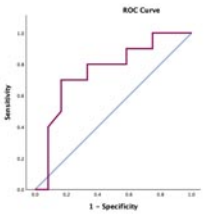

Figure 4. *ROC curve of ustekinumab serum concentration at week 4 as a predictor of endoscopic improvement at week 8.*

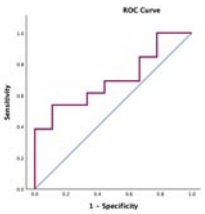

Figure 5. *ROC curve of ustekinumab serum concentration at week 4 as a predictor of endoscopic improvement at week 24.*

CONCLUSIONS:

We confirmed the exposure–response relationship between ustekinumab concentrations at week 4 and endoscopic improvement in UC. A week 4 concentration above 20.900 µg/mL was associated with a high probability of endoscopic improvement. These results suggest that measuring week 4 ustekinumab concentrations could be clinically relevant for predicting endoscopic response.

LITERATURE:

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3. Alsoud D, De Hertogh G, Compernolle G, Tops S, Sabino J, Ferrante M, et al. Real-world Endoscopic and Histological Outcomes Are Correlated with Ustekinumab Exposure in Patients with Ulcerative Colitis. J Crohns Colitis. 2022 Nov 1;16(10):1562–70.