Abstrakts

ÖREBRO 10-12 MAJ 2023

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- **TIDIG EFFEKT**[**1,2]**
- **SLEMHINNELÄKNING**[†1,2]
- **BIBEHÅLLEN REMISSION**[‡1,2]

Med 1 tablett om dagen och en välstuderad säkerhetsprofil inom 6 godkända indikationer[§1]

Primärt effektmått var klinisk remission per anpassad Mayo-score i vecka 8 (UC-1 & UC-2) och vecka 52 (UC-3): (UC-1: RINVOQ 45 mg 26,1% vs placebo 4,8% och UC-2: RINVOQ 45 mg 33,5% vs 4,1% och UC-3: RINVOQ 15 mg 42,3% och RINVOQ 30 mg 51,7% vs placebo 12,1%; p<0,001.[1]

*RINVOQ subventioneras när behandling med TNF-hämmare gett otillräcklig effekt eller inte är lämplig.
**Per partiell Mayo-score (avseende minskning av rektal blödning och avföringsfrekvens) i vecka 2 (UC-1: RINVOQ 45 mg 60,1% vs placebo 27,3% och UC-2: RINVOQ 45 mg 63,3% vs placebo 25,9%, p<0,001).
†Slemhinneläkning per endoskopisk subscore ≤1 utan skörhet (vecka 8: UC-1: RINVOQ 45 mg 36,3% vs placebo 7,4% och UC-2: RINVOQ 45 mg 44,0% vs placebo 8,3%, p<0,001. Vecka 52: UC-3: RINVOQ 15 mg 48,7% och RINVOQ 30 mg 61,6% vs placebo 14,5%, p<0,001).
‡Bibehållen klinisk remission per anpasad Mayo-score i vecka 52 (UC-3: RINVOQ 15 mg 59,2%, RINVOQ 30 mg 69,7% vs placebo 22,2%, p<0,001).
§RINVOQ´s säkerhetsprofil har studerats i 15 registreringsgrundande fas III-studier inom indikationerna: UC, RA, AS, nr-axSpA, PsA och AD.

Referens: 1. RINVOQ Produktresumé, www.fass.se. 2. Danese S *et al.* Lancet 2022. Jun 4;399(10341):2113-28.

RINVOQ® (upadacitinib), depottablett 15 mg, 30 mg, 45 mg (F), Rx, ATC-kod L04AA44 selektivt immunsuppressivt medel, JAK-hämmare. **Indikationer:** måttlig till svår aktiv **reumatoid artrit** hos vuxna med otillräckligt behandlingssvar på eller intolerans mot ett eller flera DMARDs i monoterapi eller i kombination med metotrexat. Aktiv **psoriasisartrit** hos vuxna med otillräckligt behandlingssvar på eller intolerans mot ett eller flera DMARDs, i monoterapi eller i kombination med metotrexat. **Axial spondylartrit:** – Aktiv **icke-radiografisk axial spondylartrit** hos vuxna med objektiva tecken på inflammation som anges av förhöjda nivåer av CRP och/eller MRI, som har otillräckligt behandlingssvar på NSAID. – Aktiv **ankyloserande spondylit** *(radiografisk axial spondylartrit)* hos vuxna med otillräckligt behandlingssvar på konventionell behandling. Måttlig till svår **atopisk dermatit** hos vuxna och ungdomar 12 år och äldre vilka är aktuella för systemisk behandling. Måttlig till svår aktiv **ulcerös kolit** hos vuxna med otillräckligt behandlingssvar, förlorat behandlingssvar eller som varit intoleranta mot konventionell behandling eller biologiska läkemedel. **Kontraindikationer:** Överkänslighet mot den aktiva substansen eller mot något hjälpämne. Aktiv tuberkulos (TB) eller aktiv allvarlig infektion. Gravt nedsatt leverfunktion. Graviditet. **Varningar och försiktighet:** RINVOQ ska endast användas om inga lämpliga behandlingsalternativ är tillgängliga för patienter: som är 65 år eller äldre; med en anamnes på aterosklerotisk hjärt-kärlsjukdom eller andra kardiovaskulära riskfaktorer (t.ex. nuvarande eller tidigare långtidsrökare); med riskfaktorer för malignitet (t.ex. nuvarande eller tidigare malignitet). RINVOQ ska inte påbörjas hos patienter med aktiva, allvarliga infektioner, inkl. lokala infektioner och TB. Virusreaktivering, inkl. fall av reaktivering av herpesvirus (t.ex. herpes zoster), har rapporterats i kliniska studier. Påbörja inte eller avbryt tillfälligt behandling om onormala lab-värden som anemi, neutropeni, lymfopeni och levertransaminaser påträffas. RINVOQ associerades med ökade lipidparametrar i kliniska studier. RINVOQ ska användas med försiktighet till patienter med divertikelsjukdom och särskilt till patienter som samtidigt långtidsbehandlas med läkemedel som medför ökad risk för divertikulit såsom NSAID, kortikosteroider och opioider. VTE har rapporterats hos patienter på RINVOQ. Hos patienter med kända VTE-riskfaktorer ska RINVOQ användas med försiktighet. Allvarliga överkänslighetsreaktioner har rapporterats med RINVOQ. **Fertilitet, graviditet och amning:** Fertila kvinnor ska rådas använda effektiv preventivmetod under behandling och i minst 4 veckor efter avslutad behandling. RINVOQ är kontraindicerat under graviditet och ska inte användas under amning. För fullständig information om indikation, kontraindikationer, varningar och försiktighet, biverkningar, pris och dosering, se Fass.se. **För information:** kontakta AbbVie AB, 08 684 44 600. **Datum för översyn av produktresumén:** 10 mars 2023. **Begränsning av läkemedelsförmån:** RINVOQ subventioneras 1) när behandling med TNF-hämmare gett otillräcklig effekt eller inte är lämplig 2) för patienter med atopisk dermatit när konventionell topikal eller systemisk behandling gett otillräcklig effekt eller inte är lämplig.

▽ Detta läkemedel är föremål för utökad övervakning.

abbvie

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SE-RNQG-220010 v3.0 mars 2023

INNEHÅLL

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TRYCK:
Carlshamns Tryck & Media AB
Karlshamn - Växjö - Emmaboda

VÄLKOMMEN TILL SVENSKA GASTRODAGARNA 2023 I ÖREBRO

Kära gastrovänner,

Varmt välkomna till Svenska Gastrodagarna 2023!

Årets upplaga går av stapeln 10–12 maj på Conventum i Örebro där vi ser fram emot att välkomna närmare 800 deltagare, tre internationella hedersföreläsare och ett stort antal experter som delar med sig av sin kunskap. Vi har därutöver slagit rekord i antalet inskickade abstrakts och det blir totalt 90 abstraktpresentationer. Lägg där till en stor utställning fylld av företag som visar de senaste läkemedlen och produkterna.
I vanlig ordning så är det även laddat för fest på torsdagskvällen med Gastromiddagen!

I denna bilaga kan du ta del av alla de abstrakts som har accepteras till mötet.

Vi ser fram emot att ses i Örebro!

Hannes Hagström, vetenskaplig sekreterare SGF,
tillsammans med lokala kommittén och SGF:s styrelse

mediahuset

Möten & Event

För allt ifrån det lilla mötet till den stora kongressen finns vi där för dig.

Oavsett om det gäller fysiska möten, digitala webbinarium eller hybridmöten så tar vi hand om allt det praktiska, så att du kan fokusera på innehållet!

Om du letar efter ett specifikt event som vi anordnar så finns vår event-kalender här: ***https://medevents.se/***

Abstrakts Gastrodagarna

Muntliga presentationer

GENERAL SESSION 1. Fria föredrag

10 maj 13:30-14:30

O.01

A novel serum protein signature for IBD in adults: Diagnostic and prediction modelling using two independent inception cohorts.

Inflammatoriska tarmsjukdomar

D. Bergemalm[1], I. Bazov[2], R. Kruse[3], C. Eriksson[1], C.R. Hedin[4, 5], M. Carlson[6], M.v. Nieuwenhoven[1], Å.V. Keita[7], M.K. Magnusson[8], S. Almer[4, 5], H. Strid[9], C. Bache-Wiig Mathisen[10, 11], M.B. Bengtsson[12], T. Bergene Aabrekk[12, 13], A.W. Medhus[10, 11], T.E. Detlie[13, 14], S.O. Frigstad[15], G. Huppertz-Hauss[16], R. Opheim[10, 17], P. Ricanek[14, 18], V.A. Kristensen[10, 19], S. Salihovic[20], M. D'Amato[21, 22], L. Öhman[8], J.D. Söderholm[7], C.M. Lindqvist[23], D. Repsilber[2], M.L. Høivik[10, 11], J. Halfvarson[1].

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Bakgrund: Existing blood-based diagnostic biomarkers for inflammatory bowel disease (IBD) are imprecise and faecal tests are poorly accepted. Therefore, we aimed to identify a novel diagnostic serum protein signature.

Metod: Proximity extension immunoassay methodology (Olink Proteomics, Uppsala, Sweden) was used to measure 184 proteins in serum samples from adult patients with suspected IBD in the Swedish inception cohort SIC IBD (discovery cohort, n=451) and Norwegian population-based inception cohort IBSEN III (validation cohort, n=554). Samples were obtained at presentation, i.e., almost all patients were treatment naïve. Supervised machine learning with smoothly clipped absolute deviation regularised logistic regression and random forest (RF) models were employed in nested cross-validation to identify a diagnostic signature of IBD.

Resultat: The discovery cohort included 310 IBD patients and 141 symptomatic controls without any discernible evidence of IBD, whereas the validation cohort included 354 IBD patients and 200 symptomatic controls. In the discovery cohort, the regularised regression identified a signature of 26 proteins distinguishing IBD from symptomatic controls (**Figure 1**), area under the curve (AUC)=0.78. When applied to the validation cohort, the diagnostic capacity of the signature (AUC=0.82) outperformed high-sensitivity C-reactive protein (hsCRP) (AUC=0.69, $p=1.1\times10^{-7}$). The RF model yielded similar results. Among patients in the validation cohort providing a stool sample (422/554), the diagnostic accuracy of the protein signature (AUC=0.82) and faecal Calprotectin (AUC=0.86) did not differ (p=0.07). To identify a simplified model for clinical use, we used discovery cohort data and stepwise forward logistic regression with hsCRP as the null model. When applied to the validation cohort, the diagnostic accuracy of the shortest signature, comprising hsCRP and interleukin (IL)-17A (AUC=0.80), was superior to hsCRP (AUC=0.69, $p=1.7\times10^{-8}$).

Slutsats: A diagnostic serum protein signature of hsCRP and IL-17A differentiates IBD from symptomatic controls and could be used as a simple and scalable test for shortening the diagnostic delay.

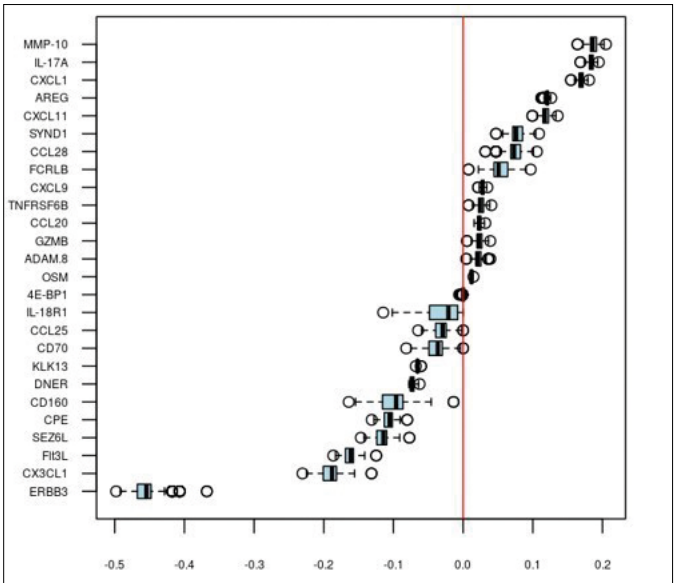


Figure 1. Protein signature discriminating inflammatory bowel disease versus symptomatic controls found using regularized regression in the discovery cohort. *X-axis*: box plots of regression coefficients. *Y-axis:* proteins selected for the biomarker signature. The box plot presents a median (middle line), interquartile range (IQR, box), and upper and lower adjacent values (whiskers, IQR × 1.5). Outliers are shown as empty circles.

O.02

Adherence, self-care and illness perception in patients with inflammatory bowel disease – a qualitative study.

Omvårdnadsforskning

E. Ljungström[1,2], M. Eberhardson[1,2], H. Hjortswang[1], K. Pihl Lesnovska[1,2]
[1]*Mag-tarmmedicinska kliniken, Universitetssjukhuset Linköping, Sverige*
[2]*Linköpings universitet, Intuitionen för Hälsa Medicin och Vård*

Bakgrund: Läkemedel är centralt i behandlingen av Inflammatorisk tarmsjukdom (IBD). Icke-följsamhet till läkemedel minskar behandlingens effekt, vilket ökar risken för skov och komplikationer. Ungefär 30 % av patienterna med IBD är inte följsamma till läkemedelsbehandlingen. Egenvård innebär att genom hälsobringande och sjukdomsspecifika aktiviteter bibehålla hälsa. Sjukdomsuppfattning handlar om förståelse för sjukdomen och dess konsekvenser.
Syftet med studien är att fördjupa förståelsen för följsamhet och icke-följsamhet som en del av egenvård, och utforska kopplingarna till sjukdomsuppfattning och self-efficacy hos patienter med IBD.

Metod: Semi-strukturerade intervjuer genomfördes med 15 patienter vid en IBD-klinik på ett universitetssjukhus i Sverige. Patienter inkluderades medvetet för att ge maximal variation av sjukdomsduration, ålder och kön. Intervjuerna ljudinspelades, transkriberades ordagrant och analyserades med induktiv innehållsanalys.

Resultat: Analysen gav tre huvudkategorier och tio underkategorier. Kategori 1) Sjukdomsuppfattning; deltagarna övervakar sin IBD genom tarmsymtom, men uppfattningen om symtombörda är snarare relaterad till graden av daglig funktion. Stressreducering och kost används som symtomreglering och minimering av skovförekomst. Somliga kämpar med acceptans, andra har accepterat och anpassat sig. Rädsla uttrycktes inför koloskopi, cancer och sjukdomsprogress. Kategori 2) Uppfattning av Sjukvård; många önskas en personlig kontakt och dialog med läkaren. Tillitsproblem uppstod till följd av försenad diagnos, närståendes ohälsa eller negativa erfarenheter av sjukvård, samt när insjuknandet upplevdes känslomässigt traumatiskt. Information behövs om sjukvårdssystemet, diagnosen och läkemedelsbehandlingen. Kategori 3) Uppfattning om läkemedel; ambivalens gentemot läkemedel och oro för potentiellt läkemedelsorsakad skada var tydlig. Administreringsformen kan påverka följsamheten. Många upplever att icke-medicinska strategier har större, eller lika stor betydelse för IBD som läkemedelsbehandlingen.

Slutsats: Fynden ökar förståelsen kring orsakerna till följsamhet/icke-följsamhet, och demonstrerar bakomliggande komplexa mekanismer. Deltagarnas avvägning av risk mot nytta med läkemedel består av farhågor som delvis saknar vetenskaplig grund. Detta understryker vikten av tillitsfull dialog och delat beslutsfattande mellan patient och vårdgivare, med målet att öka följsamheten till läkemedelsbehandlingen och en mer välkontrollerad sjukdom.

Variable	N=15
Age range (M)	21-78 (42)
Gender	
Male	7
Female	8
Type of IBD	
Crohns disease	5
Ulcerative colitis	9
IBD UNS	1
Disease duration range (M)	2-26 (8)

Tabell Demografi

O.03

Effect of serotonergic stimulation on the gut-brain axis in irritable bowel syndrome patients compared with healthy subjects applying brain imaging.

Funktionella mag-tarmsjukdomar och nutrition

J. Rode[1], R. Wall[1], J. König[1], A.N. Hutchinson[1], P. Thunberg[2], D. Repsilber[1], I. Rangel[1], M.F. Roca Rubio[1], H.M.T. Edebol Carlman[1], R.J. Brummer[1]
[1]*Nutrition-Gut-Brain Interactions Research Centre, Faculty of Medicine and Health, School of Medical Sciences, Örebro University, Örebro, Sweden*
[2]*Department of Radiology and Medical Physics, Faculty of Medicine and Health, Örebro University, Örebro, Sweden*

Bakgrund: Serotonin is one of the key neurotransmitters in the enteric and central nervous system. Manipulations of the serotonergic system, by acute or chronic decrease or increase of serotonin, have been shown to affect gastrointestinal and psychological symptoms of irritable bowel syndrome (IBS) patients. Yet, little is known about how these findings relate to brain function.

Metod: This mode-of-action study examined how subjects with, and without, IBS respond to serotonergic stimulation (after oral administration of 10 mg of the Selective Serotonin Reuptake Inhibitor (SSRI) Escitalopram), versus ii) unstimulated serotonergic activity (placebo) in a double-blinded randomised crossover fashion.

Resultat: 9m/11f healthy subjects aged 29 (21-61) years and 11m/23f IBS patients (Rome IV) aged 31.5 (19-54) years completed the study. Median duration of IBS symptoms was 10 (2-35) years and clinical subtypes were 11 IBS-C, 18 IBS-D, 2 IBS-M, 2 IBS-U. At baseline, as expected, IBS patients reported significantly ($p<0.01$) more gastrointestinal symptoms (GSRS-IBS, IBS-SSS, IBS-QoL), reduced quality of life and worse mental health in terms of depression, anxiety and stress perception, compared to healthy subjects. No differences in cortisol awakening response, subtle differences in reaction towards a CO2 inhalation challenge and intestinal permeability markers were observed between the groups.
Upon single-dose SSRI intake, IBS patients – but not healthy controls – reported significantly altered perception of rectal barostat: urge ($p=0.04$), pain ($p=0.01$), discomfort ($p>0.05$). Brain functional connectivity of the Default Mode Network (=predominant resting state network), with anterior cingulate and paracingulate gyrus, amongst others, and within the sensorimotor network, especially involving post- and precentral gyrus, was altered differently in IBS than healthy controls (p-FDR<0.05).

Slutsats: Acute serotonergic modulation, by single-dose SSRI, affected brain functional connectivity related to visceral sensitivity in IBS patients. Continued investigation of this serotonergic stimulation study aims to reveal biosignatures allowing detailed diagnosis and treatment prediction, leading to personalised medicine.

O.04

Increased survival in at-risk patients receiving surveillance for hepatocellular carcinoma – A nationwide Swedish registry study.

Leversjukdomar

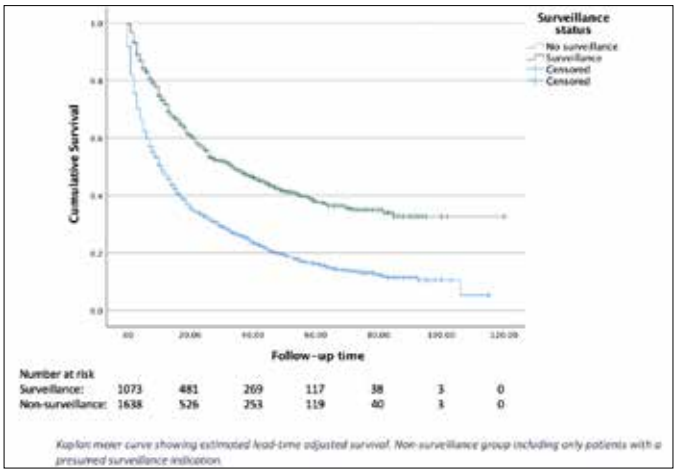
R. Thörn[1], O. Hemmingsson[2], Å. Danielsson Borssén[1], P. Karling[1], M. Werner[1], J. Wixner[1]
[1]*Medicincentrum Norrlands Universitetssjukhus, Umeå, Sverige.*
[2]*Kirurgkliniken Norrlands Universitetssjukhus, Umeå, Sverige.*

Bakgrund: Surveillance for hepatocellular carcinoma (HCC) is recommended in at-risk patients, but its effectiveness and the robustness of current evidence has been questioned. We aimed to evaluate the effect of surveillance in patients with HCC in a nationwide Northern European setting.

Metod: Data on patients diagnosed with HCC between 2009 and 2019 were collected from the Swedish National Registry for Tumors of the Liver and Bile Ducts (SweLiv). Patients who had undergone HCC surveillance were compared to those who had not (including only patients with obvious indication for surveillance, i.e. liver cirrhosis or hepatic porphyria aged ≥50 years). Outcomes were tumor burden, extrahepatic spread, receipt of potentially curative treatment and lead-time adjusted overall survival. Underlying etiologies of HCC were also extracted from the registry.

Resultat: A total of 4979 patients with HCC was identified. In total, 1078 patients had undergone surveillance whereas 1647 had not, despite having a supposed indication for HCC surveillance. The surveillance group more often met the University of California San Francisco-criteria (79 % vs 53 %, p <0.001), had a higher receipt of potentially curative treatment (62 % vs 28 %, p <0.001) and a lower occurrence of extrahepatic spread (7.6 % vs 22.4 % p <0.001). Estimated median survival (lead-time adjusted) was significantly higher in the surveillance group compared to the non-surveillance group, 34 vs 11 months (p <0.001), respectively. Multivariable cox regression showed an adjusted hazard ratio of 0.59 (95 % CI 0.51- 0.67) in favor of surveillance. The most common underlying etiologies for HCC were hepatitis C virus infection (29.5 %) and alcoholic liver disease (25.8 %).

Slutsats: Patients with HCC that had undergone surveillance had better lead time-adjusted overall survival, as well as a lower tumor burden, higher receipt of potentially curative treatment and a lower occurrence of extrahepatic spread. These finding may encourage HCC surveillance of at-risk patients also in a Northern European setting.



Kaplan meier curve showing estimated lead-time adjusted survival. Non-surveillance group including only patients with a presumed surveillance indication.

O.05

Moderate alcohol consumption is associated with significant fibrosis progression in NAFLD

Leversjukdomar

J. Blomdahl[1], P. Nasr[1], M. Ekstedt[1], S. Kechagias[1]
[1]*Department of Gastroenterology and Hepatology, Department of Health, Medicine, and Caring Sciences, Linköping University, Linköping, Sweden*

Bakgrund: NAFLD affects approximately 25 % of the adult population worldwide. The effect of moderate alcohol consumption on NAFLD histology is disputed. A highly sensitive and specific alcohol biomarker is phosphatidylethanol in blood (PEth), which only forms in the presence of ethanol. PEth has hitherto not been evaluated in longitudinal NAFLD studies. This study aimed to examine the impact of moderate alcohol consumption on histologic progression and to evaluate the utility of PEth in NAFLD.

Metod: A cohort of NAFLD patients with serial liver biopsies were reviewed for inclusion in the study. Baseline alcohol consumption was <140 g/week in all patients. Anthropometric and biochemical measurements were performed at baseline and follow-up. Alcohol consumption was measured at follow-up, using three different methods (clinical interview, the AUDIT-C questionnaire, and analysis of PEth). Patients were reviewed for histological progression, including significant fibrosis progression, defined as progression of fibrosis stage ≥2 stages or development of cirrhosis-related complications.

Resultat: Eighty-two patients were included. Mean follow-up time was 17.2 years (SD ±6.0). Patients with significant fibrosis progression reported higher alcohol consumption and had significantly higher PEth. Progression of other histological parameters was unaffected during follow-up and showed no significant associations with alcohol consumption. Consumption >66-96 grams per week (but <140 grams) was associated with an increased risk of significant fibrosis progression compared with no or low consumption. PEth ≥48 ng/mL and binge drinking showed the highest risk for significant fibrosis progression (aOR 5.9 [95 % CI 1.6-21.4], p <0.05, and aOR 5.1 [95 % CI 1.4-18.1], p <0.05, respectively).

Slutsats: NAFLD patients consuming moderate amounts of alcohol are at increased risk for significant fibrosis progression and development of cirrhosis-related complications. PEth can be used as a reliable biochemical alcohol marker in NAFLD. Patients reporting moderate consumption or exhibiting PEth ≥48 ng/mL should be advised to reduce alcohol consumption.

O.06

Potential side effect of a submucosal lifting agent for endoscopic resections.

Endoskopi

T. Ichiya[1], A. Arvanitis[2], K. Elahi[1], R. Rezaie1, B. Alexandersson[1], A. Forsberg[1]
[1]*Endoskopicentrum, Capio Sankt Görans Sjukhus*
[2]*Pathology department, Unilabs, Capio Sankt Görans Sjukhus*

Bakgrund: Submucosal lifting agent is critical to perform endoscopic submucosal dissection (ESD) and even used sometimes in conventional endoscopic mucosal resection (EMR). ORISE Gel is a recently introduced and approved lifting agent in United States and Europe and one of the most used injection solutions for ESD. However, it has recently been revealed in some cases that ORISE Gel induces a foreign body reaction histologically. Most publications have been reported as small case series from United States, only a few from Europe. We aim to analyze the characteristic findings and clinical implications with Orise Gel injection and literature review to increase awareness.

Metod: We used a prospectively maintained ESD database at our center between January 2020 and October 2022. Colorectal ESD or converted EMR during ESD (rescue EMR) specimens injecting ORISE Gel were included. The literature review included from PubMed between January 2019 to November 2022.

Resultat: A total of 57 cases were included. Of these, 61.5 % were male (N=48) with a median age of 69 years. Of these, 5 cases underwent surgical resections of which the injection sites were distal rectum in 3, cecum in 1 and descending colon in 1 case. The surgical resection specimens showed histopathologically T2 colorectal cancer in one, residual adenoma with low grade dysplasia in two, and no dysplasia cell in two cases. All of them showed histologically extensive foreign body-type granulomatous giant cell reaction. These changes were detected before surgical resections in three cases by MRI or CT image with a sign of local wall thickness. This resulted in a clinical overdiagnosis of more advanced T-staging.

Slutsats: These cases rase the awareness that the submucosal lifting agent causes extensive histological reaction at the injection site, observed at the radiological imaged follow up.

GENERAL SESSION 2. Fria föredrag

11 maj 11:10-12:00

O.07

Economic Burden of Eosinophilic Esophagitis: A Swedish nationwide cost-of-illness study encompassing costs for healthcare use and productivity losses.

Funktionella mag-tarmsjukdomar och nutrition

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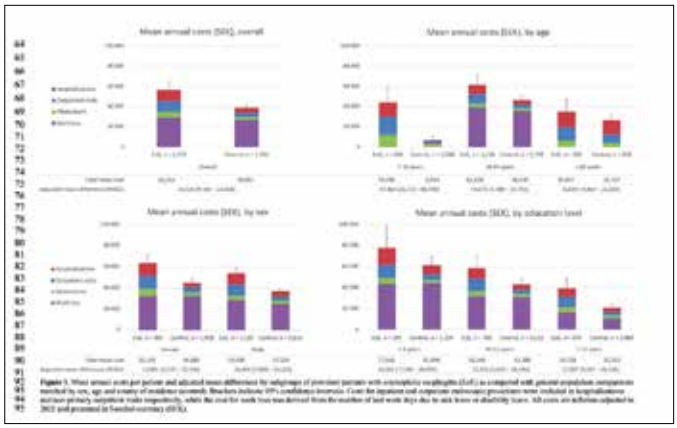
Bakgrund: Eosinophilic esophagitis (EoE) is a chronic allergic disease that may require repeated endoscopies, chronic medication use and frequent healthcare utilization. In this study, we calculate the societal economic burden of EoE by the use of real-world data from Swedish health registers.

Metod: Through biopsy reports from Sweden's 28 pathology departments, we identified 1,578 patients with EoE as of January 1, 2017, of which 1,275 (81 %) were diagnosed after 2010. Each patient was compared to up to 5 matched general-population comparators. Costs were based on prescription medications, non-primary outpatient visits and hospitalizations (including endoscopies), and work loss. Mean differences were adjusted for age, sex, and education level (parental education if age <18 years). All costs were inflation-adjusted to 2021 and presented in Swedish currency (SEK).

Resultat: In 2016, patients with EoE had a mean annual cost of 56,316 as compared with 38,991 in general-population comparators, corresponding to a mean annual excess of 17,325 (adjusted mean difference 16,526 [95 %CI: 9,394-23,658], Fig. 1). Although work loss was the largest cost component among patients and comparators alike, excess costs were primarily driven by outpatient visits (7,047) and hospitalizations (5,513) which together accounted for 72% of the mean annual excess cost. Notably, the excess cost of EoE was largest in patients aged <18 years who had a 6-fold higher mean annual cost as compared with comparators in the same age group (44,406 vs 6,954). The total annual cost of healthcare use and productivity losses in EoE patients was calculated to 90 million.



Slutsats: Patients with EoE had an increased mean annual cost, and the societal economic burden of EoE in Sweden amounted to 90 million in 2016 with a population of 10.0 million and a prevalence of 16 per 100,000 inhabitants. With the prevalence of EoE still rising, the economic burden of EoE is expected to continue growing.

O.08

Patient involvement in developing a colonoscopy-specific patientreported experience measure for quality improvement.

Endoskopi

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Bakgrund: Patient-reported experience measures (PREMs) are highlighted as clinically relevant information to better understand and address what matters to patients. Furthermore, patients' experiences of the colonoscopy procedure are important quality indicators according to the ESGE-guidelines (Kaminski et al. 2017). To ensure that significant experiences are measured, patients should be involved in creating the measurements. The aim was to develop a colonoscopy-specific PREM in co-production with patients.

Metod: A conceptual model based on a literature review and a qualitative interview study that illustrates patients' experiences of undergoing a colonoscopy formed the theoretical basis. To assess the degree to which the content of the items reflected the patients' experiences content validity was performed in accordance with COSMIN criteria. The validity was tested through face validity with clinicians and cognitive interviews with patients. In addition, content validity index was calculated to investigate the relevance of the items.

Resultat: The conceptual model consisted of five dimensions entailing experiences related to health motivation, discomfort, information, care relationship and understanding. Theses five dimensions were conceptual defined and then generated into items. The colonoscopy-specific PREM was initially represented by a total of 61 items. After (a) face validity assessment, (b) content validity assessment and (c) content validity index 36 items remained which represent a colonoscopy-specific PREM covering the five dimensions.

Slutsats: Patients were involved in developing a colonoscopy-specific PREM which appears to contain experiences of importance for patient. Psychometric properties need to be evaluated further.

O.09

Real-world outcomes of vedolizumab in IBD: A nationwide cohort study of patients starting intravenous and transitioning to subcutaneous treatment.

Inflammatoriska tarmsjukdomar

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Bakgrund: Real-world data on transitioning from intravenous (IV) to subcutaneous (SC) vedolizumab (VDZ) treatment in inflammatory bowel disease (IBD) are scarce.

Metod: Adult patients initiating IV and switching to SC VDZ treatment between 1 March 2020 and 31 December 2021 were identified from the Swedish inflammatory bowel disease register (SWIBREG). The primary outcome was SC VDZ persistence. Secondary outcomes included, clinical remission (defined by the two-item patient-reported outcome (PRO2) for Crohn's disease and ulcerative colitis), changes in quality of life according to EuroQual 5-Dimensions 5-Levels (EQ-5D-5L) and the Short-Health Scale (SHS) and faecal Calprotectin (FCP).

Table 1. Demographics and clinical characteristics at baseline of patients starting intravenous vedolizumab and switching to subcutaneous vedolizumab treatment

	Crohn's disease (n=181)	Ulcerative colitis (n=225)
Median age, years (IQR)	44.2 (30.5-60.3)	37.5 (28.0-57.4)
Sex female, n (%)	90 (49.7)	91 (40.4)
Median disease duration, years (IQR)	10 (4.7-22.5)	7.2 (2.6-14.7)
Location, n (%)*		
Ileal, L1	45 (24.9)	
Colonic, L2	53 (29.3)	
Ileocolonic, L3	70 (38.7)	
Behaviour, n (%)*		
Inflammatory, B1	84 (46.4)	
Stricturing, B2	44 (24.3)	
Penetrating, B3	15 (8.3)	
Perianal, P	24 (13.2)	
Extent, n (%)*		
Proctitis, E1		29 (12.9)
Left-sided colitis, E2		62 (27.6)
Extensive colitis, E3		124 (55.1)
Previous surgery, n (%)	53 (29.3)	11 (4.9)
Previous medications, n (%)		
Anti-TNF	141 (77.9)	160 (71.1)
Ustekinumab	18 (9.9)	3 (1.3)
Tofacitinib	1 (0.5)	8 (3.6)
Concurrent medications, n (%)		
Immunomodulators	23 (12.7)	27 (12.0)
Corticosteroids	24 (13.2)	45 (20.0)

*Data were missing for location, n=13; behaviour, n=38 extent, n=10.

Resultat: Altogether, 406 patients with IBD (Crohn's disease, n=181; ulcerative colitis, n=225) were identified. After a median follow-up of 30 months from starting IV VDZ treatment (i.e. baseline), the SC VDZ persistence rates were 98 % (178/181) in Crohn's disease and 94% (211/225) in ulcerative colitis. Most patients (84 %) transitioned during maintenance therapy and median follow-up from switch to SC VDZ was 10 months. At last follow-up, clinical remission rates were 60 % (109/181) in Crohn's disease and 56 % (126/225) in ulcerative colitis, whereas data were missing in 37 and 68 patients, respectively. Compared to baseline, statistically significant improvements were observed in all four domains of the SHS, EQ-5D index value and visual analogue scale. Median (interquartile range) FCP concentrations decreased from 445 (114-1189) µg/g to 59 (25- 227) µg/g in Crohn's disease (n=43, p<0.001) and from 646 (210-1450) µg/g to 49.5 (20-2758) µg/g in ulcerative colitis (n=54, p<0.001).

Slutsats: Initiating IV VDZ and switching to SC treatment was associated with high persistence rates and improvements in measures of QoL and FCP. These findings are reassuring for patients who switch from IV to SC VDZ.

O.10

Screening for advanced fibrosis due to NAFLD in patients with type 2 diabetes in a retina scanning facility.

Leversjukdomar

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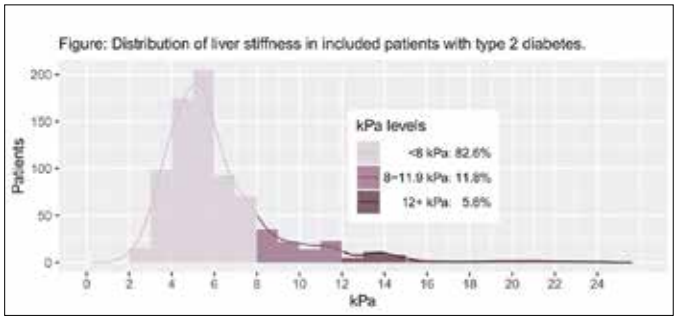
Bakgrund: Non-alcoholic fatty liver disease (NAFLD) is prevalent in patients with type 2 diabetes (T2D), and international guidelines suggest screening for advanced fibrosis. We evaluated the feasibility of offering patients with T2D that attended a retina scanning facility to also undergo vibration-controlled transient elastography (VCTE) to detect NAFLD and advanced fibrosis.

Metod: Patients with T2D that attended retina scanning at a single facility between 2020 and 2022 were asked for participation. Patients were assessed for clinical characteristics and underwent VCTE after a two-hour fasting period. NAFLD and advanced fibrosis were defined as controlled attenuation parameter (CAP) values of ≥280 dB/m and ≥12 kPa, respectively. Patients with liver stiffness ≥8 kPa were referred to the Karolinska University Hospital for a liver evaluation and second VCTE examination.

Resultat: 1102 eligible patients were asked for participation, of which 818 (74 %) were included. The mean age was 65 years (SD 9.6) and 62 % were men. 51 % had a CAP value of 280 dB/m or more, indicating NAFLD, and 137 (17 %) had a liver stiffness above or equal to 8 kPa, with 45 (6 %) having values suggestive of advanced fibrosis (≥12 kPa). Of those with values above or equal to 8 kPa, 93/137 patients (68 %) have so far accepted and been referred for a liver evaluation, while 28(20 %) were lost to follow-up and 16(12 %) are waiting for a follow-up. At repeat VCTE measurement, 41/93 persons (44 %) had a normal VCTE (<8 kPa), and 29(31 %) had values between 8 and 11.9 kPa, while advanced fibrosis was found in 23/93 persons (25 %).



Slutsats: Offering patients with T2D opportunistic screening with VCTE at the time of routine retina scanning is accepted by a high proportion. NAFLD and advanced fibrosis are common in this population, however false-positive findings are also frequent which needs to be considered if implementing this in routine clinical care.

O.11

Spondyloarthritis in first-degree relatives and spouses of patients with inflammatory bowel disease: A cohort study from Sweden.

Funktionella mag-tarmsjukdomar och nutrition

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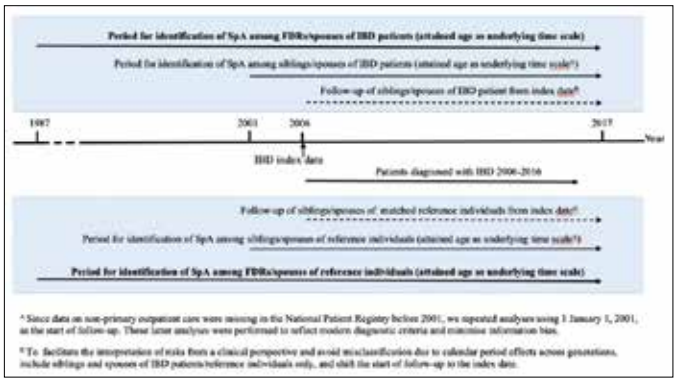
Bakgrund: Increasing evidence suggests that inflammatory bowel disease [IBD] and spondyloarthritis [SpA] share a common pathophysiology, but little is known about the role of familial [genetic and environmental] factors in this shared susceptibility. We aimed to compare the risk of SpA in first-degree relatives [FDRs] and spouses of IBD patients with FDRs and spouses of matched population-based reference individuals, overall and by IBD subtype and age.

Metod: We identified a cohort of 147,080 FDRs and 25,945 spouses of patients diagnosed with incident IBD during 2006-2016 and 1,453,429 FDRs and 258,098 spouses of matched reference individuals, by linking nationwide Swedish registers and gastrointestinal biopsy data. Study participants were followed 1987-2017. Cox regression was used to estimate hazard ratios [HRs] of SpA.

Resultat: During follow-up, 2,430 FDRs of IBD patients [0.65/1000 person-years] and 17,761 FDRs of reference individuals [0.48/1000 person-years] were diagnosed with SpA, corresponding to an HR of 1.35 [95 %CI:1.29,1.41]. SpA rates were lower in spouses of IBD patients and reference individuals (0.43/1000 and 0.35/1000 person-years respectively [HR=1.22; 95 %CI:1.09,1.37]). In subgroup analyses, relative risks were most pronounced in FDRs of Crohn's disease patients [HR=1.44; 95 %CI:1.34,1.56] and of IBD patients aged <18 years at diagnosis [HR=1.46; 95 %CI: 1.27,1.68].

Slutsats: The shared familial risks between IBD and SpA suggest shared genetic factors in their pathogenesis. However, spouses were also at increased risk for SpA, likely reflecting the influence of environmental exposures or similarities in health-seeking patterns.



Posterpresentationer

Endoskopi

P.01

AI-assisted capsule endoscopy reading in suspected small bowel bleeding.

Endoskopi

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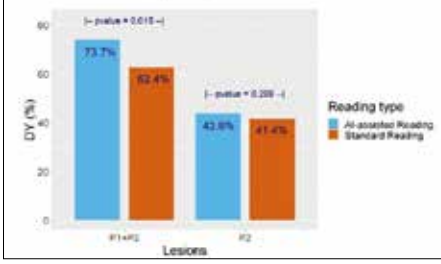
Bakgrund: Capsule endoscopy (CE) reading is time-consuming, and readers must maintain attention to not miss significant findings. However, deep neural networks (DNN) can recognize relevant findings, possibly exceeding human performance and reducing the reading time of CE.
The primary aim was to assess the non-inferiority of AI-assisted vs. standard reading for potentially small bowel (SB) bleeding lesions (high-P2, moderate-P1; Saurin classification) at per-patient analysis. The secondary aim was to compare the mean reading time.

Metod: From February 2021 to January 2022, 137 patients were prospectively enrolled from 14 European centers to perform SBCE with the Navicam SB system (Ankon, China), which is provided with a DNN-based artificial intelligence (AI) system (ProScan™) for automatic detection of lesions. The initial reading was performed in standard mode. The second blinded reading was AI-assisted (AI operated the first automated reading, and human readers assessed only AI-selected images).

Resultat: 133 patients were included in the final analysis (73 females, mean age 66.5 years±14.4 SD; completion rate 84.2 %).
At per-patient analysis, the diagnostic yield of P1+P2 lesions in AI-assisted reading (73.7 %, n=98/133) was non-inferior (p=0.015) and superior (p=0.035) to standard reading (62.4 %, n= 83/133), Fig. 2. Negative predictive values of standard and AI-assisted reading were 56 % and 80 %, respectively (p=0.039).
The mean SB reading time was 33.7±22.9 minutes in standard mode and 3.8±3.3 minutes when AI-assisted (p<0.001).

Slutsats: This is the first prospective, multicenter, blinded trial evaluating the performance of AI-assisted reading in SBCE in a real-world setting. The AI-assisted reading achieved a statistically significant increase in the detection of clinically relevant findings and the reading time was 8.8 times faster.

Figure 2. Comparison of DYs of standard and AI-assisted readings at per-patient analysis (p values refer to non-inferiority tests)



P.02

Arrhythmias as a Complication Following Radiofrequency Ablation for Barrett´s Esophagus.

Endoskopi

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Bakgrund: Radiofrequency ablation (RFA) is an important method to eradicate the mucosa in patients with dysplastic Barrett's esophagus without visible lesions. The method is effective and serious complications such as perforations are very rare. The most common complications are pain, bleeding and strictures. Cardiac arrhythmias are an unusual complication that is almost undocumented in the literature. We therefore wanted to find out how common it is with arrhythmias after RFA.

Metod: We performed a retrospective review of patients who underwent RFA at Karolinska University Hospital. The patient records were reviewed up to one month after each RFA occasion to see if the patient suffered from any heart-related problems.

Resultat: 164 patients were included in the study. In a total of 407 RFA treatments, 5 cases of arrhythmias were discovered. All patients who developed arrhythmias already had a documented cardiac diagnosis prior to RFA whereas none of the patients without prior cardiac diagnoses developed arrhythmias. Other complications were pain (2.7 %), bleeding (1.2 %) and strictures (1.5 %), which is comparable to what is described in the literature.

Slutsats: Arrhythmias after RFA are uncommon and do not appear to be serious. The cases we have found have quickly resolved spontaneously. Further research is needed to clarify whether patients with previous heart problems need to be handled differently than heart-healthy patients when performing RFA.

P.03

Colonoscopy in the elderly.

Endoskopi

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Bakgrund: Patients above 80 years often have comorbidities and it is not always obvious that a colonoscopy is the best choice of diagnostics. Usually, the main reason for colonoscopy in the elderly is a suspected cancer. There is a lack of information regarding indications and their correlation to endoscopic findings for elderly patients, making prioritizing patients difficult for clinicians. We wanted to evaluate symptoms/reasons for colonoscopy, outcomes, and corresponding positive predictive values (PPV) in patients > 80 years. Secondly, to evaluate the referral quality with respect to required information.

Metod: Retrospective data were retrieved for all referrals and colonoscopies performed in the Region Örebro County between October 2016 and December 2018 for non-screening reasons from patient aged 80 years or older (n=565). We defined significant pathology as colorectal cancer and any form of inflammation.

Resultat: Median age was 84 (3.8) years. While only 87 (15.7 %) colonoscopies were normal, significant pathology was found in 130 colonoscopies (23.0 %). In 104 patients we found cancer (56 % men). Abnormal rectal examination (PPV: 50.0 %), low ferritin (PPV: 44.1 %), abnormal radiology (PPV: 41.3 %) and positive f-Hb (PPV: 22.7 %) were the only symptoms with a significant odds ratio (OR) for significant pathology; OR 4.39 (95 % CI 2.19-8.80), 4.82 (1.86-12.5), 6.34 (2.56-15.7) and 4.70 (1.64-13.4) respectively. Altered bowel habits or visible blood in the stool showed no predictive value for significant pathology. For inflammation specifically, loose stool showed a PPV of 15.3 % and an OR 7.50 (3.33-19.9). Only 4 (0.7 %) referrals included the recommended information, but most referrals displayed sufficient information to correctly prioritize patients.

***Table. Frequencies of significant pathology with corresponding Odds Ratio** and PPV for different referral indications and pre-referral examination results.*

	Significant findings			No significant findings (n=435)	Not performed examination
	All (n=130) n (PPV) OR (95% CI)	Cancer (n=104) n (PPV) OR (95% CI)	Inflammation* (n=28) n (PPV) OR (95% CI)	n	n (%)
Referral indication					
Altered bowel function	46 (18.4) 0.62 (0.41-0.93)	28 (11.2) 0.40 (0.25-0.64)	18 (7.2) 2.98 (1.27-6.68)	204	0 (0)
- Loose stool	23 (23.5) 1.03 (0.61-1.72)	8 (8.2) 0.34 (0.16-0.73)	15 (15.3) 7.50 (3.33-16.9)	75	0 (0)
Abnormal radiology	31 (41.3) 6.34 (2.56-15.7)	30 (40.0) 11.0 (3.63-33.4)	1 (1.3) 0.30 (0.03-2.97)	44	420 (74.3)
Abnormal rectal examination	19 (50.0) 4.39 (2.19-8.80)	19 (50.0) 6.07 (2.98-12.3)	0 (0)	19	209 (37.0)
Visible rectal bleeding	36 (21.4) 0.88 (0.57-1.34)	27 (16.1) 0.79 (0.49-1.28)	9 (5.4) 1.26 (0.55-2.89)	132	0 (0)
Anaemia of unknow cause	55 (22.5) 0.95 (0.64-1.42)	49 (20.1) 1.22 (0.79-1.86)	6 (2.5) 0.38 (0.15-0.96)	189	0 (0)
Unexplained weight loss	26 (29.5) 1.50 (0.91-2.50)	22 (25.0) 1.61 (0.94-2.75)	4 (4.5) 0.99 (0.33-2.93)	62	0 (0)
Examinations before referral					
Low Hb [a]	84 (25.0) 1.25 (0.81-1.92)	72 (21.4) 1.53 (0.95-2.47)	12 (3.6) 0.59 (0.25-1.36)	252	44 (7.8)
Low ferritin [b]	15 (44.1) 4.82 (1.86 -12.5)	14 (41.2) 6.40 (2.27-18.1)	1 (2.9) 0.69 (0.07-6.86)	19	460 (81.4)
High faecal calprotectin [c]	10 (24.4) 1.45 (0.40-5.31)	3 (7.3) 0.79 (0.12-5.11)	7 (17.1) 2.06 (0.39-10.9)	31	502 (88.8)
Positive f-Hb	56 (22.7) 4.70 (1.64-13.4)	45 (18.2) 7.35 (1.74-31.1)	11 (4.5) 1.54 (0.33-7.11)	191	250 (44.2)

* Includes microscopic and infectious colitis, inflammatory bowel disease and non-specific inflammation.
[a] Defined as <117g/l for females and <134g/l for males. [b] Defined as <13µg/l for females and <30µg/l for males.
[c] Defined as >50mg/kg. OR and PPV were calculated after exclusion of not performed examinations.
Abbreviations: PPV, positive predictive value; OR, odds ratio; CI, confidence interval; Hb, haemoglobin; f-Hb, faecal haemoglobin test.

Slutsats: Colonoscopy is widely performed in elderly patients, mostly without significant pathology. Only a limited number of symptoms are associated with significant outcomes raising the question if fewer indications should qualify for colonoscopy. Potentially, an extended use of computed tomography could be beneficial.

P.04

Complications or adverse events (AE) during colonoscopy within the LS population in Stockholm.

Endoskopi

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Bakgrund: Lynch syndrome (LS) is a hereditary cancer syndrome, with an increased lifetime risk of developing colorectal cancer (CRC). Current guidelines recommend colonoscopy intervals of 2 years which requires high procedural quality for the patient's safety. Although colonoscopy is a relatively safe procedure, there are risks of adverse events (AEs) such as perforation, bleeding, splenic injury and death. Thulin et al 2019, showed that the relative frequency of bleeding and perforation varies in Sweden (bleeding: 0.02 %–0.27 %; perforation: 0.02 %–0.27 %). There are insufficient data regarding safety and quality of coloscopy surveillance for LS patients. The aim of this study was to investigate the risk of AEs amongst LS patients during colonoscopy.

Metod: Retrospective cohort study including 366 LS patients in endoscopic surveillance at the Karolinska University Hospital, August 1989-April 2021. Data from endoscopic surveillance colonoscopies were extracted from standardized protocols and medical records.

Resultat: Out of 1,887 endoscopies, 11 complications were documented within 30 days (0,58 %). In this study 5/1887 (0,26 %; 5/366 pts, 1,3 %) endoscopies led to a documented complication of bleeding or perforation. Total number of colonoscopies per patient leading to occurrence of one complication were 6 (mean, 0-12).

Slutsats: Complications were higher compared to previously described data regarding AEs in Sweden. Due to high number of performed colonoscopies of LS patients, the lifetime risk for participation in a surveillance program needs to be considered in health economic risk-benefit analyses. Experienced high-volume endoscopists at selected centers and adherence to appropriate surveillance intervals may decrease the risk of complications.

Author Contributions
Study concept and design: Ann-Sofie Backman. Data acquisition: Alexander Frank, Sophie Walton Bernstedt, Nigin Jamizadeh, Adrianna Haxhijaj, Ann Sofie Backman. Analysis: Alexander Frank, Anna Andreasson. Manuscript writing: Alexander Frank, Anna Andreasson, Anna Forsberg, Ann Sofie Backman. Critical revision of the manuscript for important intellectual content and approval: All.

P.05

Endoscopic suturing for the closure of gastric fistulas.

Endoskopi

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Bakgrund: Persistent gastric fistulas are difficult to treat and causes much suffering for the affected patients. Existing endoscopic methods, such as clips rarely work well and often traditional surgery is needed to finally close the fistulas. Endoscopic suturing is a new method for closure of various defects in the gastrointestinal tract. One of the advantages is that much larger defects can be sealed. So far, however, there are not many studies on endoscopic sutures for the closure of gastric fistulas.

Metod: We have done a retrospective review of gastric fistulas that were closed with endoscopic sutures at Karolinska University Hospital 2019-2022.

Resultat: 14 patients, 6 women and 8 men, underwent closure of gastric fistulas with endoscopic sutures. Six patients had defects after repaired buried bumper due to Duodopa-PEG, five patients had persistent fistula after removal of PEG, two patients had a persistent fistula after removal of HotAxios stent due to pancreatitis abscess, one patient had a gastrocutaneous fistula after a perforated ulcer and one patient had a fistula after surgery. Two patients relapsed and underwent a second round of endoscopic sutures but relapsed again, so we refrained from further attemps. One of these patients had an awkward location of the fistula right at the pylorus, which made suturing technically difficult. Technical success was achieved in 16 of 16 procedures (100 %). Clinical success was achieved in 12 of 14 patients (86 %). There were no complications related to the procedures.

Slutsats: Endoscopic suturing is a safe and effective method for the closure of gastric fistulas and can be tried before the patient is referred for traditional surgery.

P.06

ERCP with pancreatic stenting in pre-teens with pancreatic diseases: feasibility, rate of complications and long-terms outcomes.

Endoskopi

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Bakgrund: Evidence on pancreatic ERCP in young children is minimal. The aim of this study was to evaluate feasibility, complications and long-terms outcomes of ERCP with pancreatic stenting in preteens patients with pancreatic diseases.

Metod: Consecutive patients, aged ≤12 years, with diagnosis of chronic pancreatitis (CP), recurrent acute pancreatitis (RAP), pancreatic trauma (PT) or cancer have undergone ERCP with pancreatic stenting at Karolinska University Hospital between 2003 and 2019. Primary endpoints were: rate of complications (post-ERCP AP, bleeding/perforation) and long-term outcomes (procedure-related mortality, length of hospital stay, clinical effectiveness). ERCP was defined as clinically effective when patients experienced resolution or marked improvement of acute and chronic background symptom. Secondary endpoints were technical features of the ERCP (cannulation technique, type/diameter of the stents, ERCP findings).

Table 1. Technical characteristics of ERCP.

Characteristics of ERCP:	
Sphincterotomy	16.4%
Pre-cut sphincterotomy	4.4%
Minor papilla cannulation	14.9%
Balloon dilation of the MPD	22.3%
ERCP findings:	
MPD dilation	71.6%
Strictures	52.2%
Stones	32.8%
Protein Plugs	37.3%
Pseudocyst	33.3%
Pancreas Divisum	17.9%
MPD rupture	5.9%
Previous Pancreas Stenting	31.3%
Stenting:	
10 Fr	19.0%
8 Fr	33.3%
7 Fr	66.6%
5 Fr	30.0%
4 Fr	1.7%
3 Fr	5.3%

Resultat: A total of 67 ERCPs were performed in 24 patients, 58.3 % males, mean age 7.5 years (2-12). The indication for ERCP was CP (64.1 %), pancreatic trauma (14.9 %), cancer (7.4 %), AP (7.4 %), other (5.9 %). Overall, procedure related mortality was 0 % and complications occurred in 8.9 % of cases (7.4 % AP, 1.4 % bleeding, 0 % perforations). In 88.0 % of cases ERCP was considered as effective. The technical characteristics of ERCP are summarized in table 1.

Slutsats: Pancreatic ERCP can be a safe and effective strategy even in preteen patients, that generally harbor higher risk for post-ERCP complications. In high volume centers and with experienced operators, ERCP might improve symptoms leading to clinical resolution and possibly bridging patients to adult age for delayed surgical interventions.

P.07

Esophageal lymphoma diagnosed by endoscopic ultrasound and fine needle biopsy.

Endoskopi

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Bakgrund:

Case

A 79-year-old man in good health had a computer tomography thorax after fall from a ladder. Noticed a 2 cm tumor in the wall of distal esophagus. Patient no dysphagia. Gastroscopy revealed a slightly bulging close to Z-line level with normal mucosa. ndoscopic ultrasound (EUS) identifies a hypoechoic tumor of size 13 mm originated from muscularis propria. Rine needle biopsu (FNB) performed as suspect gastrointestinal stroma tumor (GIST). Pathology revealed mature B-cells lymphoma (Diffuse large B cell lymphma). PET-CT shows no more lymphadenopathy. Patient was referred to oncology. Bone marrow biopsy showed limited involvement, no need for treatment at the moment and recommended clinical control.

Metod:

Endoscopi ultrasound and fine needel biopsy.

Resultat:

Mature B cellslymphoma.

Slutsats:

Discussion

The gastrointestinal tract is the most common extra nodal site for involvement by non-Hodgkin lymphoma. Esophageal lymphoma accounts for < 1% of all gastrointestinal lymphomas. Primary esophageal lymphoma in immunocompetent patient is very rare. Imaging findings of esophageal lymphoma are nonspecific, thus posing a diagnostic dilemma. EUS and FNB provides a relative minimal invasive approach for small submucosa tumor in gastrointestinal tract.

P.08

EUS guided fine needle fragmentation (EUS-FNF) for the treatment of difficult biliary stones; a novel indication for EUS. A case report with images.

Endoskopi

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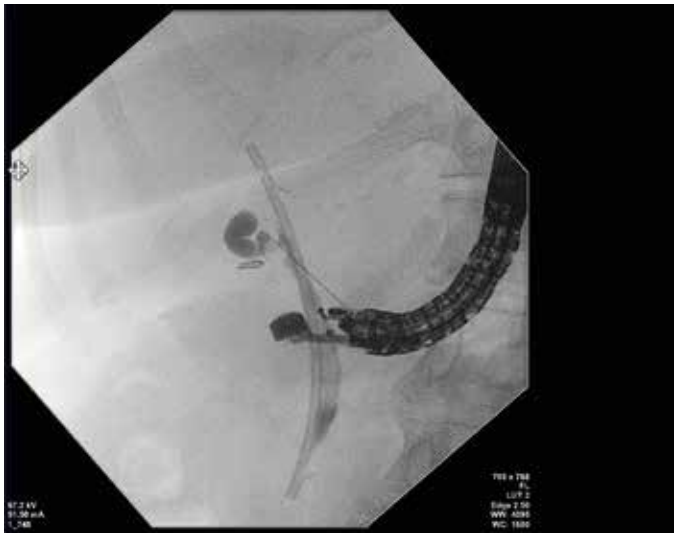
Bakgrund: Aims: This case reports a novel therapeutic indication for EUS in difficult biliary stone disease.

Metod: A lady (65y) presented with abdominal pain and jaundice. The liver enzymes, ALP and bilirubin were elevated. MRCP showed Mirrizi's syndrome Type I. An impacted stone in the cystic duct was obstructing a very short common hepatic duct and the intrahepatic biliary tree. A cholangiogram during the laparoscopic cholecystectomy with intraoperative ERCP confirmed the MRCP finding. The surgeon was unable to mobilize the stone out of the cystic duct. A transcystic guide wire was provided to an ERCPst and a balloon was introduced to the cystic duct by the ERCPst. The stone could not be mobilized to the common bile duct. The cystic stone was left and the bile duct was stented with a plastic stent.

Resultat: Two weeks later, the patient was readmitted for an elective stone extraction with cholangioscopy and lithotripsy. Based on a personal experience of fragmenting a pancreatic stone using FNA-needle, the endoscopist decided to start with EUS.
The stone in the cystic duct was found on EUS and confirmed by a cholangiogram using a 25G EUS-FNA needle. The stone was fragmented by the needle and flushed into the common hepatic duct. Only an ERCP and a balloon catheter were then needed to extract the stone in the same session. No further stones were observed on the final cholangiogram.

Slutsats: EUS guided fine needle fragmentation (EUS-FNF) seems to be an easy, effective and cheap new therapeutic indication for EUS.



P.09

Feasibility, efficacy and tolerance of gastroduodenal placement of small bowel capsule endoscopy devices: a retrospective multicentric European study.

Endoskopi

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Bakgrund: It is sometimes necessary to perform an upper gastrointestinal endoscopy for gastroduodenal placement (GDP) of small bowel (SB) capsule endoscopy (CE) devices. The aim of our study was to describe feasibility and clinical outcomes of the technique in adult patients.

Metod: We conducted a multicentric, European, retrospective study. Inclusion criteria were age above 18 years old, SBCE-GDP, between September 2002 and May 2022. Primary outcome was occurrence of adverse events (AE). Secondary outcomes included technical success, SB completion, SB transit time (SBTT), and diagnostic yield (DY, P1+P2 findings).

Resultat: 29 centers participated. 630 adult patients were included (mean age 62.5 years old, 55.8 % women). Main indication for SBCE was suspected SB bleeding (70.4 %). GDP was mostly due to impossibility or failure to oral ingestion (41.8 %). AE occurred for 94 patients (20.5 %), being severe in 3 patients. No death occurred. Technical success rate was 95.5 %. After technical success, SB completion rate was 83.7 %, being significantly higher when CE was delivered in the duodenum (85.9 %) than in the stomach (62.8 %, $p < 0.0001$). Median SBTT was 267 min (IQR [200; 364]). DY was 60.3 %.

Slutsats: This large-scale study demonstrates good tolerance profile and high technical success rate of SBCE-GDP. SBTT seems longer than when CE is orally ingested (220-250 minutes, according to largest series in the literature), most likely related to patient sedation. However, completion rate (86.6 %) after SBCE-GDP seems similar to that after oral ingestion (83.0 % in largest series) whereas DY seems higher (but probably for better selected patients).

P.10

Gastroscopy in 51–60 year-old patients: A retrospective study of referrals and endoscopic findings, and a comparison with younger patients.

Endoskopi

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Bakgrund: Swedish guidelines suggest direct esophagogastroduodenoscopy (EGD) in patients >50 years with uninvestigated dyspepsia and in patients with alarm symptoms. The age cutoff is >60 years in American and Canadian guidelines. Alarm symptoms have showed questionable value in predicting malignancy. Our study aimed to evaluate EGD referral factors of patients between 51-60 years in relation to guidelines, and to evaluate differences in endoscopic findings compared to younger patients.

Metod: We retrospectively studied referrals and EGD outcomes from a cohort of patients between 51-60 years, between January 2019 - April 2020. Odds ratios (OR), positive predictive values (PPV) and negative predictive values (NPV) were calculated. Data from patients 51-60 years were compared with data from our earlier study from patients between 41-50 years (n=633) from. Pearson's Chi-square test, Fischer's exact test and Mann-Whitney U test were applied.

Resultat: We included 683 patients between 51-60 years old. PPVs for alarm symptoms and SCC (Standardized Course of Care) criteria in predicting dysplasia/cancer were 1.0 %-6.9 %. Alarm symptoms were found in 48.3 % of all patients and in 70 % of patients with dysplasia/cancer (OR 2.5 (95 % CI 0.6-9.8). Alarm symptoms showed a PPV of 20.9 % (OR 2.5 (95 % CI 1.6-3.8)) for serious pathology, while NPV for absence of alarm symptoms in serious pathology was 90.3 %. When patients 51-60 years (n=622) were compared with patients 41-50 years (Table), there were more pathological findings in the older patient group (p<0.001), with differences mainly in benign pathology. In patients 51-60 years and in patients 41-50 years, there were 10 and 6 cases of dysplasia/cancer, respectively (p=0.298).

Table. Difference in symptoms, referral factors and pathological findings between age groups. Data for age group 41-50 were obtained from a database completed in an earlier study of EGDs under the same time period (Rådmen N, van Nieuwenhoven M. Gastroscopy in younger patients: an analysis of referrals and pathologies. Eur J Gastroenterol Hepatol 2021; 33: 1266–1271).

Age groups		41-50y (N=633)	51-60y (N=622)	P value
		N (%)**	N (%)**	
Sex, female		390 (61.6)	343 (55.1)	p=0.020 *
Waiting time (d)	Median (IQR)	30 (14-50)	25 (11-41)	p<0.001*
SCC referral		20 (3.2)	45 (7.2)	p<0.001*
GI disease diagnosis before EGD		188 (29.7)	199 (32.0)	p<0.001*
Previous EGD		182 (28.8)	218 (35.0)	p=0.542 *
Surveillance EGD		67 (10.6)	0	p<0.001 *
Pre-bariatric surgery EGD		20 (3.2)	0	p<0.001 *
Previous bariatric surgery		45 (7.1)	15 (2.4)	p<0.001*
Alarm symptoms		204 (32.2)	297 (47.7)	p<0.001 *
	Anaemia	84 (13.3)	93 (15.0)	p<0.001 *
	Melena/haematochezia	40 (6.3)	51 (8.2)	p<0.001 *
	Hematemesis	20 (3.2)	24 (3.9)	p=0.007 *
	Positive f-Hb	28 (4.4)	56 (9.0)	p=0.331 *
	Palpable mass in abdomen	1 (0.2)	0	p=1 *
	Weight loss	20 (3.2)	55 (8.8)	p<0.001 *
	Loss of appetite	4 (0.6)	26 (4.2)	p<0.001 *
	Dysphagia/odynophagia	49 (7.7)	86 (13.8)	p<0.001 *
	Vomiting/nausea/obstruction	28 (4.4)	24 (3.9)	p<0.001 *
	Jaundice	2 (0.3)	3 (0.5)	p<0.061 *
Pathological EGD		295 (46.6)	385 (61.9)	p<0.001 *
	Dysplasia/cancer	6 (0.9)	10 (1.6)	p=0.298 *
	GERD/esophagitis	75 (11.8)	115 (18.5)	p<0.001 *
	Gastritis/duodenitis	66 (10.4)	114 (18.3)	p<0.001 *
	Hiatal hernia	137 (21.6)	228 (36.7)	p<0.001 *
	Ventricular ulcer	42 (6.6)	35 (5.6)	p=0.461 *
	Duodenal ulcer	21 (3.3)	15 (2.4)	p=0.336 *
	Celiac disease	14 (2.2)	1 (0.2)	p<0.001 *
	Varices	14 (2.2)	13 (2.4)	p=0.807 *
	Stricture, stenosis or diverticulum	3 (0.5)	10 (1.6)	p=0.047 *
	Hypertensive gastropathy	0	29 (4.7)	p<0.001 *
	Esophageal ulcer	0	4	P=0.060 *

*Note: Pearson's Chi-square test was used for most variables (*). Where expected cell count was less than five, Fischer's exact test was applied (*). Mann Whitney U test was used for continuous, non-normally distributed data (*). Abbreviations: SCC = standardised course of care, f-Hb = faecal haemoglobin, GERD= gastroesophageal reflux disease, GI= gastrointestinal, EGD= esophagogastroduodenoscopy. In patients 41-50y, surveillance EGDs and pre-obesity surgery EGDs were included, but not in patients 51-60y. **All variables are shown as N(%) in the columns except for "Waiting time" which is shown as median (interquartile range (IQR)).*

Slutsats: Since older patients did not show significantly more cases of dysplasia/cancer than younger patients, our study suggests that the age cutoff in Swedish guidelines for direct endoscopy in uninvestigated dyspepsia could be increased. No alarm symptom or SCC criterion could predict dysplasia/cancer.

P.11

Grön endoskopi inom högspecialiserad vård.

Endoskopi

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Bakgrund: Den största hälsoutmaningen under 2000-talet är den sjukdomsbelastning som miljö- och klimatpåverkan orsakar. Samtidigt står sjukvården själv för mer än 20 % av den offentliga sektorns andel av utsläpp av växthusgaser och orsakar även utsläpp av andra toxiska ämnen. En stark bidragande faktor till utsläppen är användande av förbrukningsvaror och då särskilt engångsprodukter. Gastroenterologin lämnar ett av de största avtrycken främst genom sin endoskopiverksamhet. Att byta engångsprodukter mot flergångsprodukter har i studier inom anestesi och kirurgi visats reducera klimatpåverkan avsevärt och samtidigt vara ekonomiskt lönsamt. Karolinska Universitetssjukhuset har tre endoskopienheter som gemensamt arbetat med att minska sin klimatbelastning.

Metod: En arbetsgrupp bestående av läkare, sjuksköterskor och undersköterskor från de olika endoskopienheterna bildades. Miljögruppen inventerade sedan förslag från alla medarbetare. Sjukhusets miljösamordnare besökte endoskopienheterna och gav råd. En åtgärdslista togs fram och beslutades av ansvariga chefer. Vissa åtgärder genomfördes direkt medan andra genomfördes efter en försöksperiod på 1-2 veckor. På läkarmöten lades särskild vikt vid att diskutera riktlinjer för endoskopiundersökningar.

Resultat: Konceptet *Grön endoskopi Karolinska* skapades och sammanfattas i sex punkter:

- Minska elförbrukning
- Minska engångsmaterial
- Ej använda sterilt material när rent räcker
- Byte till biobaserade produkter
- Återvinna mer och bättre
- Rätt indikation och metod vid undersökning

Tabell 1 anger exempel på åtgärder.
Grön endoskopi har inte medfört avsteg från fastställda hygienrutiner eller från riktlinjer för högkvalitativ endoskopi. Åtgärder som utvärderats efter försöksperiod har i de flesta fall behållits, då de upplevts om meningsfulla och ej ökat arbetsbelastningen. Spontana synpunkter har varit positiva; t.ex. upplevs flergångsprodukter vara av högre kvalitet och arbetet skapar en positiv känsla av att bidra till klimatomställningen. En mätning av förbrukning planeras genom att jämföra mängd beställda engångsprodukter under en period före och efter införd Grön endoskopi.

Slutsats: En personalgemensam insats för att minska klimatpåverkan kan genomföras utan att arbetsbelastningen ökar och med bibehållen kvalitet på en högspecialiserad endoskopienhet.

Tabell 1. *Exempel på åtgärder i de sex kategorierna*

Kategori	Exempel på åtgärder
Minska elförbrukning	Släcka lampor Stänga av apparater mellan procedurer Stänga av datorer helt efter dagen
Minska engångsmaterial eller byte till flergångsmaterial	Kortärmade förkläden vid patientvård och gastroskopi Handskar endast vid kontakt med kroppsvätska Engångs byts mot flergångs: lakan, personalkläder, skålar, brickor, stasband och mätare av vitalparametrar Plastslangar klipps enligt mall för kortast möjligt Slynga som passar för både varmt och kallt Undvika "allt-i-ett set" Välja klimatsmart förpackning Välja klimatsmart produkt
Ej sterilt när rent räcker	Saxar Peanger Rockar Handskar Tillbehör
Byte till biobaserade produkter	Förkläden Återvinningskärl Soppåsar
Återvinna mer och bättre	Sortera mer noggrant Sorteringskärl på alla rum Källsortera elprodukter Minimera deponering (smittfarligt, skärande)
Rätt indikation och metod	Kallslynga när möjligt Virtuell färgning Kapselendoskopi Minska antal PAD Följa riktlinjer

P.12

Indications, Detection, Completion and Retention Rates of Capsule Endoscopy in Two Decades of Use: A Systematic Review and Meta-Analysis.

Endoskopi

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Bakgrund: Capsule endoscopy (CE) has become a widespread modality for the non-invasive evaluation of the gastrointestinal (GI) tract, with several CE models developed throughout the years. The aim of this systematic review and meta-analysis is to evaluate performance measures such as completion, detection, and retention rates of CE.

Metod: Literature through to August 2021 was screened for articles regarding all capsule types: small bowel, double-headed capsule for the colon or PillCam®Crohn's capsule, magnetically controlled capsule endoscopy, esophageal capsule, and patency capsule. Primary outcomes included detection rate (DR), completion rate (CR) and capsule retention rate (RR). DR, CR and RR were also analyzed in relation to indications such as obscure GI bleeding (OGIB), known/suspected Crohn's disease (CD), celiac disease (CeD), neoplastic lesions (NL) and clinical symptoms (CS).

Resultat: 328 original articles involving 86,930 patients who underwent CE were included. OGIB was the most common indication (n = 44,750), followed by CS (n = 17,897), CD (n = 11,299), NL (n = 4989) and CeD (n = 947). The most used capsule type was small bowel CE in 236 studies. DR, CR and RR for all indications were 59 %, 89.6 % and 2 %, respectively. According to specific indications: DR were 55 %, 66 %, 63 %, 52 % and 62 %; CR were 90.6 %, 86.5 %, 78.2 %, 94 % and 92.8 %; and RR were 2 %, 4 %, 1 %, 6 % and 2 %. Conclusions: Pooled DR, CR and RR are acceptable for all capsule types. OGIB is the most common indication for CE.

Slutsats: Technological advancements have expanded the scope of CE devices in detecting GI pathology with acceptable rates for a complete examination.

P.13

Inter/Intra-Observer Agreement in Video-Capsule Endoscopy: Are We Getting It All Wrong? A Systematic Review and Meta-Analysis.

Endoskopi

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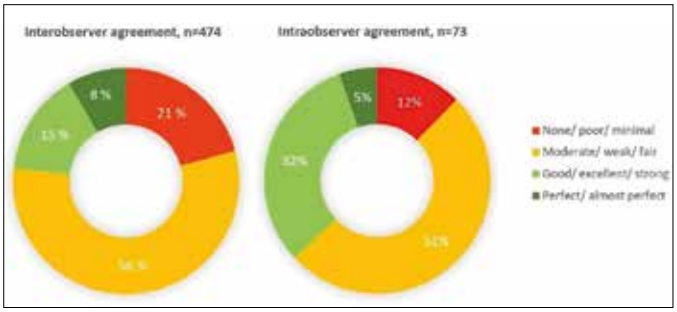
Bakgrund: Video-capsule endoscopy (VCE) reading is a time- and energy-consuming task. Agreement on findings between readers (either different or the same) is crucial for increasing performance and providing accurate reports.
The aim of this systematic review with meta-analysis is to provide an evaluation of inter/intra-observer agreement in VCE reading.

Metod: A systematic literature search in PubMed, Embase and Web of Science was performed throughout September 2022. The degree of observer agreement, expressed with different test statistics, was extracted. As different statistics are not directly comparable, our analyses were stratified by type of test statistics, dividing them into groups of "None/Poor/Minimal", "Moderate/Weak/Fair", "Good/Excellent/Strong" and "Perfect/Almost perfect" to report the proportions of each.

Resultat: In total, sixty studies were included in the analysis, with 579 comparisons. The quality of included studies, assessed with the MINORS score, was sufficient in 52/60 studies. The most common test statistics were the Kappa statistics for categorical outcomes (424 comparisons) and the intra-class correlation coefficient (ICC) for continuous outcomes (73

comparisons). In the overall comparison of inter-observer agreement, only 23 % were evaluated as "good" or "perfect"; for intra-observer agreement, this was the case in 36 %. Sources of heterogeneity (high, I2 81.8–98.1 %) were investigated with meta-regressions, showing a possible role of country, apsule type and year of publication in Kappa inter-observer agreement.



Slutsats: VCE reading suffers from substantial heterogeneity and suboptimal agreement in inter- and intra-observer evaluation. Artificial intelligence-based tools and the adoption of a unified terminology may progressively enhance levels of agreement in VCE reading.

P.14

Outcome after gastroesophageal variceal bleeding in a high-volume center: comparison of two time periods.

Endoskopi

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Bakgrund: The management of acute variceal bleeding, at Karolinska University Hospital, has changed in the last decade. Danistent and TIPS are more available and endoscopic procedures are now being carried out by highly specialized endoscopists. The effect of these changes has not previous been studied.

Metod: This is a retrospective cohort study of 466 patients with acute variceal bleeding between 2006–2010 and 2016–2020 at Karolinska University Hospital. A total of 222 patients were included from both time periods. The data set was collected from the patient record system. Mortality was compared in Kaplan Meier curves using long-rank test and chi-squared test was used to compare the different variables.

Resultat: There were lower numbers of rebleeding in the second time-period, within the same hospitalization 9.2 % *versus* 17.1 % in the first period. Rebleeding within one year was also lower in the second period, 21.6 % vs 30.3 %. Number of patients receiving TIPS (12.5 % vs 3.9 %) and number of endoscopies performed inside operation rooms (55.1 % vs 30.3 %) increased in the second period. There were no statistically significant (P= 0.76) difference in survival between the two time periods.

Slutsats: Rebleedning rates have improved in patients with variceal bleeding in Karolinska University Hospital. This may be explained by the technical and organizational changes made during the period. However, so far we have not seen any statistical difference in the survival rate.

P.15

Outcome after nonvariceal upper gastrointestinal bleeding in a high-volume center: comparison of two time periods.

Endoskopi

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Bakgrund: Since 2015 our center has replaced on-call surgeons with on-call endoscopists for acute endoscopic procedures at all days of the week, 24 hours a day. There is a lack of data regarding the effect of these changes in Sweden. The aim of this study was to compare the outcome of treatment during two periods in patients who presented with acute after nonvariceal upper gastrointestinal bleeding at Karolinska University Hospital.

Metod: A retrospective study of 198 patients presenting with nonvariceal upper gastrointestinal bleeding examined with endoscopy was done through documenting patient outcomes and other parameters relating to bleeding. 135 patients were documented from the period of 2012-2013 and 63 from the period of 2017-2020. Data was collected through the patient journal system. A survival analysis of rebleeding rate was performed.

Resultat: The two primary outcomes observed were mortality and rebleeding rates. Mortality was found to be lower during the second period with 8.9 % of patients dying during hospitalization. High mortality was mainly found in patients with advanced comorbidity. There was a statistically significant lower 30- and 90-day mortality rate in the second period. Rebleeds were found to be rare and most occurred within a week of admission.

Slutsats: Mortality as well as 30- and 90-day mortality was lower during the second period. The amount of hospital admissions was also lower during the second period. This may be explained by the technical and organizational changes made during the period.

P.16

Pharyngeal squamous cell carcinoma and risk of later esophageal squamous cell carcinoma.

Endoskopi

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Bakgrund: Pharyngeal squamous cell carcinoma is a known risk factor for later squamous cell carcinoma of the esophagus. We investigated whether the risk of esophageal carcinoma is high enough to justify routine gastroscopy surveillance in a northern European population. If the risk among patients with pharyngeal carcinoma corresponds to the risk among patients with Barretts esophagus of developing adenocarcinoma, it could justify surveillance.

Metod: Histopathology data from pharyngeal and esophageal biopsies obtained 1980-2016 in Sweden's 28 pathology departments were linked to national population-based healthcare registers. We calculated a subdistribution hazard ratio (HR) comparing the risk of esophageal cancer and death in patients with pharyngeal carcinoma to a matched general population.

Resultat: In total 1399 patients with pharyngeal cancer were identified. 344 were excluded due to age under 18 years, previous esophageal cancer, death or cancer within 6 months of diagnosis. Thus, 1055 patients remained, Median follow up time was 5,1 years. 78 % were men and median age at diagnosis of pharyngeal cancer was 64 years. Four (0.38 %) patients developed esophageal squamous cell carcinoma during follow-up, equal to 1 in 263 patients (HR=14,32; 95 %CI=1,55-132,30). 855 of the patients (81 %) died during follow-up (HR=7,65; 95 %=6,82-8,59).

Slutsats: The yearly risk of developing esophageal squamous cell carcinoma was 0,07 %, which is lower than the risk among patients with Barretts esophagus. Therefore, we find no support for long-term endoscopic surveillance among patients with pharyngeal cancer.

P.17

The clinical significance of "serological atrophic gastritis".

Endoskopi

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Bakgrund: In a cohort representative of a population in Sweden we aimed to study if an individual with low pepsinogen I levels ("serological atrophic gastritis") differed from an individual with normal pepsinogen I levels in the prescription of proton pump inhibitors (PPIs), referral to gastroscopy, and findings on gastroscopy.

Metod: In the MONICA survey from 1990-2009 in Region of Västerbotten, Sweden, 519 persons who had pepsinogen I levels measured at baseline were included in the study (mean age 51.6 (SD:8.8); 49 % women). We used pepsinogen I levels <28 µg/L to define serological atrophic gastritis. A medical chart review was done that focused on the prescription of PPIs and findings on gastroscopies in the follow-up period (mean observation time 21.4 years (SD 6.5)).

Resultat: The patients with serological atrophic gastritis had higher body mass index (27.5 vs 26.2 kg/m^2; p=0.007), were more seldom current smoker (8 % vs 17 %; p=0.025), had more often helicobacter pylori positivity (57 % vs 36 %; p<0.001) and had more often findings of atrophic gastritis or gastric polyps on gastroscopy (20 % vs 8 %; p<0.001) but there were no differences in the mean number of gastroscopies per 100000 person-years (3334 vs 2310; p=0.188) and in the mean PPI dose (omeprazole equivalents) per year (1064 vs 1046; p=0.952). In a logistic regression, serological atrophic gastritis was associated with not being prescribed PPI and with the findings of atrophic gastritis and/or gastric polyps on gastroscopy in the observation period but not with the risk of being referred to gastroscopy (Table).

Table. Logistic regression showing the risk for female gender, age, body mass index, smoking, helicobacter pylori serology and low pepsinogen I levels to be prescribed proton pump inhibitors, being referred to gastroscopy and to be diagnosed with gastric polyps or atrophic gastritis.

	Prescription of proton pump inhibitors at least once in the observation period	Performed at least one gastroscopy in the observation period	Verified gastric polyps or atrophic gastritis in the observation period
Female gender	1.45 (1.02-2.06)	1.21 (0.81-1.82)	1.24 (0.68-2.25)
Age at sample	1.01 (0.99-1.04)	1.02 (0.99-1.04)	1.04 (1.00-1.08)
Body mass index > 30 kg/m^2	1.43 (0.88-2.31)	1.04 (0.60-1.79)	1.31 (0.62-2.75)
Current smoker at sample	0.83 (0.51-1.36)	1.62 (0.96-2.73)	1.55 (0.74-3.29)
Positive Helicobacter serology	1.49 (1.01-2.18)	1.67 (1.09-2.56)	1.97 (1.05-3.71)
Pepsinogen I < 28 µg/L	0.61 (0.38-0.98)	1.20 (0.71-2.04)	2.42 (1.25-4.68)

Slutsats: Persons with serological atrophic gastritis is not referred more often for gastroscopy but are at higher risk of being diagnosed with gastric polyps or atrophic gastritis. Persons with normal pepsinogen I levels are more often (at least once) prescribed PPI than persons with serological atrophic gastritis.

P.18

The Effectiveness of a Very Low-Volume Compared to High-Volume Laxative in Colon Capsule Endoscopy.

Endoskopi

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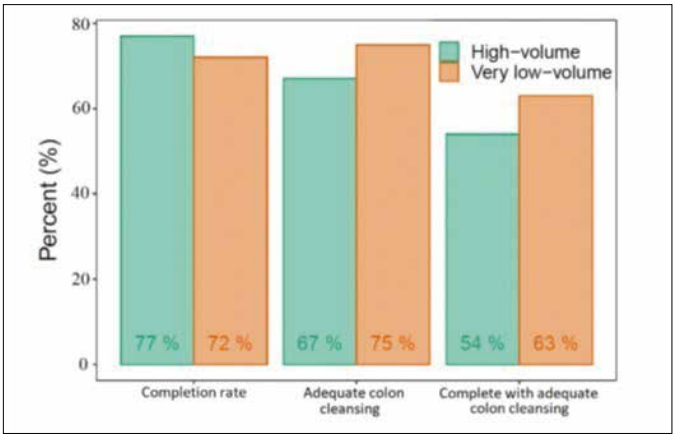
Bakgrund: Colon capsule endoscopy (CCE) is a viable alternative modality for colonic investigations. Furthermore, the double-headed camera capsules (PillCam) are being applied for panenteric examinations, with promising clinical results. To achieve wider CCE adoption, challenges regarding completion rates (CR) and adequate cleanliness rates (ACR) should be improved to meet the quality standards for optical colonoscopy. Bowel cleansing is known to be an obstacle to patient compliance with endoscopic procedures.
A very low-volume polyethylene glycol-based (PEG) laxative containing ascorbic acid (Plenvu) was developed to pursue a more tolerable cleansing regimen. So far, this regimen was only used for bowel preparation before a colonoscopy.
Therefore, this study aimed to investigate the effectiveness, including CR, ACR, and diagnostic yield (DY), of a very low-volume laxative compared to a conventional PEG-based high-volume (Laxabon) laxative.

Metod: We carried out a retrospective comparative cohort study including consecutive patients referred for CCE. One hundred and sixty-six patients were included in the final analysis, 83 patients in each group. The high-volume group received 4L Laxabon solution and the very low-volume group received 1L Plenvu solution. Completion of investigation and cleansing quality were evaluated by a gastroenterologist with extensive experience in small-bowel capsule endoscopy and CCE blinded to the laxative used.

Resultat: We found a CR and ACR of 77 % and 67 % in the high-volume group and 72 % and 75 % in the very low-volume group, respectively. In the high-volume group, 54 % had complete transit and adequate cleansing, whereas this was the case for 63 % in the very low-volume group. No statistically significant difference in CR, ACR, or a combination of the two and DY was found.



Slutsats: A very low-volume bowel preparation regimen performed equal to a high-volume regimen before CCE in terms of CR, ACR and DY. The markedly lower volume of active substance could be an advantage regarding patient acceptability.

P.19

The role of small bowel capsule endoscopy as a diagnostic tool in isolated complex perianal disease.

Endoskopi

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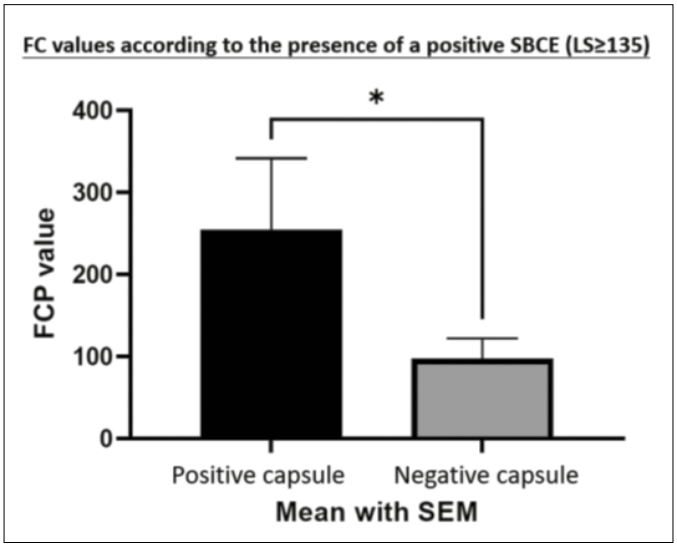
Bakgrund: Isolated complicated perianal disease (cPD) might be the sole representation of Crohn's disease (CD). We aimed to evaluate the impact of small bowel capsule endoscopy (SBCE) as a diagnostic tool for CD in this population.

Metod: A multicenter, retrospective cohort study from three tertiary centers. Patients with cPD who had a negative workup for CD (Ileocolonoscopy and cross-sectional imaging) and underwent evaluation with SBCE were included. Demographics, biomarkers, and the Lewis inflammatory score (LS) were recorded and analyzed. A LS≥135 was considered a positive SBCE.

Resultat: Ninety-one patients were included: 65 males (71.4 %), mean age 40 (14) years, median duration of cPD 25.13 months (12.53-66.1). SBCE was positive in 24 patients (26.37 %). Median LS was 675 (222-1518). Fecal calprotectin (FC) positively correlated with LS (r=0.81; p<0.0001): patients with a positive vs. negative SBCE had a significantly higher mean FC level (255 [389] vs 97[180], p=0.02), figure 1. Correspondingly, a FC level ≥ 300 mg/kg had a specificity of 90 % for a positive SBCE, while a cutoff of FC level <100 mg/kg or <50 mg/kg had a sensitivity of only 40 % or 50 % to rule out small bowel CD, respectively.

Slutsats: SBCE was positive in over a quarter of patients with cPD and a negative workup for CD. FC levels correlated with the degree of inflammation defined by the LS. However, the sensitivity of low FC to rule out CD was low. These results suggest that SBCE is an essential diagnostic tool for patients with cPD even after negative workup.



P.20

Time and Motion at the Endoscopy Unit – A University Hospital Experience.

Endoskopi

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Bakgrund: An effective workflow at the endoscopy unit is important for optimal production. We performed a real-life time-and motion study to identify the amount of time that patients spend during the different steps of a regular endoscopy procedure and compared propofol with midazolam sedation.

Metod: Data from 376 patients were prospectively collected during 31 non-consecutive days between September 2021 and November 2021, in patients undergoing either a routine gastroscopy or colonoscopy. Durations of the different procedure steps were measured. Correlations between recovery times, age and dose of sedative were calculated. Multiple regression analysis was performed to evaluate how various factors affect recovery time.

Resultat: The use of midazolam resulted in significantly shorter Procedure Duration for gastroscopy (6.9 vs. 8.9 min), shorter Endoscopist Delay Duration for either type of endoscopy (7.6 vs. 9.8 min for gastroscopy and 7.6 vs. 11.3 min for colonoscopy), shorter Endoscopy Room Duration for gastroscopy (22.8 vs. 31.6 min), shorter recovery time for colonoscopy (28.5 vs 36.2 min) and shorter Endoscopy Unit Duration for either type of endoscopy (81.6 vs. 99.5 min for gastroscopy and 108.6 vs. 123.6 min for colonoscopy). There was a weak positive correlation between dose of midazolam and recovery time, but not for propofol. We found no correlation between age and recovery time for the patients receiving either midazolam or propofol who underwent either gastroscopy or colonoscopy (p=-0.011, p=0.857), and no correlation between age and Endoscopy Unit Duration (p=-0.82, p=0.122).

Slutsats: A time-and-motion study is very useful to identify the durations of all the different steps of an endoscopy procedure, thus allowing for the identification of potential bottlenecks. Higher age is not associated with longer recovery time. In contrast to other studies, propofol administration leads to more time spent at different steps in the workflow at our unit.

Workflow process measure	Definition
Calling time	Time patients received to announce their presence at unit reception.
Reception registration time	Actual time patients announce their presence at unit reception.
Preparation room time	Time patients enter the preparation room.
Entering endoscopy room time	Time patients enter the procedure room.
Endoscopist room time	Time endoscopist enters the procedure room.
Procedure start time	Time of procedure start.
Procedure stop time	Time of procedure stop.
Procedure duration	Duration of procedure.
Exiting endoscopy room time	Time patients exit the procedure room.
Recovery room time	Time patients enter the recovery room.
Leaving time	Time patients leave the endoscopy unit.
Room turn-over time	The duration of time to prepare a procedure room for the next procedure.

P.21

What is the significance of the Hill classification?

Endoskopi
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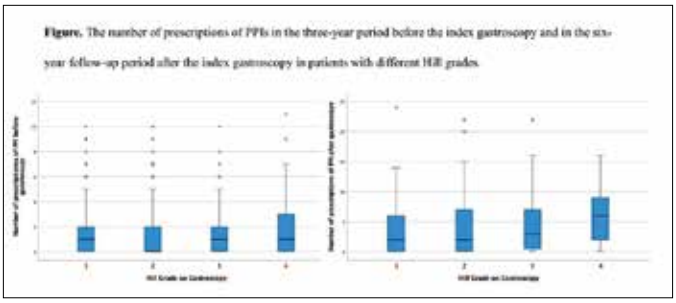
Bakgrund: This study aimed to investigate the significance of Hill classification to predict esophagitis, Barrett´s esophagus, GERD symptomatology and future prescriptions of proton pump inhibitors in clinical practice.

Metod: A total of 922 patients (546 women and 376 men; mean age 54.3 (SD 18.4) years) who underwent gastroscopy between 2012-2015 were analyzed. Patient questionnaire regarding symptoms were compared to endoscopy findings. A medical chart review was done that focused on the prescription of PPIs, additional gastroscopies and GERD surgery in a three-year period before the index gastroscopy and in a six-year period afterward.

Resultat: At the index gastroscopy the patients with Hill grade IV had significantly more often esophagitis compared to the patients with Hill grade I (40.5 % vs 11.9 %; p<0.001), Hill grade II (40.5 % vs 18.4 %; p<0.001) and Hill grade III (40.5 % vs 21.4 %; p<0.001). In patients naïve to PPI prescriptions (n=466) Hill grade III were significantly associated with esophagitis (AOR 2.20; 95 % CI 1-00-4.84) and >2 PPI prescriptions six year after the index gastroscopy (AOR 1.95; 95 % CI 1.01-3.75) whereas Hill grade IV were significantly associated with esophagitis (AOR 4.41; 95 % CI, 1.92-10.1), with Barretts esophagus (AOR 12.7; 95% CI 1.45-112), with reported heartburn (AOR 2.28; 95 % CI 1.10-4.74) and with >2 PPI prescriptions (AOR 2.16; 95 % CI 1.02-4.55). In patients "non-naïve" to PPI prescription (n=556) only Hill grade IV were significantly associated with esophagitis, reported heartburn and with >2 PPI prescriptions.

Slutsats: The gastroscopic classification in Hill grade III and IV are important in clinical practice because they are associated with esophagitis, Barretts esophagus, symptoms of GERD and prescriptions of PPIs, while a differentiation between Hill grade I and II is not.



Funktionella mag-tarmsjukdomar och nutrition

P.22

A comparison of Swedish general practitioners and IBS patients regarding viewpoints on IBS: a Q-methodology study.

Funktionella mag-tarmsjukdomar och nutrition
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Bakgrund: Irritable bowel syndrome (IBS) is a common functional gastrointestinal disorder. A good patient-doctor relationship in which mutual viewpoints regarding IBS are shared, is crucial for optimal treatment. Q-methodology is a combination of qualitative and quantitative methods used to study subjectivity. This method allows for the comparison of viewpoints between patients and doctors.

Metod: We included 30 IBS patients and 30 general practitioners (GPs). All participants sorted 66 statements on IBS according to their own beliefs and placed them on a grid (Figure) with a forced quasi-normal distribution with statements being ranked from "totally agree" to "totally disagree, using online software (www.qmethodsoftware.com). Data were processed using factor analysis. In addition, 3 patients and 3 GPs were interviewed.

Resultat: Three factors were extracted from both groups and the factors were named after their most distinguishing statements: Patient factor 1 "Question the diagnosis of IBS", Patient factor 2 "Lifestyle changes for a somatic disorder", Patient factor 3 "Importance of a diagnosis", GP factor 1 "Unknown causes to a great suffering", GP factor 2 "Lifestyle changes are important and stress makes IBS worse", GP factor 3 "recognised the way IBS affects patients". There was a strong and statistically significant correlation between patient factor 1 and GP factor 1, with a Pearson´s r of 0.81 (P<0.001). Correlations between other factors varied to a lower degree, with r-values between 0.46 and 0.74.

Slutsats: There was consensus among patients and GPs that IBS is a somatic, and not a psychiatric disorder of unknown aetiology, with multiple possible explanations. They also agreed that IBS has a negative impact on patients´ lives and that lifestyle changes are beneficial in IBS management. There were conflicting opinions regarding gender and cultural factors. There was also disagreement regarding the use of antidepressants. Some opinions among both groups were inconsistent with current knowledge about IBS.

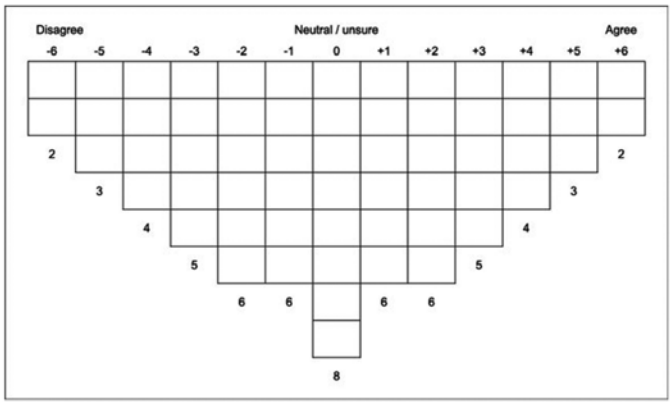

Figure. Example of a Q-sort grid.

P.23

Associations and gastrointestinal symptoms in women with endometriosis in comparison to women with irritable bowel syndrome.

Funktionella mag-tarmsjukdomar och nutrition
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Bakgrund: Endometriosis and irritable bowel syndrome (IBS) have similar symptoms, pathogenesis, and risk factors. These diagnoses often coexist and are frequently misdiagnosed leading to diagnostic delays. This study aimed to investigate the associations for endometriosis and IBS in the general population and to compare gastrointestinal symptoms between endometriosis and IBS.

Metod: Women from the Malmö Offspring Study with information about diagnoses from the National Board of Health and Welfare were included. They answered a questionnaire about lifestyle habits, medical and drug history, and self-reported IBS. The visual analog scale for IBS was used to estimate gastrointestinal symptoms the past 2 weeks. Endometriosis diagnosis and self-reported IBS were used as dependent variables to study the associations with age, body mass index (BMI), education, occupation, marital status, smoking, alcohol habits, and physical activity using logistic regression. Mann-Whitney U Test or Kruskal-Wallis test were used to calculate differences in symptoms between groups.

Resultat: Of the 2,200 women with information from medical records, 72 participants had endometriosis; 21 (29.2 %) with self-reported IBS. Of the 1,915 women who answered the questionnaire, 436 (22.8 %) had self-reported IBS. Endometriosis was associated with IBS (p=0.029), age 50–59 years (p=0.003), age ≥ 60 years (p=0.010), sick leave (p=0.033), and former smoking (p=0.020), and inversed associated with BMI (p=0.031). IBS was associated with endometriosis (p=0.041) and sick leave (p=0.010), with a tendency to association with smoking (p=0.071). When excluding participants using IBS-associated drugs, the condition was associated with current smoking (p=0.033) and inversely associated with age 50–59 years (p=0.015). No significant differences in gastrointestinal symptoms was observed between endometriosis and IBS.

Slutsats: There was an association between endometriosis and IBS, without any differences in gastrointestinal symptoms. Both IBS and endometriosis were associated with smoking and sick leave. If the associations reflect causality or depend on common risk factors and pathogenesis remains to be determined.

P.24

Exploring small intestinal permeability across multiple study cohorts: Associations between the L/R ratio and I-FABP.

Funktionella mag-tarmsjukdomar och nutrition
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Bakgrund: Intestinal permeability is one of the key measures of intestinal homeostasis, and an abnormal intestinal permeability has been related to several gastrointestinal and non-gastrointestinal disorders. One of the preferred methods to assess in vivo small intestinal permeability is the urinary lactulose/rhamnose excretion ratio (L/R ratio). However, it is a challenging method for both participants and researchers. As an increased intestinal permeability can result from epithelial cell damage, concentra-

tions of intestinal fatty acid-binding protein (I-FABP) could serve as a potential surrogate marker to assess small intestinal permeability measured as the L/R ratio.

Metod: Data of this study is derived from seven different studies. It is comprised of cross-sectional data (primarily collected at the study baseline) from a total of 449 (of which 255 female) participants, including: 59 (30) healthy volunteers, 41 (11) endurance-trained subjects, 74 (49) elderly adults, 73 (60) obese individuals, 94 (65) patients diagnosed with IBS and 99 (40) subjects who underwent an intestinal barrier challenge (data collected post-challenge). Normality of the data sets was tested with Shapiro-Wilk test. Data was analysed using two-tailed Spearman's rank-order correlation.

Resultat: Although weak, we found a significant positive correlation between L/R ratio and I-FABP (r=0.137;p=0.005) when combining data from all 449 participants; slightly pronounced among male subjects (r=0.225;p=0.002). Interestingly, the correlation among the elderly subjects pointed in the opposite direction (r=-0.304;p=0.009). An analysis of the data set excluding the elderly cohort strengthened the positive correlation (r=0.224;p=0.00002); especially in the male cohort (r=0.328;p=0.00002). In females, however, there was no correlation under any of the above-mentioned conditions.

Slutsats: I-FABP may be a suitable surrogate marker for the L/R ratio to assess intestinal permeability in younger male participants. However, due to the correlational dependence on age and sex, we would not recommend using it instead of the L/R ratio in mixed cohorts.

*shared first authorship, #shared last authorship

P.25

Gastrointestinal symptom burden in postural orthostatic tachycardia syndrome (POTS).

Funktionella mag-tarmsjukdomar och nutrition
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Bakgrund: POTS is a disorder of cardiovascular autonomic dysfunction, characterized by excessive heart rate (HR) increase and orthostatic intolerance upon standing. The pathophysiological mechanisms are largely unknown, but probably heterogenic. Gastrointestinal (GI) symptoms are common in POTS. The aim of this study was to explore GI-symptoms in a Swedish POTS-cohort, and to investigate whether the orthostatic HR response correlates with GI-symptoms.

Metod: To this cross-sectional study, we included 43 patients with POTS (93 % female, median age 30.6 years) and 74 healthy controls (HC) (78 % female, median age 35.6 years), who completed a questionnaire including the IBS severity scoring system (IBS-SSS) with extraintestinal symptoms, and the visual analog scale for IBS (VAS-IBS). The patients were previously examined by tilt test (2010-2021), including monitoring of blood pressure and HR at supine position and after 1, 3 and 10 minutes in standing. Also, the maximum HR was measured. ΔHR was calculated for the HR at each time point minus HR at supine position. All variables on the IBS-SSS and VAS-IBS-scale were compared with Spearman's correlation test to ΔHR.

Resultat: In patients with POTS, all variables on the IBS-SSS and VAS-IBS were significantly higher than in HC (figure 1). The median total-IBS-SSS was 213 (IQR 135-319) in POTS. There was a negative correlation between ΔHRmax and abdominal pain (η2=-0.406, p=0.007) and ΔHR_{max} and bloating (η2=-0.329, p=0.034). The same tendency was seen at $\Delta HR10_{min}$ (p=0.054 and 0.024 respectively). No positive correlations were found between ΔHR and any GI-symptom and no correlations were found between ΔHR and extraintestinal symptoms.

Slutsats: This study confirms that GI-symptoms are widespread in POTS, equivalent to moderate IBS. More orthostatic HR increase seems to be associated with less severe GI-symptoms in POTS, however there was a large interindividual variability in GI-symptoms in POTS. Our findings may reflect the heterogeneity and possibly different underlying pathophysiological mechanisms.

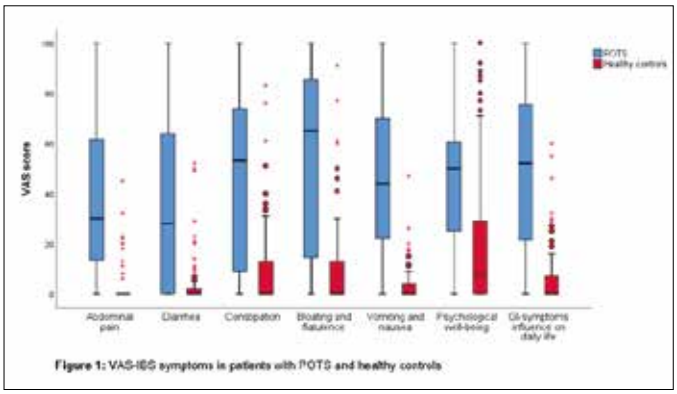

Figure 1: VAS-IBS symptoms in patients with POTS and healthy controls

P.26

Graviditet vid svår tarmsvikt. Användning av teduglutid under amning.

Funktionella mag-tarmsjukdomar och nutrition
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Bakgrund: Vid tarmsvikt (intestinal failure, IF) med kronisk parenteral nutrition (PN) finns risk för intestinal failure associated liver disease (IFALD). Graviditet innebär risk för graviditetskolestas, acute fatty liver of pregnancy eller HELP syndrom. Kronisk PN måste anpassas till de krav som graviditeten ställer (1). Teduglutid är en GLP-2 analog som inducerar intestinal hyperplasi och bättre absorption vid IF. Erfarenheter av teduglutid vid graviditet och amning saknas. Detta är den första beskrivna användningen av teduglutid under amning.

Metod: Graviditetsönskan förelåg hos en då 33 årig kvinna som drabbats av tarmischemi orsakad av strangulering, pga en medfödd malrotation av tunntarmen, under graviditet i vecka 16. Barnet förlorades. Hög jejunostomi med ca 40 cm jejunum kvar, ascendostomi och gastrostomi anlades. Stora stomiflöden och leverpåverkan. Efter 10 månader anastomos av jejunum till colon ascendens, strikturoplastik av jejunala strikturer och avveckling av gastrostomin. Leverprover normaliserades och PN kunde minskas betydligt. Informationssökning avseende teduglutid, graviditet och amning vid IF samt biologiska effekter av GLP-2 gjordes.

Resultat: Gravid 11 månader efter reanastomoseringen. PN styrdes av förväntat behov, viktutveckling och obstetriskt ultraljudsfynd. Normalt graviditetsförlopp. Förlöst med akut kejsarsnitt. En månad efter avvecklad amning insattes teduglutid med god effekt, och utsattes efter ca ett års behandling pga graviditetsönskan. Gravid 1.5 år senare. Normalt graviditetsförlopp. Förlöst med kejsarsnitt. Modest transaminasstegring i båda graviditeternas slutskeden, vilken snabbt normaliserades efter partus. Påbörjade teduglutidbehandling 1 månad efter andra förlossningen och ammade ytterligare 4 månader under teduglutidbehandling och fortsätter därefter. PN stöd tidvis helt utsatt. Informationssökning konfirmerar att GLP-2s effekter är höggradigt tarmspecifika. Studier på gris visar avsaknad av GLP-2 i fostrets blod fram till sent skede av graviditeten (2).

Slutsats: Teduglutid kunde användas med god effekt under amning. Erfarenheter saknas under graviditet. Kända fakta om GLP-2s biologi ger inte särskilda skäl att befara skadliga effekter. Ingen kliniskt signifikant leverpåverkan sågs under graviditeterna.

P.27

High FODMAP diet induces gastrointestinal symptoms in children with Hirschsprung disease.

Funktionella mag-tarmsjukdomar och nutrition

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Bakgrund: Hirschsprung disease (HD) is a congenital bowel disorder requiring surgical resection. Most children with HD experience post-operative gastrointestinal (GI) symptoms. According to the newest HD-guidelines, dietary modifications should be included in bowel management programs. However, evidence-based knowledge about the specific dietary treatment to recommend in HD is lacking. The aim was to investigate self-reported dietary effects on GI symptoms in children with HD.

Metod: This was an observational cross-sectional study using a validated self-reporting questionnaire. All children with HD 1-18 years old (n=92) treated at our national HD-centre were invited to participate. Descriptive data were presented in median (range) and n [%].

Resultat: In total, 71 children with HD participated, median aged 6 (1-16) years. Reporting diet to induce GI symptoms did not differ between children with long aganglionosis versus rectosigmoid extension (12/13 [92 %] vs 43/58 [74 %]; p=0.272) or if they adjusted diet to improve GI symptoms (9/13 [69 %] vs 40/58 [69 %]; p=1.000). In median 7 (0-66) food items per child were reported to induce GI effects. The most frequently reported were milk, banana and corn, reported by 37 %, 34 % and 34 % respectively. Of the ten most frequently reported food items to induce GI effects, nine food items have a high content of Fermentable Oligosaccharides, Disaccharides, Monosaccharides and Polyols (FODMAPs). (Figure 1)

Slutsats: A majority of children with HD report diet to induce GI effects and impact GI symptoms, no matter extension of aganglionosis resected. Food items reported to induce GI effects are high in FODMAPs. The importance of diet in HD needs to be further investigated to support self-management and optimise bowel function. The findings indicate that a low FODMAP-diet might be a treatment alternative also for children with HD.

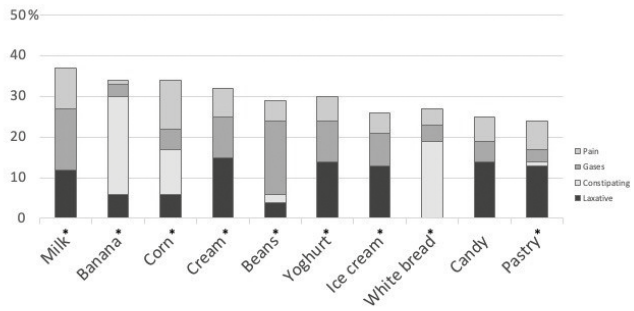

Figure 1. Frequencies of the ten most commonly reported food items to induce gastrointestinal effects, and their specific effects, reported by children with Hirschsprung disease 1-18 years old (n=71) using the Diet and Bowel function questionnaire. *Food items with a high content of Fermentable Oligosaccharides, Disaccharides, Monosaccharides And Polyols (FODMAPs)

P.28

Quantitative evaluation of the enteric nervous system in health and disease via x-ray phase-contrast tomography.

Funktionella mag-tarmsjukdomar och nutrition

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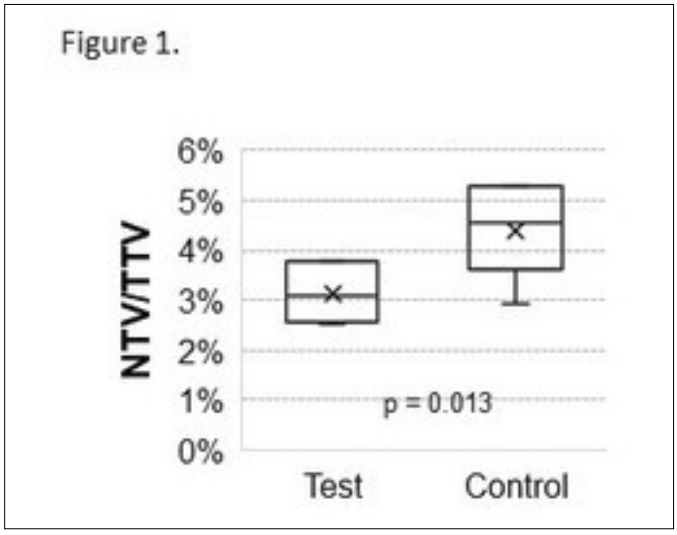
Bakgrund: The enteric nervous system (ENS) is situated deep in the intestinal wall. Full-thickness biopsies may be used to assess damage to the neurons, i.e., enteric neuropathy. The ENS is difficult to examine in conventional histological sections of 3-5 µm, due to the complex spatial organization and the large size of the neurons. The aim of the present study was to assess the volume and thickness of the ENS in human ileum full-thickness biopsies using X-ray phase-contrast micro-computed tomography.

Metod: Full-thickness ileum biopsies from five controls, obtained from healthy resection border after removal of malignant tumors, and six patients clinically diagnosed with gastrointestinal dysmotility and neuropathy were included. Punch biopsies of 1-mm diameter (up to 1 cm in length), centered on the myenteric plexus, were extracted from the paraffin blocks and placed into a polyimide tube and subsequently scanned with x-ray phase-contrast micro-CT. Quantitative volumetric analysis was performed from the reconstructed data.

Resultat: The architecture of both ganglia and fascicles was well visible and could be followed through the whole sample length. The volume and thickness of the neural tissue could be determined in 3D in all samples. The neural tissue volume (NTV)/total tissue volume (TTV) was higher in controls than in patients with enteric neuropathy (p=0.013) (Figure 1). The patient with the longest disease duration had the lowest ratio overall. The older controls had lower ratio than the younger controls.

Slutsats: 3D analysis may be used to determine the thickness and volume of the ENS. The assessment can be performed in an objective, standardized way, to ensure reproducibility and comparison between health and disease. Further evaluation is needed to examine the role of this method in the diagnosis of enteric neuropathy.



P.29

Symptoms of avoidant/restrictive food intake disorder (ARFID) and other eating disorders in adults in the general population with bowel symptoms.

Funktionella mag-tarmsjukdomar och nutrition

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Bakgrund: Disordered eating, including ARFID, is reported to be common in disorders of gut-brain interaction (DGBI). In this study, we aimed to identify symptoms compatible with disordered eating, including ARFID, in a large population-based cohort with bowel symptoms.

Metod: An internet-based survey was completed by Swedish adults aged 18-70, who met minimum Rome IV diagnostic symptom frequency thresholds for at least one bowel symptom used to diagnose a functional bowel disorder (FBD). The survey included self-report measures for non-gastrointestinal (GI) somatic symptoms (PHQ-12), psychological distress (PHQ-4), quality of life (QoL) (EQ-5D), bowel and gastroduodenal DGBI (Rome IV Diagnostic Questionnaire), overall GI symptom severity (IBS-SSS), BMI, symptoms of ARFID (NIAS), and screening for anorexia and bulimia (SCOFF). Validated cutoffs for NIAS (≥10 Picky eating; ≥ 9 Appetite; ≥10 Fear) and SCOFF (total score ≥2) were used to detect ARFID and other eating disorders, respectively. Hence, we identified three groups: 1) ARFID (≥ cutoff for any NIAS subscale and SCOFF <2 (i.e. no other eating disorder); 2) eating disorder (SCOFF ≥2); 3) no disordered eating.

Resultat: In total, 825 adults (age 34.0±15.0 years (mean ± SD); 66.2 % females). Disordered eating was common in the entire group of adults with bowel symptoms, with 13.1 % meeting the criteria for ARFID, and 28.6 % had symptoms compatible with an eating disorder. Both groups with disordered eating consisted of more females, were more likely to have comorbid functional dyspepsia, reported more severe non-GI somatic symptoms, anxiety, depression, and GI symptoms, as well as lower QoL compared to the group with no disordered eating (**Table**).

Slutsats: Symptoms of ARFID and other eating disorders are very common in adults with bowel symptoms. Presence of disordered eating is associated with comorbid functional dyspepsia, more severe GI, non-GI, and psychological symptoms, as well as reduced quality of life.

Table. Demographics and symptoms in adults with bowel symptoms grouped by presence or absence of disordered eating.

	No disordered eating (n=481)	ARFID (n=108)	Eating disorder (n=236)	P
Female sex, %	60.1*	75.9§	74.2#	<0.001
Age (years)	40.2 ± 15.4	36.8 ± 14.4§	31.8 ± 12.5#	<0.001
BMI (kg/m²)	26.5 ± 6.0* (3.3% BMI <18.5)	24.5 ± 6.7§ (12.0% BMI <18.5)	27.3 ± 6.2 (2.1% BMI <18.5)	<0.001
Functional bowel disorder, %	60.5	62.0§	75.8#	<0.001
Functional dyspepsia, %	7.7*	26.9	26.3#	<0.001
Non-GI somatic symptoms (PHQ-12)	7.5 ± 3.8*	9.4 ± 4.7	10.5 ± 4.5#	<0.001
Anxiety (PHQ-4)	1.5 ± 1.7*	2.4 ± 2.1	2.9 ± 1.9#	<0.001
Depressive symptoms (PHQ-4)	1.5 ± 1.6*	2.5 ± 2.0	3.0 ± 2.0#	<0.001
Overall GI symptom severity (IBS-SSS)	90.3 ± 99.8*	132.0 ± 116.1	156.5 ± 111.8#	<0.001
Quality of life (EQ-5D)	0.89 ± 0.11*	0.83 ± 0.16	0.82 ± 0.14#	<0.001

Data are mean ± SD or proportions (%) and groups were compared by Chi-square tests and ANOVA with pairwise comparisons (Bonferroni correction).
* P<0.05, No disordered eating vs. ARFID;
§ P<0.05, ARFID vs. eating disorder;
# P<0.05, No disordered eating vs. eating disorder.

Gallvägs- och pankreas-sjukdomar

P.30

A deep learning based approach to assess tumor characteristics in patients with pancreatic ductal adenocarcinoma.

Gallvägs- och pankreas-sjukdomar

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Bakgrund: Pankreascancer är en förödande sjukdom med en dyster prognos. Sjukdomen beräknas för närvarande att bli den näst mest farliga cancerformen vid år 2030. Detta kan bl.a. tillskrivas den nuvarande bristen på tillgängliga biomarkörer, en stark ovilja att svara på nuvarande behandlingar och viktigast av allt, att man i en övervägande majoritet av fallen upptäcker sjukdomen i ett sent och avancerat stadium. I detta projekt utforskade vi möjligheterna med artificiell intelligens när det gäller analys av medicinska bilder och hur detta kan användas för att upptäcka pankreascancer på CT-bilder i venös fas.

Metod: Vi vidareutvecklade en äldre hybridmodell som består av både konvolutionella lager och en transformatorkodare. Vi använde bilddata (n=600) från tre offentligt tillgängliga dataset (MSD, CPTAC-PDA och NIH Pancreas CT) för att träna och testa vår modell. Före träningen uteslöts alla patienter som hade blivit radiologiskt bedömda som IPMN/PanNETs/unequivocal/missing labels. Det slutliga antalet patienter (n=354) delades upp i träning, validering och testning som (165, 29, 160).

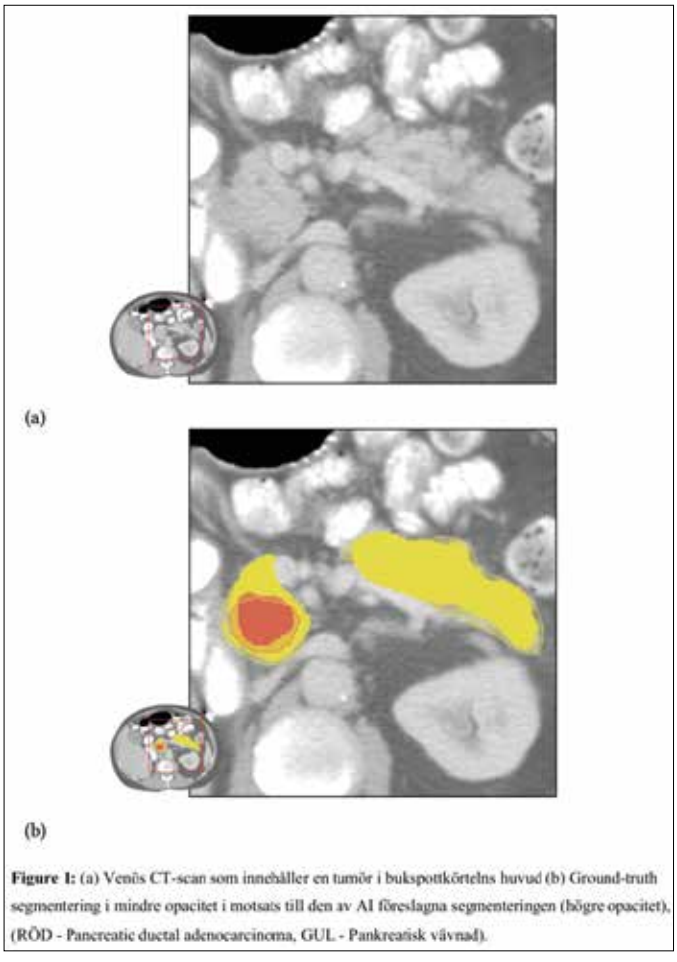

Figure 1: (a) Venös CT-scan som innehåller en tumör i bukspottkörtelns huvud (b) Ground-truth segmentering i mindre opacitet i motsats till den av AI föreslagna segmenteringen (högre opacitet), (RÖD - Pancreatic ductal adenocarcinoma, GUL - Pankreatisk vävnad).

Resultat: Vår modell uppnådde en sensitivitet på 95 % och specificitet på 90 % för pankreascancer (95 % CI 0.87-0.96, p=0.3865 & p=<2e-16 för Acc > NIR). Den uppvisade också ett genomsnittligt förgrundsbaserat dice score på 0.784 för normal bukspottkörtelvävnad samt 0.644 för pankreascancer.

Slutsats: Vi har demonstrerat att hybridbaserade AI-modeller bestående av både konvolutionella element och transformatorer uppvisar potential när det gäller detektion och volymetrisk bedömning av bukspottkörtelcancer.

P.31

Applying an automated image-based algorithm to measuring cancer spheroid viability in a high throughput setting.

Gallvägs- och pankreas-sjukdomar

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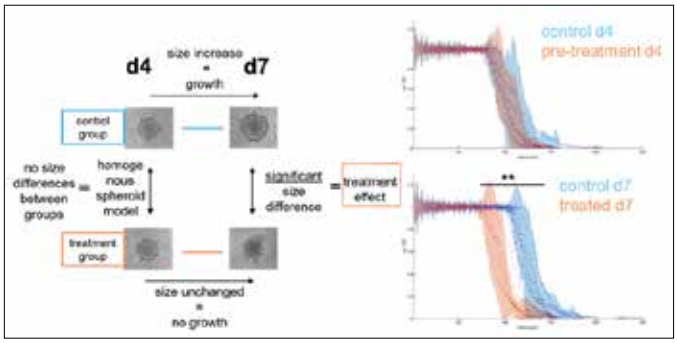
Bakgrund: Pancreatic cancer remains a particularly lethal type of cancer despite growing efforts in medical research in the past decades. Research focus expanded from targeting cancer cells exclusively to cancer cells and stroma. This shift delivered new potential targets for new treatments, since previously proposed treatments have repeatedly failed to reach clinical practice. In part this is due to many drug screens being carried out with too simple cell models unfit to represent this type of cancer adequately. We therefore developed a 3D tumor-stromal-model. We will focus on the altered metabolic mode of PDAC tumors which consume high amounts of glucose and produce lactate, part of the syndrome known as Warburg effect. We theorize that interfering with this wasteful mode of metabolism will leave cancer cells more vulnerable. The use of established viability markers using ATP as a readout seemed potentially compromised to us, because the ATP amount per cell might not be constant after treatment. Instead, we developed an image-based algorithm using bright-field images to deduce the viability of spheroids.

Metod: We use a reproducible, high-throughput-screen-ready 3D-coculture-cell model: heterospheroids of Panc1 and human pancreatic stellate cells (hPSCs) which enables modeling the crosstalk between both cell types. The phenotypic analysis parameters are spheroid size and shape, optical tissue density and the degree of tissue integrity. Segmentation is fully automated, using contrast and shape filtering functions and separately recognizing (and excluding) noise and commonly found artifacts.

Resultat: We show this algorithm can detect changes in cell viability with different types of spheroids responding to treatment.

Slutsats: This image-based classification of spheroids is a valid alternative for cell viability measurements.



P.32

Exocrine and endocrine insufficiency in autoimmune pancreatitis: a matter of treatment or time?

Gallvägs- och pankreas-sjukdomar

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Bakgrund: Autoimmune pancreatitis (AIP) is a specific form of chronic pancreatitis with a high relapse rate after treatment. AIP patients are burdened with an increased risk of longterm sequelae such as exocrine and endocrine insufficiency. Our objective was to investigate if pharmacological treatment affects both endocrine and exocrine pancreatic function in patients with AIP.

Metod: We included 59 patients with definite AIP in the final analysis. Screening for diabetes mellitus (DM) and pancreatic exocrine insufficiency (PEI) was performed at the time of AIP diagnosis and during follow-up.

Resultat: There were 40 (67.8 %) males and 19 (32.2%) females; median age at diagnosis was 65 years. Median follow-up after the diagnosis of AIP was 62 months. PEI prevalence at diagnosis was 72.7 % and was 63.5 % at follow-up. The cumulative incidence of DM was 17.9 %, with a prevalence of DM at diagnosis of 32.8%. No strong association was found between pharmacological treatment and occurrence of PEI and DM. Univariate analysis identified potential risk factors for PEI (other organ involvement and biliary stenting) and for DM (overweight, blue-collar profession, smoking, weight loss or obstructive jaundice as presenting symptoms, imaging showing diffuse pancreatic enlargement, smoking). In a multivariate analysis, only obstructive jaundice was identified as a risk factor for DM both at diagnosis and during follow-up.

Slutsats: Our results suggest that the prevalence of endocrine and exocrine insufficiency in AIP is high at diagnosis with an additional risk of PEI and DM during follow-up despite pharmacological treatment.

P.33

Non-alcoholic fatty pancreas disease and pancreatic exocrine insufficiency: pilot study and systematic review.

Gallvägs- och pankreas-sjukdomar

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Bakgrund: The prevalence of non-alcoholic fatty pancreas disease (NAFPD) is estimated as 2–46 % among patients without known pancreatic diseases. An association between NAFPD and non-alcoholic fatty liver disease (NAFLD) has been proposed, as well as an association between NAFPD and pancreatic exocrine insufficiency (PEI).

Metod: Patients with histologically confirmed NAFLD were included in the study. The control group consisted of individuals included in a surveillance screening program for pancreatic cancer. Magnetic resonance imaging (MRI) of the pancreas was performed in all patients and fat measurement was made using 2-point Dixon imaging. Fecal elastase-1 (FE-1) was performed to evaluate pancreatic exocrine function. Additionally, a 13C-mixed triglyceride breath test (^{13}C-MTG-BT) was performed in patients with FE-1 <200 µg/g. Finally, 24 patients were included in the study: 13 with NAFLD and 11 from the control group.

Resultat: Imaging signs of NAFPD were present in 17 (71 %) patients; 11 (85 %) from the NAFLD group and 6 (55 %) from the control group. FE-1 <200 µg/g was found in six (25 %) patients (four in the NAFLD group and two in the control group); however, none of them had clinical symptoms of PEI. Therefore, in five out of six patients with low FE-1, a 13C-MTG-BT was performed, showing normal results (>29 %) in all tested patients. Furthermore, the serum nutritional panel was normal in all patients with low FE-1. A systematic review identified five studies relevant to the topic.

Slutsats: NAFPD was found in 85 % of patients with NAFLD and in 55 % of control patients. We did not diagnose PEI in either group. A literature review showed PEI in 9–56 % of patients with NAFPD.

P.34

Painless chronic pancreatitis: experiences from a high-volume center.

Gallvägs- och pankreas-sjukdomar

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Bakgrund: Although abdominal pain is the most prevalent and disabling symptom in patients with chronic pancreatitis (CP), there are also patients who have painless CP.

Metod: We performed a retrospective analysis of patients with a diagnosis of CP. A total of 279 patients with definite CP with completed demographic and clinical data were included in the final analysis.

Resultat: There were 75 (26.9 %) patients with painless CP. These patients had a significantly higher mean age at diagnosis, 61.7 years, than the 52.5 years of patients with pain (p<0.001). Painless and painful CP had similar rates of diabetes mellitus (DM) (28.4 % vs. 31.6 %) and pancreatic exocrine insufficiency (PEI) (50.0 % vs. 52.3 %). Painless CP had lower rates of alcoholic etiology, 36.0 %, than the 52.5 % in painful CP (p<0.05). Patients older than 55 at the time of CP diagnosis were associated with painless CP with an adjusted odds ratio (aOR) of 3.27 [95 % confidence interval (CI): 1.62–6.60]. Alcoholic etiologies were not associated with painless CP, aOR of 0.51 (95 % CI: 0.25–0.91).

Slutsats: Patients with painless CP had a significantly higher mean age than patients with painful CP and increased aOR for those older than 55 at CP diagnosis. Painless and painful CP patients had similar rates of DM and PEI, confirming the necessity of routine follow up in all patients with CP.

P.35

Post-pancreatitis diabetes mellitus is common in chronic pancreatitis and is associated with adverse outcomes.

Gallvägs- och pankreas-sjukdomar
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Bakgrund: Post-pancreatitis diabetes mellitus (PPDM) is a common consequence, of chronic pancreatitis (CP). We aimed to determine the incidence and predictors of, PPDM after CP onset, as well as complications and antidiabetic therapy requirements, in a high-volume tertiary center.

Metod: We did a cohort study with retrospectively collected data from patients, with definite CP seen at the Karolinska University Hospital between January 1999, and December 2020. Cause-specific Cox regression analysis was used to assess, PPDM predictors. To estimate risk of complications and need for therapy the Fine-, Gray subdistribution hazard model was employed, accounting for death as a, competing risk.

Resultat: We identified 481 patients with CP. The cumulative incidence of PPDM, was 5.1 %, 13.2 %, 27.5 % and 38.9 % at 5, 10, 15 and 20 years, respectively., Compared to CP patients without diabetes, patients with PPDM were predominantly, male (55 % vs. 75 %), had more frequently alcoholic etiology (44 % vs. 62 %), and previous acute pancreatitis. The only independent predictor of PPDM was, presence of pancreatic calcifications (aHR = 2.45, 95 % CI 1.30–4.63). Patients with, PPDM had higher rates of microangiopathy (aSHR = 1.59, 95 % CI 1.02–2.52) and, infection (aSHR = 4.53, 95 % CI 2.60–9.09) compared to CP patients who had type 2, diabetes (T2DM). The rate of insulin use was three-fold higher, whereas metformin, use rate was two-fold higher in the same comparison.

Slutsats: Patients with PPDM have a higher frequency of clinically significant, complications and were more commonly prescribed insulin and metformin, suggesting, a more aggressive phenotype than that of T2DM. Greater PPDM awareness, is needed to optimize disease management.

P.36

The clinical utility of soluble serum biomarkers in autoimmune pancreatitis: a systematic review.

Gallvägs- och pankreas-sjukdomar
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Bakgrund: Autoimmune pancreatitis (AIP) is a rare etiological type of chronic pancreatitis. The clinical, and radiological presentation of AIP often resembles that of pancreatic cancer. Identifying noninvasive, markers for their early distinction is of utmost importance to avoid unnecessary surgery or, a delay in steroid therapy. Thus, this systematic review was conducted to revisit all current evidence, on the clinical utility of different serum biomarkers in diagnosing AIP, distinguishing AIP from, pancreatic cancer, and predicting disease course, steroid therapy response, and relapse.

Metod: A systematic review was performed for articles published up to August 2021 by searching electronic databases such as MEDLINE,Web of Science, and EMBASE.

Resultat: Among 5123 identified records, 92 studies were included in the qualitative synthesis. Apart from immunoglobulin (Ig) G4, which was by far the most studied biomarker, we identified autoantibodies against the following: lactoferrin, carboanhydrase II, plasminogen-binding protein, amylase- 2A, cationic (PRSS1) and anionic (PRSS2) trypsinogens, pancreatic secretory trypsin inhibitor (PSTI/SPINK1), and type IV collagen. The identified novel autoantigens were laminin 511, annexin A11, HSP-10, and prohibitin. Other biomarkers included cytokines, decreased complement levels, circulating immune complexes, N-glycan profile changes, aberrant miRNAs expression, decreased IgA and IgM levels, increased IgE levels and/or peripheral eosinophil count, and changes in apolipoprotein isoforms levels.

Slutsats: To our knowledge, this is the first systematic review that addresses biomarkers in, AIP. Evolving research has recognized numerous biomarkers that might help clarify the, pathophysiological mechanisms of AIP. However, the specificity and sensitivity of these, markers seem to be insufficient to serve as distinctive AIP evidence. Despite limited, sensitivity, IgG4 remains the best available marker, with levels of >280 mg/dL as the most, reliable AIP indicator. In addition to individual markers, panels of different markers appear, as promising tools for early noninvasive differentiation between AIP and pancreatic cancer.

P.37

The crosstalk analysis between mPSCs and Panc1 in a 3D coculture model regarding the role of CCN1.

Gallvägs- och pankreas-sjukdomar
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Bakgrund: Pancreatic ductal adenocarcinoma is a deadly disease that is almost completely resistant to conventional chemo- and radiation therapy. A major reason for this resistance seems to lie in the dense desmoplastic stroma, which includes abundant heterogeneous cancer-associated fibroblast (CAF) populations. Previously, we used a 3D heterospecies heterospheroid co-culture model to examine the crosstalk between human pancreatic tumor Panc1 and mouse pancreatic stellate cells (mPSCs) by global expression profiling. Since we found that CCN1 was strongly upregulated in Panc1 cells by coculture, we decided to study the role of CCN1 by CRISPR-Cas9 knockout technology.

Metod: CCN1-KO cell lines were generated by CRISPRCas9 and verified with western blot. Viability of cells grown in 2D and 3D to Gemcitabine, Paclitaxel and SN38 was confirmed with CelltiterGlo3D and Apoptosense CK18. RT-PCR and Western blotting was performed on selected genes and proteins for phenotypical characterization of the cells.

Resultat: Panc1 cells lacking CCN1 were more de-differentiated and less sensitive to gemcitabine, the latter due to the lower expression of gemcitabine transporting and metabolizing genes., , Based on the previous observation of increased mRNA expression of TGFB and the LPA generating enzyme (Enpp2) in heterospheroids, we treated cells with TGFB1 and lysophosphatidic acid. These stimuli not only upregulated the CCN1 expression in Panc1 cells but also shifted mPSCs to a more myCAF-like phenotype.

Slutsats: CCN1 renders cancer cells more sensitive to gemcitabine. The identification of pathways shifting CAFs from immunosuppressive iCAFs to more tumor suppressive myofibroblastic myCAFs may represent a new therapeutic opportunity for PDAC intervention.

P.38

The impact of metformin, insulin, and diabetes on the progression of pancreatic neuroendocrine tumours (PNETs).

Gallvägs- och pankreas-sjukdomar

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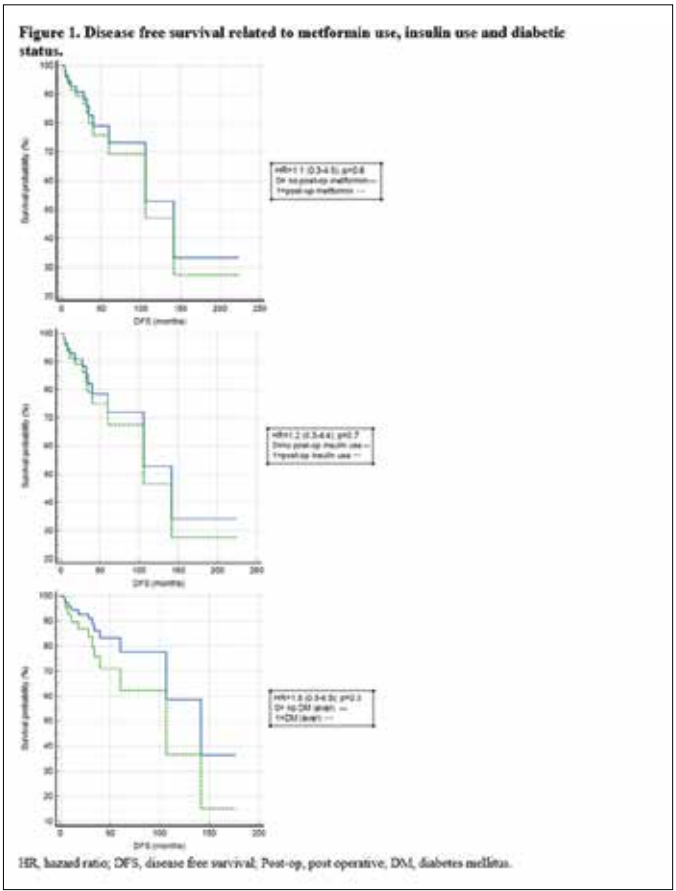
Bakgrund: Little is known about prognostic factors for the outcome of pancreatic neuroendocrine tumours (PNETs) but previous studies suggested a potential positive effect of metformin use, and a potential negative effect of diabetes and insulin use. Most of previous evidence includes heterogeneous cohorts, a factor that might have impacted the interpretation of results in terms of prognosis. Our aim is to investigate the role of metformin, insulin, and diabetes in the progression of operated PNETs in a high-volume centre in Sweden.

Metod: A single-centre, retrospective cohort study was conducted at Umeå University Hospital, Umeå Sweden. We included consecutive patients with PNETs operated between 2001 and 2020. All diagnosis were histological confirmed. We collected demographic and exposures. We evaluated continuous variables with t-test or Mann Whittney and categorical variables with chi-square test. Potential factors impacting the overall and progression free survival were analysed through an adjusted univariable cox regression model.

Resultat: Overall, 54 patients were included, 61.1 % males, mean age 66 years; 22 of which (44.8 %) with diabetes, mean duration of diabetes 48 months (23-149). Metformin was used by 11 patients (21.2%), insulin by 13 patients (25.5 %). Metformin users *vs* non-users displayed non significantly different mortality rates (0 % *vs* 22%, p=0.09), non-significantly different disease specific mortality (0 % *vs* 5.9%, p=0.4), and non-significantly different post-operative recurrence (27.3 % *vs* 22.0 %, p=0.7). Likewise, insulin users vs non-users displayed non significantly different mortality rates (23.1 % *vs* 13.2 %, p=0.4), non-significantly different disease specific mortality (0 % *vs* 5.7 %, p=0.4), and non-significantly different post operative recurrence (30.8 % *vs* 21.1 %, p=0.4). Overall survival was not affected by insulin use (HR=1.5, 0.3-7.2 95 % CI, p=0.5) nor by the presence of diabetes (HR=0.9, 95 % CI 0.2-4.1, p=0.9).

Slutsats: This study could not confirm any significant association between diabetes, the use of metformin, or insulin and the progression of operated PNETs.



P.39

Unraveling the relationship between autoimmune pancreatitis type 2 and inflammatory bowel disease.

Gallvägs- och pankreas-sjukdomar

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Bakgrund: The relationship between autoimmune pancreatitis (AIP) type 2 and inflammatory bowel disease (IBD) has been established and previously described within International Consensus Diagnostic Criteria. However, it is unknown if the presence of IBD changes the natural disease course of AIP type 2. Our aim was to investigate the association between AIP type 2 and IBD as well as to systematically summarize all the existing evidence in the literature.

Metod: Electronic medical record analysis was conducted in two centers (in Stockholm, Sweden, and Milan, Italy; records dated between January 2001 and June 2021). Additionally, we conducted a systematic review of the literature.

Resultat: A total of 35 patients (18 females, 51.4 %) fulfilled the diagnostic criteria of AIP type 2 and were included in the study. A diagnosis of IBD was established in 29 patients (82.8 %), ulcerative colitis in 17 (58.6 %) and Crohn's disease in 11 (37.9 %). Median follow-up was 54 months. AIP patients with IBD commonly presented with abdominal pain and/or acute pancreatitis at diagnosis, the latter was prevailing in concomitant and later IBD onset. These patients more frequently used steroids, but, there were no differences in relapse rates. Concomitant onset of IBD was associated with the development of diabetes mellitus. There were no cases of colon or pancreatic malignancy during follow-up. In our systematic analysis, a total of 693 AIP type 2 patients were included from 24 single-center retrospective studies and 8 multicenter retrospective studies. A diagnosis of IBD was reported in 330 (47.8 %) patients. Relapse rate was 20.0 %.

Slutsats: Clinical and radiological remission of AIP type 2 was high, while the cumulative incidence of relapse is around 20 %. Our results show that concomitance of IBD imposes no obvious risk of a different disease course for AIP type 2.

Inflammatoriska tarmsjukdomar

P.40

A novel serum protein signature for pediatric IBD: A diagnostic modelling study using data from two independent inception cohorts.

Inflammatoriska tarmsjukdomar

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Bakgrund: A diagnostic delay is common in paediatric inflammatory bowel disease (PIBD) and is associated with impaired outcomes. Therefore, we aimed to identify and validate a diagnostic protein signature of PIBD in blood.

Metod: Using the Proximity Extension Assay technology (Olink Proteomics®), we assayed plasma proteins in an inception cohort of treatment-naïve paediatric patients referred to Uppsala University Children's Hospital, Sweden for suspected IBD and validated findings in an independent population-based paediatric inception cohort, i.e., the Norwegian IBSEN III cohort. Diagnosis was based on the ESPGHAN/Porto criteria. The false discovery rate approach was applied, and q-values were reported. Multivariable analyses and supervised machine learning were used to identify a diagnostic protein signature, and its performance was compared to clinically established biomarkers.

Resultat: The discovery cohort included 58 PIBD patients and 36 symptomatic controls without any discernible evidence of IBD, and the validation cohort 79 PIBD patients and 37 symptomatic controls. In total, 154 proteins were included in the final analysis. Univariable analyses identified 26 differentially regulated proteins for PIBD versus symptomatic controls in the discovery cohort (q<0.05), and 15 of these were validated in IBSEN III. Using regularized regression, we identified a diagnostic model of 31 proteins in the discovery cohort (area under the curve (AUC) = 0.87; 95 %CI:0.79-0.93). The relative contribution of each protein is shown in **Figure 1**. The diagnostic capacity of the signature (AUC=0.83; 95 %CI:0.75-0.90) outperformed high sensitivity C-reactive protein (hsCRP) (AUC=0.72; 95 %CI:0.63-0.82) in the validation cohort (p=0.01). Similar results were obtained from our random forest models. In children providing stool sample, the diagnostic capacity of the protein signature (AUC=0.81; 95 %CI:0.70-0.90) was slightly lower than faecal Calprotectin (FCP) (AUC=0.93; 95 %CI:0.86-0.98) (p=0.01).

Slutsats: We identified and validated a diagnostic protein signature for PIBD in blood that is superior to CRP and may have potential for clinical utility.

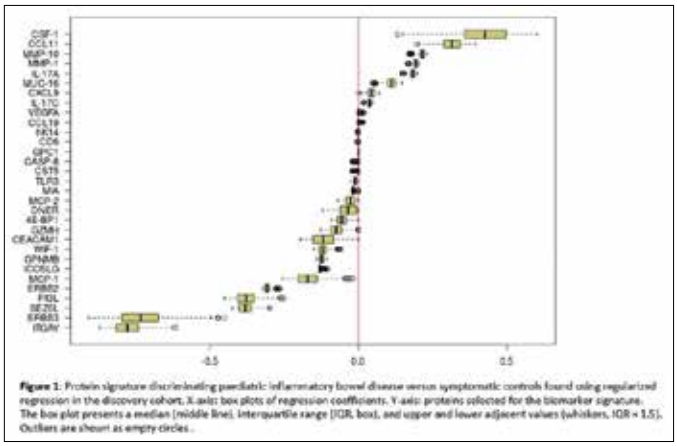

Figure 1. Protein signature discriminating paediatric inflammatory bowel disease versus symptomatic controls found using regularized regression in the discovery cohort. X-axis: box plots of regression coefficients. Y-axis: proteins selected for the biomarker signature. The box plot presents a median (middle line), interquartile range (IQR, box), and upper and lower adjacent values (whiskers, IQR × 1.5). Outliers are shown as empty circles.

P.41

Colonoscopy Surveillance of Patients with Ulcerative Colitis in Region Örebro County.

Inflammatoriska tarmsjukdomar

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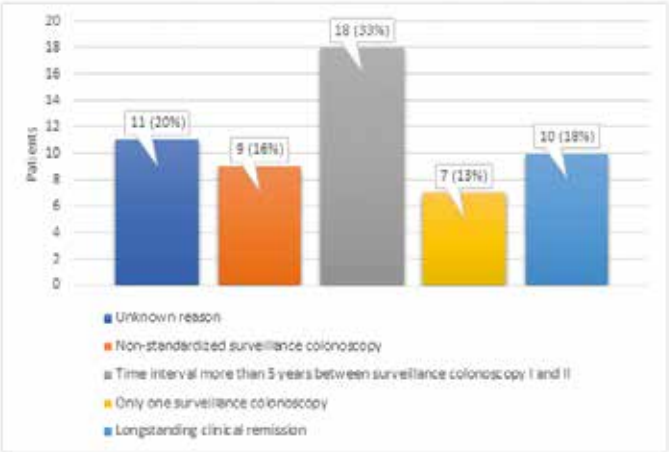
Bakgrund: Ulcerative colitis (UC) is a lifelong disease with chronic inflammation of the colorectal mucosa. Longstanding UC has been associated with an increased risk of colorectal cancer (CRC). Therefore, clinical guidelines worldwide recommend systematic colonoscopy surveillance. The aim of this study is to identify factors potentially responsible for loss of compliance to the recommended surveillance guidelines among UC patients.

Metod: A retrospective cohort study including 237 adult patients who had been diagnosed with extensive UC before 2008 and were eligible for colonoscopy surveillance between 2008-2020 in Region Örebro County in Sweden.



Resultat: Of 237 patients 182 (77 %) patients were considered as adequately surveyed. The majority of the patients who had not undergone surgery, 152 (82.2 %), were adequately surveyed, whereas only 30 (57.7 %) of 52 patients who had undergone subtotal colectomy were adequately surveyed (p<0.001). Endoscopic active inflammation was detected in 39 patients, of whom 23 (59 %) patients were adequately surveyed, whereas the majority of the patients in endoscopic remission, 159 (85.5 %), were adequately surveyed (p<0.001). In total, only 23 (9.7 %) patients had a co-diagnosis of primary sclerosing cholangitis (PSC). All patients with PSC were adequately surveyed (p=0.006).

Slutsats: Of 237 included patients 55 (23 %) patients failed to be surveyed according to the recommended surveillance guidelines. Subtotal colectomy and endoscopic active inflammation were confirmed to be potential factors resulting in loss of surveillance. On the contrary, a co-diagnosis of PSC was statistically confirmed to be associated with adherence to colonoscopy surveillance.

P.42

Comparative study of a Point-of-care test and an enzyme-linked immunosorbent assay (ELISA) for infliximab levels.

Inflammatoriska tarmsjukdomar

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Bakgrund: Point-of-care test (POCT) devices for measuring concentrations of anti-tumour necrosis (TNF) agents, such as infliximab (IFX), have recently been developed to provide rapid and user-friendly measurements. We aimed to compare the agreement between a POCT IFX assay (ProciseDx, San Diego, CA, USA) and the conventional in-house ELISA at Karolinska University Hospital, Sweden.

Metod: Adult patients with inflammatory bowel disease treated with infliximab at Örebro University Hospital were prospectively recruited between June and December 2021. IFX levels were consecutively measured as part of the clinical routine using the in-house ELISA. After obtaining written informed consent, additional blood samples were collected, and the serum was separated and stored as aliquots at -80°C. After the inclusion of all patients, IFX levels were measured in a single batch using the POCT. Agreement between the two assays was visualised with a Bland-Altman plot. On the Bland–Altman plot, a good agreement is reflected by a horizontal line near the mean difference of zero. The Pearson correlation coefficient was also calculated. Values below the lower limit of detection (LOD), i.e. <0.5 µg/mL for the in-house ELISA and <1.7 µg/mL for the POCT, were substituted with LOD/√2.

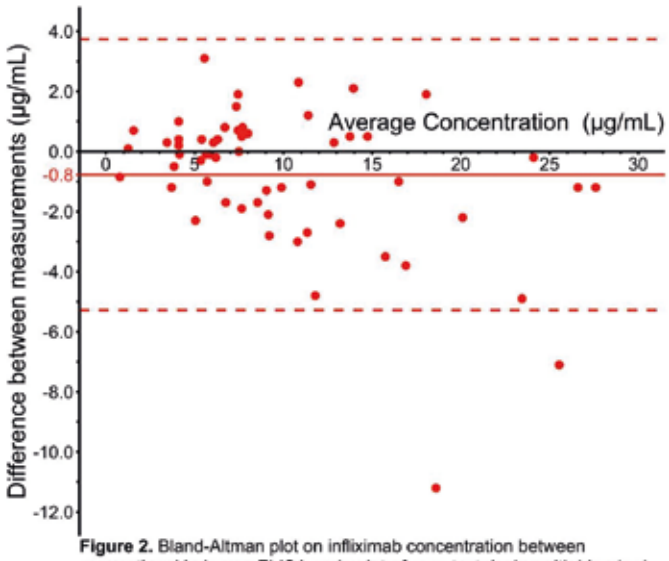

Figure 2. Bland-Altman plot on infliximab concentration between conventional in-house ELISA and point-of-care test device with bias (red line) and limits of agreement (dashed red lines).

Resultat: Sixty-one serum samples were collected and analysed. A significant correlation in IFX levels was observed when the POCT and the ELISA were compared (r=0.95, p<0.001). A Bland-Altman plot of all measurements is shown in Figure 1 and resulted in a bias of -0.77. Using the POCT, six measurements were below the LOD, and three of these were also below the LOD when the in-house ELISA was used.

Slutsats: The POCT showed no clinically relevant bias compared to the conventional ELISA but seemed to generate slightly higher IFX concentrations. However, the upper and lower limits of agreement in the Bland-Altman plot seemed clinically acceptable.

P.43

CT enterography performed with the novel HU-negative bowel filling agent Lumentin® 44 compared with MR enterography in patients with Crohn's disease.

Inflammatoriska tarmsjukdomar

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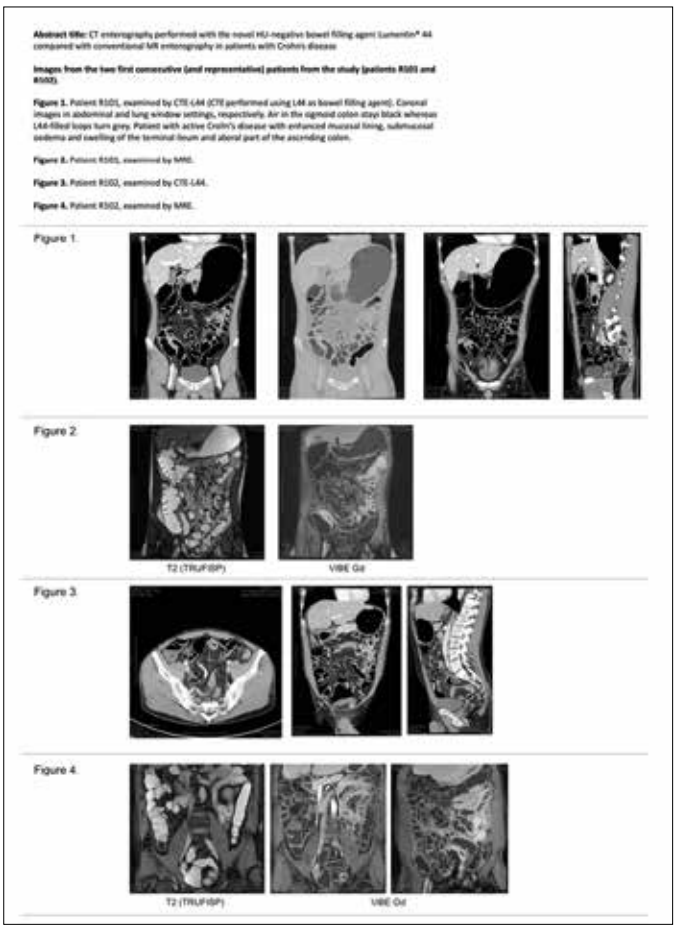
Bakgrund: Lumentin® 44 (L44) is a novel Hounsfield Unit (HU) negative bowel-filling agent. MR enterography (MRE) is considered the gold standard for examination of the small bowel in Crohn's disease (CD). The aim was to compare CT enterography (CTE) using L44 (CTE-L44), with MRE in CD patients.

Metod: Open-label, randomized, non-inferiority, within patient-controlled study. CD-patients underwent CTE-L44 and MRE (order randomized). Radiological Crohn's Disease Activity Score (RCDAS) comprising 18 items generating a maximum total score of 34, was recorded. For the primary endpoint, comparing RCDAS for CTE-L44 versus MRE, non-inferiority was defined as mean proportion of identical item-scores >80% (per protocol set, PPS; p<0.025). In a prespecified alternative non-inferiority analysis (ANIA), item-score match was defined as identical or higher by CTE-L44. Gastroenterologists scored clinical usefulness of CTE-L44 versus MRE reports (blinded).

Resultat: The PPS and full analysis set (FAS) comprised 49 and 54 patients, respectively. Mean (SD) proportion of identical RCDAS item-scores was 82.74 % (11.46 %), p=0.044, and 83.38 % (11.30 %), p=0.014, in the PPS and FAS, respectively. ANIA showed matches in 94.44 % (6.57 %), p<0.0001. Mean RCDAS was higher for CTE-L44 than MRE (5.82 versus 4.60; p<0.0003). Gastroenterologists found CTE-L44 and MRE equally clinically useful in 44.9 %, CTE-L44 more useful in 42.9 %, and MRE more useful in 12.2 % of patients. Adverse event rates were similar between the two examinations.

Slutsats: Although statistical significance for the primary endpoint was not achieved (due to CTE-L44 unexpectedly showing higher disease activity scores than MRE in combination with the primary endpoint design), the data suggest that CTE-L44 performs equally well or potentially better than MRE in detecting disease activity in CD patients; that CTE-L44 has a good safety profile; and that gastroenterologists find CTE-L44 clinically more useful than MRE,

Acknowledgements: Research nurses Ann Tornberg and Ida Kapusta.



Resultat: In total, 418 patients were included, 322 (48% females) with CD and 96 (46 % females) with UC. In 229 patients the UST concentration was analyzed at least once and never in the remaining 188 patients. In general, the UST serum concentrations were above 1 µg/ml. At 3 months follow-up, patients in remission had a significant higher concentration of UST compared to non-remitting patients. (Table 1) in the total cohort, as well as when analyzed separately in UC ad CD. There was no significant difference in UST concentrations at 6 months or later between patients in remission versus non-remission for either IBD diagnosis. Further, TDM was related to higher rates of remission at 3 months of follow-up.

Slutsats: In this study, early measurement of serum UST (≤3 months) correlated to the clinical response. Serum concentrations at later time points were similar in patients in remission and in patients with active disease. These results from a real-world setting might partly be explained by that serum concentrations were not taken in a systematic manner.

Table 1. Ustekinumab concentration

Follow-up time	Remisson ()	Non Remission ()	p-value
3 months	12,04 (5,77)	6,84 (4,79)	p < 0,05
6 months	3,29 (2,23)	2,80 (2,35)	p > 0,05
9 months	2,80 (2,56)	3,53 (2,26)	p > 0,05
12 months	2,99 (1,91)	2,85 (2,19)	p > 0,05
24 months	3,31 (2,21)	3,67 (2,53)	p > 0,05
36 months	2,92 (1,93)	4,43 (2,68)	p > 0,05
48 months	5,19 (2,88)	4,73 (2,86)	p > 0,05
60 months	No data	No data	NA

P.44

Early monitoring of ustekinumab concentration after induction is related to clinical remission in ulcerative colitis & Crohn`s disease-STOCUSTE study.

Inflammatoriska tarmsjukdomar

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Bakgrund: Ustekinumab (UST), an anti-interleukin-12/23 antibody, is used to treat moderate to severe inflammatory bowel disease (IBD). The STOCUSTE study includes IBD patients treated with UST at four teaching hospitals in Stockholm to provide long-term follow-up data. We investigated in a real-world setting the utility of therapeutic drug monitoring (TDM) to optimize treatment and correlated the serum concentration of UST to clinical outcomes.

Metod: This retrospective study includes patients diagnosed with Crohn's disease (CD) and ulcerative colitis (UC) treated with UST and followed until withdrawal of treatment for any reason, or until end of study, July 31, 2021. Concentration data and dosing interval were collected at each follow-up (3, 6, 9, 12, 24, 36, 48, 60 months) in relation to presence of remission defined as Physician Global Assessment (PGA) = 0.

P.45

GI symptoms, mental health and health-related quality of life in microscopic colitis patients – baseline questionnaire data from an intervention study.

Inflammatoriska tarmsjukdomar

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Bakgrund: Microscopic colitis (MC) is a chronic inflammatory disease of the colon that primarily manifests in middle-aged and elderly women. MC patients experience chronic watery diarrhea that is associated with abdominal pain, weight loss, and fatigue. Importantly, these symptoms significantly impair the quality of life of MC patients which adds to the overall disease burden of MC. Here, we describe the baseline symptom questionnaire data from MC patients who participated in an intervention study examining the effects of dietary fiber on intestinal barrier function, inflammation, and gastrointestinal symptoms in MC patients.

Metod: A total of 22 (7 males, 15 females) participants with a confirmed MC diagnosis were recruited via Örebro University Hospital patient records or via personal communication with a gastroenterologist. Before the start of the intervention period, the participants were asked to fill out questionnaires measuring their gastrointestinal symptoms, psychological symptoms, and quality of life. The occurrence and frequency of gastrointestinal symptoms was measured with Gastrointestinal Symptom Rating Scale (GSRS). The GSRS includes 15 items in five symptom clusters: reflux, abdominal pain, constipation, diarrhea, and indigestion. It measures symptoms during the past 7 days with a 7-point Likert scale ranging from 1 (no discomfort at all) to 7 (very severe discomfort). The patients'

mental well-being was assessed with the Hospital Anxiety and Depression Scale (HADS) consisting of 14 items divided into two subscales for anxiety and depression. Health-related quality of life was analyzed using the Short Health Scale (SHS) which measures the patient's experience of the disease's impact on four health dimensions: symptom burden, social function, disease-related worry, and general well-being.

Resultat: Participants' reported symptoms scores and correlations between different symptom scores are listed in Table 1.

Slutsats: The occurrence and severity of gastrointestinal symptoms correlate significantly with mental well-being and health-related quality of life in MC patients.

Table 1. Baseline symptom scores and p-values of Spearman correlations between individual symptom scores in microscopic colitis patients

	Median (min-max)	GSRS		HADS	
		Total score	*Diarrhea subscore*	*Anxiety*	*Depression*
GSRS					
Total score	2.1 (1.3-4.4)		<0.001	0.007	0.01
Diarrhea subscore	2.9 (1-7)	<0.001		0.08	0.08
HADS					
Anxiety	3 (0-11)	0.007	0.08		<0.001
Depression	1 (0-10)	0.01	0.08	<0.001	
Short Health Scale					
Symptom burden	40 (0-100)	<0.001	<0.001	0.14	0.26
Social function	20 (0-100)	<0.001	0.002	0.04	0.10
Disease-related worry	20 (0-100)	<0.001	0.002	0.01	0.15
General well-being	80 (20-100)	<0.001	<0.001	0.01	0.003

GSRS = Gastrointestinal Symptom Rating Scale, HADS = Hospital Anxiety and Depression Scale

P.46

Identification and validation of a blood-based diagnostic lipidomic signature of pediatric inflammatory bowel disease.

Inflammatoriska tarmsjukdomar

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Bakgrund: Improved diagnostic biomarkers are needed for pediatric inflammatory bowel disease (IBD). We therefore aimed to identify a diagnostic lipidomic signature of pediatric IBD.

Metod: We obtained blood samples from a regional Swedish inception cohort of treatment-naïve pediatric patients referred for suspected pediatric IBD and performed a non-targeted liquid chromatography-time of flight mass spectrometry-based lipidomics (UPLC-QTOFMS) analysis (**Figure 1**). Findings were validated in the Norwegian population-based IBSEN III pediatric inception cohort. IBD was defined by the ESPGHAN/Porto criteria. Supervised machine learning was used to identify a diagnostic lipidomic signature and its performance was compared with clinically established biomarkers.

Resultat: The discovery cohort comprised of 58 children with IBD and 36 symptomatic controls without any discernible evidence of IBD. In the validation cohort, the corresponding numbers were 80 and 37. While examining both individual molecular lipid species and signatures in the discovery cohort, the highest diagnostic accuracy was observed for a lipidomic signature comprising only two molecular lipid species lactosyl ceramide (d18:1/16:0) and phosphatidylcholine (18:0p/22:6) (AUC=0.93 [95% CI 0.87-0.98]). When applied to the validation cohort, the signature improved the diagnostic prediction of pediatric IBD (AUC=0.86 [95 %CI 0.78-0.92]) compared with high-sensitivity C-reactive protein (hsCRP) alone (AUC=0.73 [95 %CI 0.63-0.82]), P<0.0001. Combining hsCRP with the lipidomic signature did not improve performance (AUC=0.86). Among children providing a stool sample (n=77), the diagnostic performance of the lipidomic signature (AUC=0.88 [95 %CI 0.80-0.95]) and fecal calprotectin (AUC=0.93 [95 %CI 0.87-0.99]) did not substantially differ (*P*=0.22).

Slutsats: This study identified and validated a diagnostic lipidomic signature that may be developed into an accessible and scalable blood test for pediatric IBD.

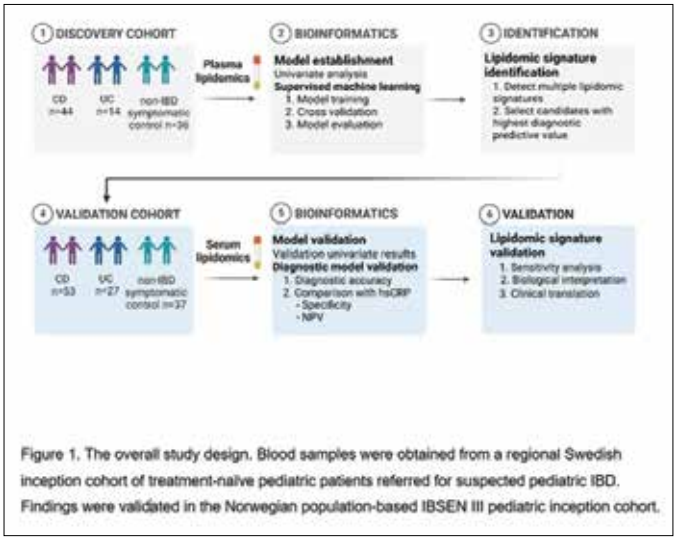

Figure 1. The overall study design. Blood samples were obtained from a regional Swedish inception cohort of treatment-naïve pediatric patients referred for suspected pediatric IBD. Findings were validated in the Norwegian population-based IBSEN III pediatric inception cohort.

P.47

Immunophenotypic characterisation of jejunal T lymphocytes in collagenous colitis patients – a pilot study.

Inflammatoriska tarmsjukdomar

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Bakgrund: Although collagenous colitis is considered a disease of colon it has been hypothesized that the small intestine is also affected, as the patients show comorbidities including celiac disease and/or have symptoms typically associated to small intestinal dysfunction. Patients with collage-

nous colitis have changes in the lymphocyte composition and immunophenotype in the colon, yet no flow cytometric studies have examined the small intestine.

Metod: Jejunal biopsies were collected via double ballon enteroscopy from patients with collagenous colitis, and were compared to non-inflamed controls as well as patients with Crohn´s disease. Intraepithelial and lamina propria lymphocytes were isolated and analyzed separately, and flow cytometric evaluation was performed to investigate lymphocyte composition and expression of markers involved in activation and recirculation.

Resultat: Lamina propria lymphocytes in the small intestine of patients with collagenous colitis showed a dominance of CD4+ T lymphocytes (56 %) while the intraepithelial T lymphocytes were dominated by CD8+ T lymphocytes (82 %), in accordance with healthy controls. Most of the intraepithelial T lymphocytes (96 %) expressed the homing receptors CD103 (Integrin αE) and Integrin β7 whereas about one fifth (22 %) of the lamina propria T lymphocytes expressed these two markers. Nearly all both intraepithelial and lamina propria T lymphocytes expressed the memory marker CD45RO (92 and 95 % respectively). Most of the intraepithelial T lymphocytes co-expressed the recent thymic emigrant marker PECAM-1 (80 %) while about one fifth (20 %) of the lamina propria T lymphocytes co-expressed those markers.

Slutsats: Our preliminary data indicate alterations in T lymphocyte subset composition and expression of activation markers and homing receptors in the small intestine of patients with collagenous colitis. It is thus motivated to continue this analysis through inclusion of more patients.

P.48

Increasing risk of lymphoma over time in Crohn's disease but not in ulcerative colitis: a population-based cohort study 1969-2019.

Inflammatoriska tarmsjukdomar

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Bakgrund: Earlier studies have provided varying risk estimates for lymphoma in patients with inflammatory bowel disease (IBD). However, they have often been limited by misclassification, detection biases, (especially during the first year of follow-up), and small sample size; and rarely reflect modern-day management of IBD.

Metod: Binational register-based cohort study (Sweden and Denmark) during 1969-2019. We compared 164,716 patients with IBD to 1,639,027 matched general population reference individuals. Cox regression estimated hazard ratios (HRs) for incident lymphoma by lymphoma subtype, excluding the first year of follow-up.

Resultat: During 1969-2019, 258 patients with Crohn's Disease (CD), 479 patients with ulcerative colitis (UC), and 6675 matched reference individuals developed lymphoma. This corresponded to incidence rates of 35(CD) and 34(UC)/100,000 person-years [PY] in IBD patients, compared to 28 and 33/100,000 PY in their matched reference individuals. While both CD (HR=1.32; 95 %CI=1.16-1.50) and UC (HR=1.09; 95 %CI=1.00-1.20) were associated with an increase in lymphoma, the 10-year cumulative incidence difference was low even in CD patients (0.08 %; 95 %CI=0.02 to 0.13]))., Most CD phenotypes were associated with lymphoma, especially with non-Hodgkin Lymphoma (NHL), and HRs increased the last two decades. Since the year 2000, increased HRs were noted especially for aggressive B-cell NHL in CD and UC patients, and for T-cell NHL in CD patients. For UC, only extensive colitis or primary sclerosing cholangitis were associated with lymphoma risk.

Slutsats: During the past 20 years, HRs for lymphomas have increased in CD, but not in UC, and are driven mainly by T-cell lymphomas and aggressive B-cell lymphomas.

P.49

Is stress associated with subclinical inflammation in Ulcerative Colitis? A population-based cross-sectional cohort study in southeastern Sweden.

Inflammatoriska tarmsjukdomar

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Bakgrund: Ulcerative colitis (UC) is an immune-mediated chronic inflammatory bowel disease with a relapsing course. Whether perceived stress affects disease activity remains debated. This study aimed to investigate if clinical and subclinical disease activity, perceived stress, and hair cortisol concentration (HCC) are associated.

Metod: We performed a population-based cross-sectional cohort study with 200 randomly selected adult patients with UC living in the catchment area of Linköping University Hospital. Demographic and disease-related data, fecal calprotectin (FC), CRP, and hair samples for hair cortisol concentration (HCC) were collected. Bowel symptoms were registered and PRO2 calculated (clinical remission defined as zero). Data generated using the 14-item Perceived Stress Scale (PSS), the Short Health Scale (SHS), and the Inflammatory Bowel Disease Questionnaire (IBDQ) were recorded.

Resultat: N=174 patients participated in the study (45.1% females). The median PSS score was 21.0 (IQR 16.0–27.0). N=124 patients had a PRO2 score of zero, and these had a significantly lower PSS score (median 21.0 (IQR 15.0–27.0)) compared to those with PRO2 ≥1 (median 24.0 (IQR 17.5–27.5)) (p<0.01). Patients experiencing more perceived stress (PSS score >21.0) had an impaired quality-of-life as measured by SHS (p<0.01) and IBDQ (p<0.01) compared with patients with lower PSS scores. The median FC was 43.1 µg/g, CRP 1.5 mg/l and HCC 24.7 pg/mg. No significant differences in FC, CRP or HCC were detected comparing patients with high versus low PSS scores. Nor was a correlation between HCC and FC or CRP observed.

Slutsats: Bowel symptoms contribute to the feeling of being stressed in UC patients. Perceived stress is associated with impaired quality-of-life. In our material, subclinical inflammation (FC) during clinical remission was not associated with perceived stress or long-term stress (HCC). The issue of whether perceived stress may cause or augment intestinal inflammation, or vice versa, requires further investigation.

P.50

Long-term outcomes of vedolizumab in inflammatory bowel disease: the Swedish prospective multicentre SVEAH extension study.

Inflammatoriska tarmsjukdomar

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Bakgrund: Real-world data on long-term outcomes of vedolizumab (VDZ) are scarce. We aimed to assess long-term outcomes (up to three years) of VDZ in the treatment of IBD.

Metod: A nationwide, observational, multicentre extension of the SVEAH study. After re-consent, clinical and demographic data on patients with Crohn's disease (CD) (n=68) and ulcerative colitis (UC) (n=46) treated with VDZ were prospectively recorded using an electronic Case Report Form integrated with the Swedish Inflammatory Bowel Disease Register (SWIBREG). The primary outcome was clinical remission (defined as Harvey-Bradshaw Index (HBI) ≤4 in CD and partial Mayo Clinic score ≤2 in UC) at 104 and 156 weeks, respectively, among patients with a response/remission at 12 weeks after starting VDZ. Secondary outcomes included biochemical response and quality of life measures.

Resultat: Clinical and demographical characteristics of patients with CD and UC are shown in Table 1. Of the 53 CD patients with a response/remission at 12 weeks, 40 (75 %) patients were in remission at 104 weeks and 42 (79 %) at 156 weeks. Correspondingly, 25/31 (81 %) patients with UC, with a response/remission at 12 weeks, were in remission at 104 weeks and 22/31 (71 %) at 156 weeks. Improvement was seen in each dimension of the Short health scale (p<0.01 for each dimension, CD, n=51; UC, n=33) and the EuroQol 5-Dimensions, 5-Levels index value (p<0.01, CD, n=39; UC, n=30). Median plasma-CRP concentrations (mg/L) decreased from 5 at baseline to 4 in CD (p=0.01, n=53) and from 5 to 4 in UC (p=0.03, n=34) at 156 weeks. Correspondingly, median faecal-calprotectin (µg/g) decreased from 641 to 114 in CD (p<0.01, n=26) and from 387 to 37 in UC (p=0.02, n=17).

Table 1. Baseline (at initiation of vedolizumab treatment) demographics and clinical characteristics of patients with Crohn's disease and ulcerative colitis included in the SVEAH extension study

	Crohn's disease (N=68)	Ulcerative colitis (N=46)
Female sex, no (%)	27 (40)	23 (50)
Median age (IQR), years	43 (31-53)	42 (26-53)
Disease duration (IQR), years	9 (3-23)	6 (3-11)
Previous biologics, no (%)	58 (85)	42 (91)
1	24 (35)	28 (61)
≥2	34 (50)	14 (30)
Concomitant medication, no (%)		
5-ASA	4 (6)	20 (43)
Corticosteroids	14 (21)	11 (24)
Immunomodulators	10 (15)	11 (24)
Disease location, no (%)		
Ileal, L1	16 (24)	
Colonic, L2	24 (35)	
Ileocolonic, L3	28 (41)	
Disease extent, no (%)		
Proctitis (E1)		1 (2)
Left-sided colitis (E2)		9 (20)
Extensive colitis (E3)		36 (78)

Slutsats: VDZ was associated with improvements in clinical outcomes, HRQoL measures and inflammatory markers at 2 and 3 years after treatment initiation in this prospective nationwide SVEAH extension study.

P.51

Long-term real-world data of Ustekinumab in Ulcerative Colitis – the Stockholm Ustekinumab study – STOCUSTE.

Inflammatoriska tarmsjukdomar

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Bakgrund: Ustekinumab (UST) is an anti-interleukin-12/23 antibody in the treatment of inflammatory bowel disease (IBD), mainly used in patients failing anti-TNF-agents. The STOCUSTE study includes patients treated at four hospitals in Stockholm to provide long-term real-world data.

Metod: This was a retrospective study including patients diagnosed with ulcerative colitis and treated with UST between years 2016 and 2021. The patients were followed from start of UST until withdrawal of treatment for any reason, or until end of study follow-up, July 31, 2021.We assessed disease activity; Physician Global Assessment (PGA); Ulcerative Colitis Endoscopic Index of Severity (UCEIS) score, laboratory parameters and drug persistence. The primary outcome was remission (PGA = 0) and response (decrease PGA ≥ 1 from baseline) at 3 and 12 months, respectively.

Resultat: 96 patients, 44 women and 52 men were included. The patients had either extensive colitis (68 %), left-sided colitis (29 %) or proctitis (3 %). All but two patients were anti-TNF-experienced; 94 (98 %) had failed ≥1, 59 (61 %) ≥2 and 34 (35 %) ≥3 anti-TNF-drugs. At inclusion 92 patients (96 %) had active disease and 4 patients were in remission, 48 (50 %) were on oral or topical corticosteroids, 13 (14 %) had thiopurines. At 12 months only 9 % were on oral or topical corticosteroids. Among patients who were treated with UST, 9/71 (6 %) were in remission at 3 months, and 26/33 (78 %) patients were in remission at 12 months. Withdrawal from treatment during the first 12 months was 36 (38 %), mainly due to persisting disease activity (20 %); 8 % were withdrawn due to adverse events, 2% needed bowel surgery, and 2 % were lost to follow up.

Slutsats: In this group of difficult-to-treat patients with ulcerative colitis, Ust was shown to be effective in the majority, with high drug persistence at 12 months in combination with a favorable safety profile.

P.52

Lower frequency of registrations of Patient Reported Outcome Measures in IBD patients receiving non-hospital based advanced therapies.

Inflammatoriska tarmsjukdomar

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Bakgrund: Inflammatory bowel disease (IBD) is associated with reduced Quality of Life (QoL). Clinical based evaluations have traditionally been used to assess the efficacy of medical therapies. However, subjective information regarding patient experience have been missed. This has led to the development of questionnaires termed Patient Reported Outcome Measures (PROM). We aim to identify subgroups being missed and that need more monitoring.

Metod: Prospectively collected data were extracted from the Swedish IBD Registry (SWIBREG). PROM were registered using Short Health Scale (SHS) and EuroQol 5-dimension (EQ5D), both questionnaires used to describe health-related QoL. Patients are requested to fill in paper-questionnaires at each hospital contact. Inclusion criteria were patients with Crohn's disease (CD) and Ulcerative colitis (UC) aged ≥18 receiving biological treatment; non-hospital based subcutaneous treatment at home (Adalimumab, Ustekinumab, Golimumab) or intravenous treatment at the hospital (Infliximab, Vedolizumab) between 2018-08-01 to 2020-01-31 at the Karolinska University Hospital.

Resultat: A total of 412 patients were included: 287 (70 %) CD, 125 (30 %) UC, 267 (65 %) males, 342 (83 %) current smoking, 190 (46 %) joint pain, median age 33 (27-44), median age at diagnosis 21 (15-27). Patients receiving non-hospital based treatment that can be taken at home with subcutaneous administration methods fill in SHS/EQ5D questionnaires less frequently (p<0.001) compared to patients with hospital based treatment with intravenous administration methods. Average frequency of response in SHS/EQ5D was 20 % less in women (p<0.001). Patients in remission completed the questionnaires more often than patients with active disease (p<0.001). See table 1 for details.

Slutsats: Patients receiving advanced non-hospital based therapies given at home with subcutaneous methods are less monitored. With this shift towards subcutaneous forms of advanced therapy in IBD it is important to develop digital monitoring e.g., with apps where data can be reported remotely, and in ways that are more accessible for the patient.

Table 1. Completed questionnaires for SHS and EQ5D in different subgroups during the study period.

	QUESTIONNAIRE	SUBGROUP	MEDIAN	RATIO (95% CI)	P-VALUE
BIOLOGICAL TREATMENT N=412	SHS	Home[a] (n=158)	1	6.5 (5.7-7.5)	<0.001
		Hospital[b] (n=254)	9		
	EQ5D	Home (n=158)	1	6.8 (5.9-7.9)	<0.001
		Hospital (n=254)	9		
SEX N=412	SHS	Female (n=145)	4	1.3 (1.1-1.4)	<0.001
		Male (n=267)	7		
	EQ5D	Female (n=145)	4	1.3 (1.1-1.4)	<0.001
		Male (n=267)	7		
DISEASE ACTIVITY N=205[c]	SHS	Active[d] (n=53)	6	1.3 (1.1-1.4)	<0.001
		Remission (n=152)	9		
	EQ5D	Active (n=53)	4	1.4 (1.3-1.4)	<0.001
		Remission (n=152)	9		

[a] Home; treatment at home with subcutaneous administration (Adalimumab, Ustekinumab, Golimumab). [b] Hospital; treatment at the hospital using intravenous administration (Infliximab, Vedolizumab). [c] Missing data n=207. [d]Active disease is defined by Mayo Score ≥ 4 for patients with Ulcerative colitis and Harvey-Bradshaw Index (HBI) score ≥ 5 for patients with Crohn's disease.

P.53

Microscopic colitis patients have both higher and lower levels of immunomodulatory molecules in colon biopsies compared to patients with UC.

Inflammatoriska tarmsjukdomar

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Bakgrund: Microscopic colitis (MC), with the two subtypes lymphocytic colitis (LC) and collagenous colitis (CC), is associated with lower risk of developing colorectal cancer compared to ulcerative colitis (UC) patients and the general population. This may be due to increased immune surveillance in MC patients.

Metod: Levels of 34 immunomodulatory molecules (IL-4, IL-10, IL-11, IL-13, IL-19, IL-27, CD163, IL-2, IL-5, IL-6Rα, IL-8, IL-12, IL-34, CCL3, CCL4, Chitinase, GM-CSF, Granzyme A, Granzyme B, IFN-γ, 4-1BB, APRIL, BAFF, IL-6, IFN-β, Fas, FasL, gp130, MMP1, MMP3, Osteopontin, Pentraxin, TNF-α, Aggrecan) in colonic biopsies from patients with MC (CC n = 27, LC n = 20) and UC (n = 38) compared to controls (n = 73) were analyzed using Luminex.

Resultat: Increases in 16 analytes in patients with active CC and 8 analytes in patients with active LC were seen compared to controls, whereas 21 analytes were increased in UC patients. In UC but not MC, levels of IL-2, IL-10, IL-12, Fas and Pentraxin were increased compared to controls. Pentraxin levels were decreased in patients with active MC compared to UC. FasL, Granzyme A and Granzyme B levels were higher in CC and LC compared to UC patients. IL-6Rα was decreased in patients with CC compared to UC. Gp130, MMP-1, MMP-3, APRIL and BAFF were decreased in patients with LC compared to UC. Levels of MMP-1 and MMP-3 were decreased in patients with active LC compared to CC. No increases were seen in diarrhea controls compared to controls.

Slutsats: Most immunomodulatory molecules in the colonic mucosa were higher in UC compared to MC patients, but several CD8+ T cell associated analytes were higher in MC. The changes in patients with CC were more pronounced than in LC patients. No significant increases were observed in diarrhea controls, indicating that diarrhea alone is not associated with increased production of immunomodulatory molecules.

P.54

Olika incidens för kollagen och lymfocytär kolit i Skåne tyder på att det är två olika sjukdomar.

Inflammatoriska tarmsjukdomar

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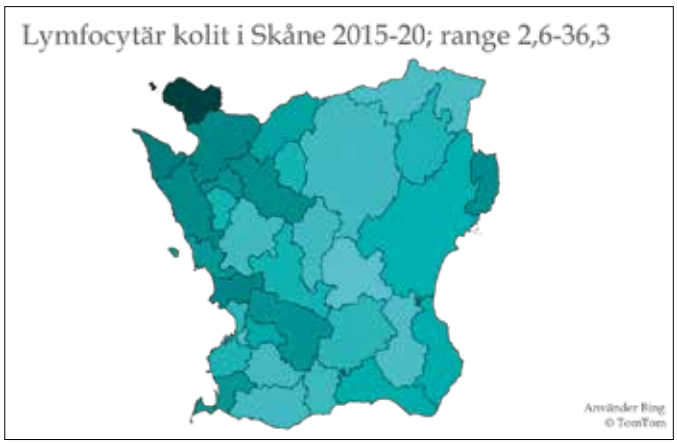
Bakgrund: Incidensen för immundriven gastrointestinal sjukdom såsom inflammatorisk tarmsjukdom och mikroskopisk kolit har ökat i västvärlden de senaste decennierna. Syftet med föreliggande studie var att undersöka incidensen av subtyperna av mikroskopisk kolit kollagen och lymfocytär kolit i Skåne under 2010-20 uppdelat på de olika kommunerna.

Metod: Diagnosen kollagen eller lymfocytär kolit baserades på PAD-svar som hämtades från registren vid de olika patologienheterna i Skåne. Differenser över tid beräknades med Kruskall Wallis H test.

Resultat: Incidensen för kollagen kolit var stabil över tidsperioden med en åldersstandardiserad ratio (ÅSR) på 6,34, (range 4,6-8,1). För lymfocytär kolit var ÅSR 7,90 (range 1,7-15,2) men ökade åren 2015-20 upp till som högst 15,2 under 2019. De nordvästra kommunerna (Helsingborg, Ängelholm, Höganäs och Båstad) hade den högsta incidensen. Så tex hade Helsingborg 2-5 fall under perioden 2010-2015. Under 2018-19-20 påvisades 26-50-19 fall.

Slutsats: Incidensen för lymfodytär kolit skilde sig åt mot kollagen kolit på ett sätt som tyder på att det rör sig om två olika sjukdomstillstånd. Med tanke på den tydliga stegringen under en begränsad tidsperiod dvs åren 2015-19 och dessutom inom ett begränsat område får man misstänka att någon form av utlösande agens kan ligga bakom såsom infektion, förorening i vattnet etc. Ytterligare studier av detta är på gång.



P.55

Samlevnad och sexualitet vid IBD: första resultaten från en enkätundersökning – SOS-IBD.

Inflammatoriska tarmsjukdomar
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Bakgrund: Trots att HRQOL vid IBD studerats sedan 30 år är kunskapen om andra sjukdomskonsekvenser som fatigue, psykisk ohälsa samt samlevnad och sexualitet (SOS) relativt bristfällig.

Metod: En digital, anonymiserad enkät skickades till samtliga medlemmar i Mag- och tarmförbundet med IBD-diagnos (N=2274). Sju frågor, varav fyra var allmänna (ålder, kön, sjukdom, operationer) och tre frågor berörde SOS, vilka analyserades kvalitativt med innehållsanalys.

Resultat: 556 patienter besvarade enkäten. Medianåldern hos dem som svarade var 55 år, 69 % var kvinnor. 46 % hade ulcerös kolit, 45 % Crohns sjukdom, 6 % mikroskopisk kolit, 3 % blandformer. 36 % hade opererats för IBD. Fråga SOS-1: ”Vilken problematik har du råkat ut för gällande sex och samlevnad med hänsyn till din tarmsjukdom?” 78 % uppgav något problem. De vanligaste fysiska svårigheterna gällde smärta (14 %), inkontinens/trängning (11 %) samt gaser/uppdriven buk (9 %). Motsvarande psykiska problem var rädsla för läckage (13 %), minskad sexlust (11%) och brist på energi (8 %). Flera beskrev att sexlivet alltid behövde planeras och några beskrev att de undvek att ha en partner då det är svårt att inleda relationer. Fråga SOS-2: ”Vilken slags hjälp och stöd från sjukvården skulle du önska?” 64 % önskade att sjukvården lyfte frågor om SOS som en lika naturlig del som övrigt hälsostatus. Många önskade samtalsstöd, gärna tillsammans med partnern och tillgång till psykolog och kurator. På fråga SOS-3, ”Har du själv spontant tagit upp samlevnadsfrågor i kontakten med sjukvårdspersonal?”, svarade 84 % nej. Anledningar som lyfts är att det känns obekvämt att ta upp, pinsamt, tidsbrist, andra frågor prioriteras eller så har man inte kontakt med sjukvården alls.

Slutsats: 78 % uppgav att de haft svårigheter gällande SOS, främst smärta och tarmläckage. 64 % efterfrågar aktivt stöd från sjukvården medan inte mer än 14 % själva tagit upp ämnet vid kontakt med vårdpersonal. Inom ramen för en personcentrerad vård vid IBD behöver alltså kunskap och medvetenhet kring SOS fördjupas och aktualiseras.

Tabell 1. Problematik gällande samlevnad och sexualitet (SOS)

Fysiska problem	Psykiska problem
Smärta (buksmärta, vaginal smärta, fistelsmärta, rektum-smärta)	Oro för ändtarmsläckage
Avföringsinkontinens/läckage/trängning	Minskad sexlust
Gaser/uppdriven buk	Brist på energi
Skov som ger besvär	Känner sig inte attraktiv
Erektionsproblem/impotens	Oro för stomi – genant, ändrad självbild, påverkan på självförtroende
Praktiska problem med stomi	Oro för att lukta illa/känsla av ohygienisk
Fistlar (läckage, setontråd)	Bristande självförtroende
Mediciner som tas rektalt	Skam och allmän oro
Täta infektioner i underlivet	
Svårighet med analsex	
Ändtarmsframfall	

P.56

Stress och IBD – skillnader vid skov och remission?

Inflammatoriska tarmsjukdomar
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Bakgrund: Patienter med inflammatorisk tarmsjukdom (IBD) upplever ofta att stress påverkar deras sjukdom negativt. Studier har också visat på ett möjligt samband mellan stress och skov i IBD. Denna studie har som syfte att undersöka patienters stressnivå, både subjektivt upplevd och objektiv, vid ett skov samt vid remission. Detta för att fastställa om stressnivåerna är högre vid ett skov jämfört vid remisson.

Metod: Inklusionskriterier var att ha ulcerös kolit eller Crohns sjukdom, vara över 18 år samt vara i ett skov i IBD. 24 patienter inkluderades i studien. Mätningar gjordes med kortisol i saliven samt att patienterna fick fylla i Short Health Scale (SHS) samt Perceived Stress Scale (PSS). Alla mätningar gjordes vid skovets start samt då patienterna var i remission. För att säkerställa skov och remission gjordes endoskopisk undersökning samt mätning med kalprotectin.

Resultat: Totalt 20 patienter fullföljde studien. Medelåldern var 45 år. 17 (85 %) stycken hade ulcerös kolit och 12 (60 %) var kvinnor. Nivåerna i kortisol visade normalvärden både i och efter skov. I PSS syntes inte heller några skillnader i skov och remission. Dock visade det medelhöga värden av stress vid båda mättillfällen (tabell 1). SHS visade förbättringar i alla fyra frågor men främst i fråga 1 gällande symtom.

Slutsats: Inga signifikanta skillnader kunde hittas i stressnivåer vid mätning av kortisol och upplevd stress vid skov och remission. Dock visade PSS att deltagarna hade medelhöga värden av stress vid båda mättillfällen vilket kan tyda på en konstant stress hos patienter med IBD. En svaghet i denna studie är svårigheten att mäta kortisol vid samma tidpunkt hos respektive patient samt en liten patientgrupp. Det finns fortfarande ett behov att undersöka kopplingen mellan stress och IBD. Gällande denna studies patientgrupp finns en önskan att gå vidare med att titta mer noggrant på eventuella skillnader inom varje respektive patient.

Tabell 1

	Skov	Remisson
Kortisol i saliv	0,272	0,201
PSS 0-13=låg stress 14-26 medelhög stress 27-40 hög stress	15	14
SHS – Symtom (0-6)	4	2
SHS – Funktion (0-6)	3	2
SHS - Oro (0-6)	3,5	2,5
SHS – Välbefinnande (0-6)	2,5	2

P.57

Vitamin D-receptorn i kolon vid inflammatorisk tarmsjukdom: ingen korrelation med histologisk eller endoskopisk inflammation.

Inflammatoriska tarmsjukdomar

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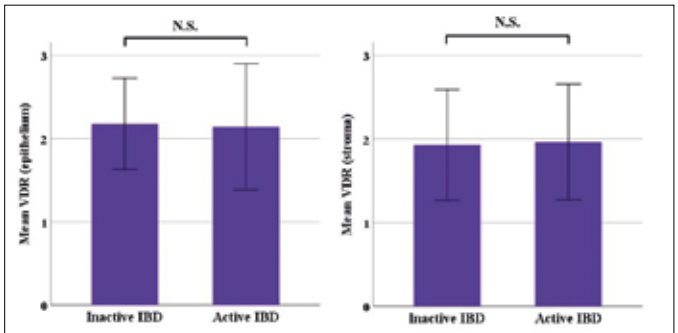
Bakgrund: Patogenesen bakom inflammatorisk tarmsjukdom (IBD), bestående av ulcerös kolit (UC) och Crohns sjukdom (CD), är komplex, där sannolikt både genetiska och miljömässiga faktorer samverkar. En potentiell miljöfaktor är D-vitamin och dess intranukleära receptor: D-vitaminreceptorn (VDR). VDR utövar potentiellt immunmodulerande effekter på tarmen. Kopplingen mellan VDR och IBD är ofullständigt kartlagd. Målet med denna studie var att undersöka sambandet mellan inflammatorisk aktivitet vid IBD och immunhistokemiskt uttryck av VDR i tarmen.

Metod: Vi analyserade immunhistokemiskt uttryck av VDR i biopsier tagna vid både mikroskopiskt aktiv och inaktiv sjukdom hos 28 IBD-patienter (UC:21, CD:7). Således analyserades 56 biopsier (2 per patient). Vi undersökte sedan förhållandet mellan VDR-uttryck och inflammatorisk svårighetsgrad (med parametrarna histologisk inflammation, koloskopisk bild, kliniska fynd och laboratorieprover).

Resultat: VDR-uttryck skilde sig inte mellan aktiv och inaktiv IBD (p = 0,83). Vi fann inget samband mellan VDR-uttryck och histologisk inflammation (p = 0,78), koloskopisk bild eller någon klinisk eller laboratoriemässig parameter, däribland serum 25(OH) D-vitaminstatus (p = 0,81).

Slutsats: Sjukdomsgrad av IBD korrelerar ej till immunhistokemiskt uttryck av VDR, och VDR-uttryck ändrar sig inte mellan aktiv och inaktiv sjukdom. Våra resultat går emot vad tidigare studier visat, men dessa är fåtaliga och har endast visat små skillnader. Inget samband fanns heller mellan cirkulerande D-vitaminnivåer och uttryck av VDR. Andra immunologiska vägar vid IBD bör utforskas. Det kan också vara värdefullt att undersöka alternativa sätt att analysera VDR.



Figur 1. Genomsnittligt immunhistokemiskt uttryck av D-vitaminreceptorn (VDR) i både epitel och stroma, med ingen skillnad mellan aktiv och inaktiv IBD (p = 0,83 för epitel och p = 0,86 för stroma).

Kirurgi

P.58

Incidence and Prevalence of Thrombotic Events in Pancreatic Neuroendocrine Tumors (PNETs) compared to Pancreatic Ductal Adenocarcinomas (PDACs).

Kirurgi
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Bakgrund: Pancreatic neuroendocrine tumors (PNETs) can develop cancer-related medical complications during the long-standing clinical course. Cancer is a risk factor for thrombosis and the need of anticoagulants in outpatient clinic setting can be assessed through the Khorana score. Pancreas localization is associated with higher risk, but the Khorana score doesn't distinguish between PNETs and pancreas ductal adenocarcinoma (PDAC). The aim of the study is to assess the incidence and prevalence of major thrombotic events (MTE) in operated PNETs vs PDAC.

Metod: Retrospective case-control on a cohort of patients operated at Umeå University Hospital, Sweden between 2001-2020. Cases (PNETs), and consecutive age (±10 years) matched controls (PDAC) were compared for demographics, exposures, cancer characteristics, MTE at the time of diagnosis and during follow-up. Statistical analysis: student's t-test, Mann Whitney test, univariable Cox regression analysis.

Resultat: 53 cases and controls were included, 60.4 % males. Overweight and obesity were significantly more prevalent in cases than in controls (53.1 % vs 42.0 and 10.2 % vs 8.0 %, respectively p=0.04). A previous history of cancer (30.2 % vs 11.5%, p= 0.01), and active cancer (36.4 % vs 3.8 %, p= 0.009) was more frequent in cases than in controls. The rate of pre-operative MTE was not significantly different between cases and controls (20.8 % vs 11.3 %, p=0.1), nor the previous use of aspirin (32.7 % vs 24.5 %, p=0.3), other antiplatelet drugs (5.9 % vs 9.4, p=0.4), or anticoagulants (33.3 % vs 18.9 %, p=0.09). The rate of post-operative MTE was statistically lower in cases than in controls (11.3 % vs 0 %, p=0.01). At univariable Cox regression analysis cases displayed less risk of developing major cardiovascular events (HR=0.13, 0.05-0.36, 95 % CI, p=0.0001).

Slutsats: The post-operative risk of MTE is significantly lower in PNETs compared to PDAC. Different pancreas histotypes might display different risk and deserve further risk-stratification before the administration of parenteral anticoagulants.

P.59

Långtidsuppföljning vid Kock reservoar.

Kirurgi
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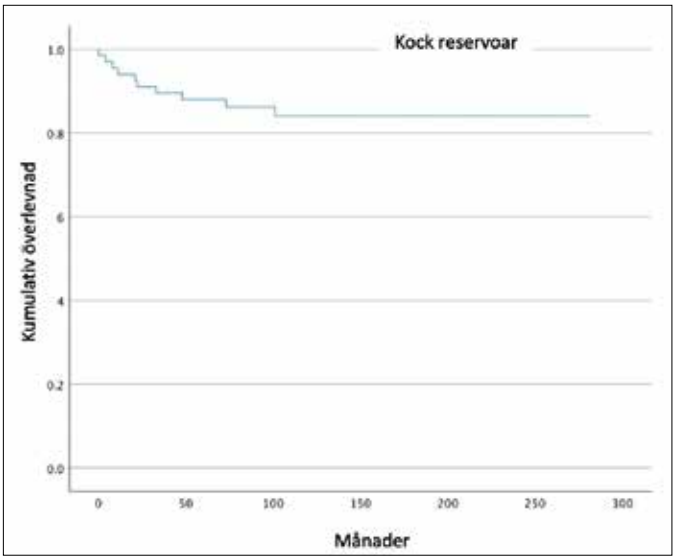
Bakgrund: Vid inflammatorisk tarmsjukdom (IBD) är kirurgi med proktokolektomi ibland nödvändig. När rekonstruktiv kirurgi i form av bäckenreservoar inte är möjlig eller fallerar, är kontinent ileostomi, Kock reservoar, ett alternativ till konventionell ileostomi. Denna studie ämnar undersöka långtidsutfall hos personer opererade med Kock reservoar.

Metod: Alla som blivit opererade med Kock reservoar under åren 1999-2021 på Sahlgrenska Universitetssjukhuset inkluderades i denna studie. Journalgranskning utfördes på samtliga patienter avseende frekvens av exstirpation av Kock reservoar (failure) samt antal reoperationer och basala data. Livskvalitetsformulär (SF-36) samt tarmfunktionsformulär (SHS) skickades till inkluderade personer i livet.

Resultat: Totalt 67 personer (50 kvinnor) inkluderades, där ulcerös kolit (UC) var den vanligaste diagnosen (UC n=45, Crohns sjukdom (CD) n=15). Medianåldern vid operation med Kock reservoar var 42 (22-76) år och medianuppföljningstid fyra (0-23) år. Tio Kock reservoarer hade fallerat och exstirperats, varav åtta stycken inom de första fyra åren. Reservoaröverlevnad på 20 år beräknades till 84%. Totalt 75 reoperationer utfördes och nippelglidning/reservoarglidning var den vanligaste orsaken till både failure och reoperation. Gruppen med Crohns sjukdom uppvisade inga failures (p=0,07) och det var minskad risk för reoperation i denna grupp jämfört med icke-Crohn (p<0,02). Livskvaliteten var reducerad inom vissa områden jämfört med normalpopulationen, medan 86 % var nöjda med sin Kock reservoar och 92 % skulle välja Kock reservoar igen om de var i samma situation som när de fick den.

Slutsats: Trots reducerad livskvalitet och risk för reoperation är personer med Kock reservoar nöjda och skulle välja Kock reservoar igen. Risk för failure är störst under de första åren och Kock reservoar är ett alternativ när bäckenreservoar inte är aktuellt.



Leversjukdomar

P.60

Administrative coding for non-alcoholic fatty liver disease is accurate in Swedish patients.

Leversjukdomar

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Bakgrund: Epidemiological studies of non-alcoholic fatty liver disease (NAFLD) frequently use the International Classification of Disease (ICD) codes to identify patients. The validity of such ICD codes in a Swedish setting is unknown. Here, we aimed to validate the administrative code for NAFLD in Sweden.

Metod: In total, 150 patients with an ICD-10 code for NAFLD (K76.0) from the Karolinska University Hospital between 2015-01-01 and 2021-11-03 were randomly selected. Patients were classified as true or false positives for NAFLD by medical chart review and the positive predictive value (PPV) for the ICD-10 code corresponding to NAFLD was calculated.

Resultat: The PPV of the ICD-10 code for NAFLD was 0.82 (95 % confidence interval [CI]=0.76-0.89). After exclusion of patients with diagnostic coding for other liver diseases or alcohol abuse disorder (n=14), the PPV was improved to 0.91 (95 % CI 0.87-0.96). The PPV was higher in patients with coding for NAFLD in combination with obesity (0.95, 95 %CI=0.87-1.00) or type 2 diabetes (0.96, 95 %CI=0.89-1.00). However, in false-positive cases, a high alcohol consumption was common and such patients had somewhat higher FIB-4 scores than true-positive patients (1.9 vs 1.3, p=0.16).

Slutsats: The ICD-10 code for NAFLD had a high PPV, that was further improved after exclusion of patients with coding for other liver diseases than NAFLD. This approach should be preferred when performing register-based studies to identify patients with NAFLD in Sweden. Still, residual alcohol-related liver disease might risk confound some findings seen in epidemiological studies which needs to be considered.

P.61

Adverse muscle composition is a significant risk factor for all-cause mortality in NAFLD.

Leversjukdomar

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Bakgrund: Adverse muscle composition (i.e., low muscle volume z-score and high muscle fat infiltration) has previously been linked to poor functional performance and metabolic comorbidities in NAFLD. The aim of this study was to investigate to association of adverse muscle composition with all-cause mortality in NAFLD.

Metod: Magnetic resonance (MR) images were collected of 40,174 participants using a 6-minute neck-to-knee protocol, including liver proton density fat fraction (PDFF), total thigh fat-free muscle volume (FFMV) and anterior thigh muscle fat infiltration (MFI) using an automated analysis (AMRA® Researcher). Participants with NAFLD were stratified using liver PDFF>5 % and low alcohol consumption (*i.e.*, <14/21 units/week [women/men]). Adverse muscle composition was identified using previously published cut-offs for high MFI and low FFMV z-score. The associations of muscle composition with all-cause mortality in NAFLD were investigated using Kaplan-Meier survival curves and Cox proportional-hazard modelling. Models were unadjusted (M0) and subsequently adjusted for sex, age, BMI (M1), low hand grip strength, smoking, alcohol (M2), and previous cancer, coronary heart disease, type 2 diabetes diagnosis (M3).

Resultat: 5,069 participants had NAFLD. During a mean (±SD) follow-up of 3.9 (±1.4) years, 69 participants (63 % men, age 64.3 [±7.5] years and BMI 30.3 [±4.8] kg/m^2) died. Modelling showed that adverse muscle composition, MFI and FFMV z-score were significantly associated with all-cause mortality (**Table 1**). After adjusting for sex, age, BMI, low hand grip strength, smoking status and alcohol consumption, all muscle composition variables remained significant. When additionally adjusting for relevant comorbidities (previous cancer, coronary heart disease and type 2 diabetes), adverse muscle composition and FFMV z-score were attenuated to non-significance while MFI remained significant.

Slutsats: Adverse muscle composition was a strong predictor of all-cause mortality in NAFLD. This research further supports the potential of muscle measurements as prognostic biomarkers for liver disease progression.

	Unadjusted (M0)		Model 1 (M1) (+ sex, age, BMI)		Model 2 (M2) (+ low hand grip strength, smoking, alcohol)		Model 3 (M3) (+ previous cancer, coronary heart disease, type 2 diabetes)	
	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value	HR (95% CI)	p-value
Adverse muscle composition	2.84 (1.70, 4.75)	<0.001	1.83 (1.08, 3.12)	0.0251	1.83 (1.06, 3.14)	0.0290	1.72 (1.00, 2.98)	0.0506
Muscle fat infiltration	1.15 (1.07, 1.24)	<0.001	1.13 (1.03, 1.24)	0.0097	1.14 (1.03, 1.27)	0.0150	1.13 (1.02, 1.27)	0.0230
Muscle volume z-score	0.70 (0.55, 0.88)	0.0028	0.74 (0.56, 0.96)	0.0248	0.75 (0.57, 0.98)	0.0387	0.76 (0.57, 1.01)	0.0626

Table 1 Cox proportional-hazard ratios of all-cause mortality within NAFLD for adverse muscle composition (MC) [yes/no], muscle fat infiltration (MFI) [%], and muscle volume (FFMV) z-score [SD] including unadjusted hazard ratios (HRs) and subsequent adjustments for sex, age, BMI (M1); low hand grip strength, smoking status, alcohol consumption (M2); previous cancer, coronary heart disease, type 2 diabetes diagnosis (M3).

P.62

Biomarkers for prediction of alcohol related liver cirrhosis in the Swedish general populatio.n

Leversjukdomar

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Bakgrund: Alcohol-related liver cirrhosis (ARLC) is a severe and well-known complication to chronic alcohol overconsumption. There are several known biomarkers associated with increased intake of alcohol and liver damage. There is limited knowledge on which biomarkers that have the best predictive capabilities for future ARLC, especially in a general population setting. Here, we investigated this in a large, population-based Swedish cohort.

Metod: We used data from the AMORIS cohort, a general population cohort with blood samples from routine health care and outpatient visits in primary or occupational care collected from 1985 through 1996. The cohort consists of 812 073 individuals, approximately 35% of the total population in Stockholm county, Sweden, during this period. We included all persons above 18 years old, with a baseline blood sample of Alanine transaminase (ALT) and Aspartate transaminase (AST). We excluded subjects with known liver cirrhosis at baseline., We ascertained incident cases of

ARLC by linking the AMORIS cohort to Swedish national health registers. All subjects were followed until a first event of ARLC, death, emigration or end of the study period, December 31, 2011. Biomarkers were standardized to increase comparability. Associations between biomarkers and incident ARLC were analyzed with Cox regression models and discrimination was assessed using C-statistics.

Resultat: We identified 537 479 individuals with a mean follow-up time of 19.0 years. The biomarkers with the best predictive capabilities in both unadjusted and adjusted analyses were gamma-glutamyl transferase (GGT) and mean corpuscular volume (MCV), with an adjusted C-index of 0.81 and 0.85 respectively. The AST/ALT-ratio showed a lower predictive value, with a C-index of 0.70 (Table 1).

Slutsats: The best predictive biomarkers for ARLC in the general population were MCV and GGT, whereas the commonly used AST/ALT ratio had a lower predictive capability.

	Number	HR*	95 % CI		C-Index [b]	HR**	95 % CI		C-Index [b]
ALT	537 479	1.05	1.05	1.05	0.81	1.05	1.04	1.05	0.75
AST	537 479	1.04	1.03	1.04	0.85	1.03	1.03	1.04	0.76
GGT	515 958	1.14	1.14	1.15	0.90	1.14	1.13	1.14	0.81
Bilirubin	121 260	0.71	0.68	0.74	0.58	0.70	0.66	0.73	0.72
Albumin	470 915	1.19	1.17	1.21	0.62	1.18	1.16	1.20	0.71
MCV	172 891	2.14	2.07	2.21	0.80	2.10	2.03	2.17	0.85
AST/ALT ratio	537 479	0.97	0.93	1.02	0.52	1.08	1.05	1.11	0.70

Table 1. Hazard ratios (HR) reflect an increase of one standard deviation for each parameter. *Unadjusted; **Adjusted for sex and age; [b] Harrell's C-index

P.63

Effects of weight loss and weight regain on non-alcoholic hepatic steatosis in individuals with obesity.

Leversjukdomar

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Bakgrund: Non-alcoholic fatty liver disease (NAFLD) has become the leading cause of chronic liver disease, with obesity being the most risk factor. Hepatic steatosis can progress to fibrosis and cirrhosis. While weight loss remains the primary treatment for NAFLD, the effect of weight gain on earlier weight loss-induced NAFLD parameters is not fully known. We aimed to evaluate the effect of weight loss on NAFLD parameters in participants with obesity and to assess whether weight regain reverses the resolution of hepatic steatosis.

Metod: We analyzed 103 subjects, age 44±9 years, 91 % females, with a BMI of 32.5-45 kg/m^2 included in a 6-months program with low-energy diet and cognitive behavioral based group therapy. At 6-months, subjects were randomized to either intragastric balloon (IGB) (N=56) or control (N=47). Anthropometrics, blood samples, and Fibroscan® measurements (CAP: Controlled Attenuation Parameter; LSM: Liver Stiffness Measurement) were collected at baseline, 6- and 12-months.

Resultat: Pooled data showed weight loss after 6-months of 19 % of total body weight, and weight gain of 5 % between 6 to 12-months. CAP decreased at 6-months (302 ± 51 to 227 ± 44 dB/m) and remained reduced at 12-months (234 ± 57 dB/m). Similarly, LSM remained reduced after one year. Fatty liver index (FLI) was reduced by 49 % at 6-months but increased by 28 % at 12-months. FIB-4 was low but had increased at both follow-ups. Differences between IGB and controls are displayed in the table. The correlation between change in CAP and weight had weakened during weight gain (r =0.17) compared to weight loss (r =0.47), while the correlation between FLI and weight was similar.

Slutsats: Weight loss is associated with significant improvement in CAP, LSM, and FLI in people with obesity. Furthermore, our findings suggest that weight loss has a long-term effect on hepatic steatosis, despite weight gain.

Table. Changes in weight and NAFLD-related markers.

	Baseline	6-months	12-months	P-value [a]
Weight, kg				
All participants	106 ± 14	85 ± 12	90 ± 14	<0.001
IGB group	105 ± 13	84 ± 13	87 ± 13	
Control group	108 ± 14	87 ± 13	91 ± 21	
BMI, kg/m²				
All participants	38.0 ± 3.7	30.5 ± 4.0	32.0 ± 4.3	<0.001
IGB group	37.8 ± 3.7	30.4 ± 4.3	31.3 ± 4.4	
Control group	38.1 ± 3.7	30.7 ± 3.5	32.8 ± 4.1	
CAP, dB/m				
All participants	302 ± 51	227 ± 44	234 ± 57	<0.001[b]
IGB group	294 ± 50	221 ± 46	222 ± 64	
Control group	310 ± 51	234 ± 39	248 ± 45	
LSM, kPa				
All participants	5.4 (2.6-16.5)	5.0 (2.4-12.6)	4.5 (2.4-13.7)	0.002 [b]
IGB group	5.3 (3.0-8.8)	5.0 (2.4-6.8)	4.5 (2.8-6.9)	
Control group	5.4 (2.6-16.5)	5.2 (2.5-12.6)	4.8 (2.4-13.7)	
FLI				
All participants	88 ± 11	47 ± 25	54 ± 29	<0.001
IGB group	88 ± 10	44 ± 24	50 ± 27	
Control group	88 ± 11	49 ± 26	60 ± 30	
FIB-4				
All participants	0.53 (0.2-1.4)	0.60 (0.2-1.5)	0.63 (0.2-1.5)	<0.001
IGB group	0.48 (0.2-1.2)	0.57 (0.2-1.5)	0.61 (0.2-1.5)	
Control group	0.64 (0.2-1.4)	0.65 (0.3-1.5)	0.63 (0.4-1.5)	

Note: Weight, BMI, CAP and FLI are mean ± standard deviation. LSM and FIB-4 are median (range).

[a] P-values between three timepoints were calculated by Friedman's ANOVA test.

[b] Post-hoc Wilcoxon test for dependent samples showed p-value <0.05 only for difference between baseline and 6-months, and baseline and 12-months. The difference between 6-months and 12-months was not statistically significant.

P.64

Four-fold increased mortality rate in patients with Wilson's disease: A population-based cohort study of 151 patients.

Leversjukdomar

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Bakgrund: Few studies have investigated mortality rates in patients with Wilson's disease and compared these to the general population. Further, there is a lack of information on the risk of other potential outcomes. Here, we examined mortality and other outcomes in a population-based study of patients with Wilson's disease in Sweden.

Metod: We did a population-based cohort study, using nation-wide registers to identify all patients with a first diagnosis of Wilson's disease between 2002 and 2020 in Sweden. Each patient was matched by age,

sex and municipality with up to 10 reference individuals from the general population. Validated registers were used to investigate outcomes up to 19 years after baseline in patients and reference individuals. Cox regression was used to examine overall mortality, while Fine and Gray regression models were used for secondary outcomes, considering death and liver transplantation as competing events.

Resultat: A total of 151 patients with a first diagnosis of Wilson's disease were identified and matched with 1,441 reference individuals. Median age at baseline was 26 years (IQR 17-42) and 50% were males. During a follow-up of in mean 6.6 years (range 0-19), 10 (6.6 %) of patients with Wilson's disease died, compared with 31 (2.2 %) of the reference individuals. This translated to a hazard ratio (HR) of 3.84 (95 %CI=1.84-8.05). The excess risk of mortality was confined to patients aged 20 or more at diagnosis. Cumulative mortality at 10 years was estimated to 12.7 % (95 %CI=7.0-22.5) in patients with Wilson's disease, compared to 3.3 % (95 %CI=2.2-5.0) in reference individuals. Higher risks of several secondary outcomes in patients with Wilson's disease were identified (**Table 1**).

Slutsats: In this large, population-based cohort study, patients with Wilson's disease had an almost 4-fold increased rate of death compared to matched individuals from the general population.

	n/N, Wilson	n/N, controls	IR/1000 PY, Wilson	IR/1000 PY, controls	sHR (95%CI)
Liver-related death	1/151	1/1441	0.85 (0.12-6.06)	0.08 (0.01-0.58)	9.54 (0.60-151.89)
Liver transplantation	14/141	1/1441	11.94 (7.07-20.17)	0.08 (0.01-0.58)	**137.15 (17.94-1048.58)**
CVD	26/122	92/1111	32.23 (21.95-47.34)	10.26 (8.36-12.59)	**2.90 (1.85-4.53)**
Non-hepatic cancer	5/145	54/1350	4.46 (1.86-10.71)	4.78 (3.66-6.24)	0.84 (0.33-2.11)
HCC	1/150	1/1432	0.86 (0.12-6.10)	0.08 (0.01-0.58)	9.22 (0.55-154.79)
Psychiatric diagnoses	24/115	106/988	30.29 (20.30-45.19)	12.79 (10.57-15.47)	**2.11 (1.36-3.29)**
Neurologic diagnoses	23/125	102/1120	25.12 (16.70-37.81)	10.91 (8.99-13.25)	**2.12 (1.34-3.35)**
Fractures	22/134	132/1099	23.10 (15.21-35.08)	14.26 (12.02-16.91)	1.41 (0.91-2.20)

P.65

Health outcomes and risk assessment in chronic liver disease (HERALD): a large Swedish research platform.

Leversjukdomar

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Bakgrund: The 'HEalth outcomes and Risk Assessment in chronic Liver Disease' (HERALD) study is a Swedish research-platform linking national and regional registries to investigate the epidemiology and risk factors of liver outcomes, resource-use and costs, in patients with chronic liver diagnoses (CLD) or liver-related laboratory tests.

Metod: A CLD cohort will consist of all patients ≥ 18 years with ≥ 1 CLD diagnosis (ICD-10) in the Swedish Patient Register, or primary care from the Stockholm region. A Fib-4 cohort will consist of patients with laboratory tests (AST, ALT and platelets), required for estimating the non-invasive Fibrosis-4 (Fib-4) score in all care settings in Stockholm. All patients will be linked with longitudinal data on diagnoses, comorbidities, healthcare utilization, prescribed medicines, mortality, work absence, socioeconomic status and demographics. For a subset, other laboratory data and data on transient elastography (FibroScan) are extracted from electronic health records (EHR) and FibroScan-devices, respectively. High-risk subgroups and costs will be compared with matched controls from the general population.

Resultat: During 2001-2019, the number of patients with NAFLD in specialist care was 16,285, and the number of patients with chronic HCV, AIH or PBC were n=53,602, n=5,337 and n=5,247, respectively. Adding primary care data from Stockholm region, 1,632 additional patients with NAFLD were identified. In total 825,017 patients were identified in the Fib-4 cohort, of which 13,360 patients had diagnostic information from FibroScan.

Slutsats: HERALD will be the largest data collection to date to estimate a contemporary prevalence of liver disease, as well as risk for advanced fibrosis in a broad, unselected population of healthcare-seeking individuals in Sweden, with and without recorded liver diagnoses. Furthermore, HERALD will utilize clinical and non-clinical information to characterize patients with different risk profiles and to estimate long-term societal burden associated with severe liver outcomes in clinical practice over a 20-year period.

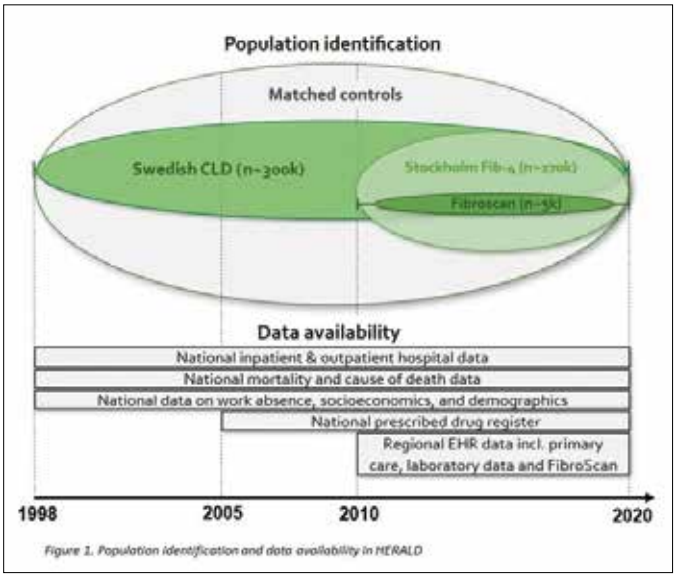

Figure 1. Population identification and data availability in HERALD

P.66

Higher household income is associated with increased likelihood of receiving curative treatment in hepatocellular carcinoma.

Leversjukdomar
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Bakgrund: European studies examining the importance of socioeconomic status on outcomes in patients with hepatocellular carcinoma (HCC) are scarce. Here, we aimed to examine whether household income is associated with curative treatment receipt in patients with HCC.

Metod: We identified all adult patients diagnosed with HCC in Sweden (2012-2018), using the Swedish quality register for liver cancer (SweLiv). Baseline data including total household income were retrieved from SweLiv and other nationwide registers. Patients were stratified into three groups: low (lowest 25 %), medium (25-75 %), and high household income (top 25 %); according on the distribution of household incomes across all household in Sweden. Logistic regression models were constructed for the estimation of the likelihood of receiving curative treatment. Variables with a known association with receiving curative treatment or a p-value ≤0.20 in univariable models were included in an adjusted model.

Table 1. Factors associated with the likelihood of curative treatment receipt in patients diagnosed with hepatocellular carcinoma in Sweden

	Univariable		Multivariable	
	OR (95% CI)	P	aOR (95% CI)	P
Sex				
Male	1.0 (ref)			
Female	1.02 (0.87-1.20)	0.774		
Age (years)	0.96 (0.95-0.97)	<0.001	0.96 (0.95-0.97)	<0.001
Household income				
Low	1.0 (ref)		1.0 (ref)	
Medium	1.40 (1.20-1.62)	<0.001	1.31 (1.03-1.68)	0.031
High	2.20 (1.77-2.73)	<0.001	1.94 (1.36-2.78)	<0.001
Etiology				
Viral hepatitis	1.0 (ref)		1.0 (ref)	
NAFLD	0.56 (0.46-0.68)	0.033	1.02 (0.67-1.55)	0.916
ArLD	0.81 (0.66-0.98)	<0.001	1.02 (0.73-1.44)	0.886
Other causes	0.50 (0.40-0.63)	<0.001	0.88 (0.59-1.29)	0.501
No prior liver disease	0.54 (0.42-0.68)	<0.001	1.11 (0.62-1.98)	0.727
Liver cirrhosis [a]				
Yes, compensated	1.0 (ref)		1.0 (ref)	
Yes, decompensated	0.23 (0.19-0.28)	<0.001	0.41 (0.31-0.55)	<0.001
No	0.40 (0.33-0.48)	<0.001	0.82 (0.52-1.98)	0.727
Comorbidity				
Hypertension	1.19 (1.03-1.37)	0.016	1.14 (0.89-1.47)	0.287
Type 2 diabetes	0.99 (0.86-1.14)	0.882		
Coronary artery disease	0.68 (0.56-0.82)	<0.001	0.96 (0.71-1.30)	0.782
ECOG PS				
0	1.0 (ref)		1.0 (ref)	
1	0.34 (0.28-0.41)	<0.001	0.45 (0.36-0.59)	<0.001
≥2	0.04 (0.03-0.05)	<0.001	0.07 (0.05-0.09)	<0.001
Tumor size (mm)				
<20	1.0 (ref)		1.0 (ref)	
20-30	0.86 (0.67-1.14)	0.260	0.95 (0.66-1.37)	0.788
>30	0.17 (0.14-0.20)	<0.001	0.19 (0.14-0.26)	<0.001
Number of tumors				
1	1.0 (ref)		1.0 (ref)	
2-3	0.58 (0.49-0.69)	<0.001	0.43 (0.33-0.55)	<0.001
>3	0.16 (0.12-0.21)	<0.001	0.14 (0.10-0.21)	<0.001
Tumor thrombosis or PVT	0.07 (0.05-0.11)	<0.001	0.18 (0.11-0.28)	<0.001
Regional metastasis	0.10 (0.07-0.15)	<0.001	0.30 (0.17-0.53)	<0.001
Extrahepatic metastasis	0.05 (0.03-0.07)	<0.001	0.16 (0.09-0.30)	<0.001
Year of diagnosis				
2012	1.0 (ref)		1.0 (ref)	
2013	1.57 (1.17-2.10)	0.002	1.55 (0.99-2.44)	0.054
2014	1.74 (1.31-2.32)	<0.001	2.63 (1.67-4.14)	<0.001
2015	1.76 (1.32-2.35)	<0.001	2.31 (1.47-3.64)	<0.001
2016	1.40 (1.05-1.86)	0.021	1.43 (0.93-2.21)	0.105
2017	1.43 (1.07-1.91)	0.015	1.86 (1.19-2.91)	0.007
2018	1.85 (1.39-2.44)	<0.001	1.81 (1.17-2.80)	0.007

ArLD: Alcohol-related liver disease; CI: Confidence interval; NAFLD: Non-alcoholic fatty liver disease; OR: Odds ratio; PVT: Portal vein thrombosis. Household income was defined as disposable income per household per consumption unit. Results from univariable and multivariable regression models. Treatments with curative intention were defined as liver transplantation, resection, and ablation. The multivariable model, which included all variables with adjusted ORs (aORs) shown, was statistically significant compared to the null model (Chi-square (28) = 1570.46, p<0.001), and correctly classified 83% of the cases (sensitivity of 85%, specificity 80%).
[a] Decompensated cirrhosis is defined as ascites or encephalopathy or bilirubin≥52 µmol/L or albumin<28 g/L.

Resultat: Of 3473 patients, 1598 (46 %), 1439 (41 %), and 436 (13 %) had low, medium, and high household incomes. The median age at diagnosis was 69 years and most patients were male (76 %). A total of 1247 (36 %) received treatment with curative intention: transplantation (n=227), resection (n=530), or ablation (n=490). Household income was associated with increased likelihood of receiving curative treatment after adjustment for available confounders. Compared to patients with a low household income, the odds ratio (OR) for receiving curative treatment for those with medium and high household income were 1.40 (95 % Confidence Interval [CI]=1.20-1.62) and 2.20 (95 %CI=1.77-2.73), respectively (Table 1). In the fully adjusted model, these estimates were slightly attenuated: adjusted-OR 1.31 (95 %CI=1.03-1.68) and adjusted-OR 1.94 (95 %CI=1.36-2.78), respectively.

Slutsats: A higher household income level was associated with a higher likelihood of receiving curative treatment in HCC. Further efforts are needed to examine mechanisms explaining this association. Efforts are needed to counteract the negative impact of health inequity in the management of patients with HCC.

P.67

Imaging-based test for physical frailty and sarcopenia – interim results from the prospective cirrhosis cohort study ACCESS-ESLD.

Leversjukdomar
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Bakgrund: Physical frailty and sarcopenia is common in liver cirrhosis. Physical frailty can be assessed with e.g., Short Performance Physical Battery (SPPB) and sarcopenia with imaging. A magnetic resonance imaging assessment, referred to as Muscle Assessment Score (MAsS), of thigh muscle fat infiltration (MFI) for quality and fat-free muscle volume (FFMV) z-score (MVZ) for quantity, is used to describe muscle health, and to detect muscle composition (MC) phenotypes, especially adverse MC (i.e., high MFI and low MVZ). The aim was to assess the association between MAsS to other physical frailty and sarcopenia tests, and MC phenotypes prevalence in patients with cirrhosis.

Metod: ACCESS-ESLD is a prospective study in which patients with liver cirrhosis are included. MAsS, FFMV index (FFMV/height^2; FFMVi), and L3 skeletal muscle index (L3-SMI) was measured using AMRA® Researcher on the same day as SPPB. SPPB was grouped as moderate (7-9) and high (10-12) function. MC phenotypes were defined according to literature, and Spearman's rank and t-test were used.

Resultat: 30 patients have been included so far (18 males), BMI 30±7 kg/m^2, age 65 (46–79) yrs. MFI was significantly increased with reduced physical function (+2.2pp p=0.043), there was no difference in FFMVi, MVZ, nor L3-SMI. Both FFMVi and MVZ correlated with L3-SMI (r=0.86 and r=0.49, p<0.05, respecitvely). MFI did not correlate with L3-SMI nor FFMVi. Of the 30 patients, 6 patients had adverse MC, 1 only high fat, 7 only low volume, and 16 were normal (**Figure 1**).

Slutsats: These interim results show that thigh measurements of muscle volume strongly correlated with muscle area at the 3rd lumbar level. Furthermore, MFI was significantly increased with moderately reduced physical function. Also, prevalence of adverse MC and low muscle quantity were 20 %, and 43 %, respecitvely. Taken together, it may be possible to use single MR-based test, MAsS, to assess both physical frailty and sarcopenia.

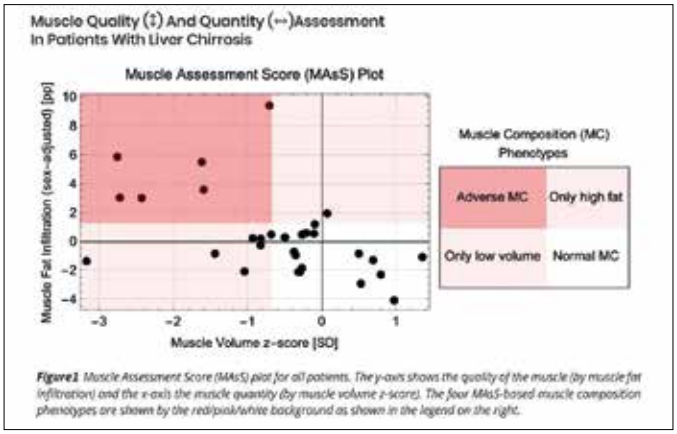

Figure1 Muscle Assessment Score (MAsS) plot for all patients. The y-axis shows the quality of the muscle (by muscle fat infiltration) and the x-axis the muscle quantity (by muscle volume z-score). The four MAsS-based muscle composition phenotypes are shown by the red/pink/white background as shown in the legend on the right.

P.68

Incidence, Prevalence and Mortality of Chronic Liver Diseases in Sweden Between 2005 and 2019.

Leversjukdomar

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Bakgrund: Chronic liver diseases affects approximately 844 million individuals. The most common causes are chronic viral hepatitis, alcohol-related liver disease and non-alcoholic fatty liver disease, however the landscape of liver diseases is shifting. In this study, we describe the incidence, prevalence, and mortality of a wide range of chronic liver diseases in Sweden.

Metod: In this register-based, nationwide observational study, patients with a register-based diagnosis of chronic liver disease, during 2005-2019, were retrieved from the Swedish National Board of Health and Welfare. Annual age-standardized incidence and mortality rates, and prevalence per 100,000 inhabitants was calculated and stratified on age, sex, and geographical region.

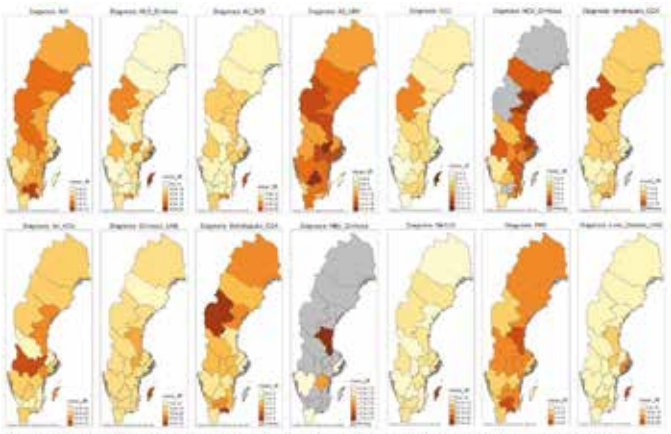

Figure 1. Mean annual incidence rate per 100,000 inhabitants for each diagnosis stratified on region, during 2005-2019.

Note, different scales are used for the coloring of the heat maps.

Resultat: The incidence of alcohol-related cirrhosis increased by 47 % (2.6 % annually) reaching an incidence rate of 13.1/100,000. The incidence rate of non-alcoholic fatty liver disease and unspecified liver cirrhosis increased by 217 % and 87 % (8.0 and 4.3 % annually), respectively, reaching an incidence rate of 15.2 and 18.7/100,000, and a prevalence of 24.7 and 44.8/100,000. Furthermore, incidence rates of chronic hepatitis C steeply declined, while autoimmune hepatitis increased (3.4/100,000). In parallel with the increasing incidence of liver cirrhosis, liver malignancies have become more common. The most common causes of liver related mortality were alcohol-related disease without a code for cirrhosis, alcohol-related cirrhosis, and unspecified liver disease. Most liver diseases were more frequent amongst men. Furthermore, varying differences was seen regions, with some etiologies (*e.g.* autoimmune liver diseases) being more common in rural areas (Figure 1).

Slutsats: The incidence rates of non-alcoholic fatty liver disease, alcohol-related cirrhosis and unspecified liver cirrhosis has increased in parallel with a decreasing incidence of viral hepatitis. Worryingly, mortality in several liver diseases increased, likely reflecting the increasing incidence of cirrhosis. Significant disparities of liver diseases exist across sex and geographical regions, which needs to be considered when allocating healthcare resources.

P.69

Long-term liver-related events in 1,260 patients with non-cirrhotic NAFLD.

Leversjukdomar

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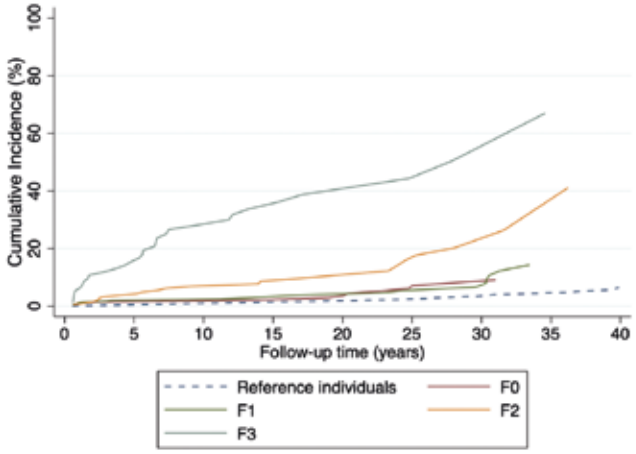
Bakgrund: Previous studies on the prognosis of NAFLD have been limited to less than 1000 patients, have short follow-up time or low granularity. Here, we aimed to investigate the long-term prognosis of a large cohort of patients with NAFLD regarding the risk of liver-related events (LRE).

Metod: Patients with a diagnosis of NAFLD through biopsy, vibration-controlled transient elastography (VCTE), or as a clinical diagnosis from three Swedish university hospitals between 1974-2020 were followed up until 2020. Each NAFLD patient was matched on age, sex and municipality with up to ten reference individuals, identified from the Swedish Total Population Register. LRE was defined as clinically recorded diagnoses of cirrhosis, decompensated cirrhosis, HCC, liver-related death, or ascertained through linkage to Swedish national registers. Cox regression and Harrell's C-statistic were performed to estimate the rate of LRE and assess model discrimination.

Resultat: 1,260 non-cirrhotic NAFLD patients and 12,529 matched individuals were included. 904 (71.8 %) patients were diagnosed through biopsy, 118 (9.4 %) through VCTE and 238 (18.9 %) through a clinical diagnosis. During follow-up, 339 outcomes occurred in the NAFLD group, and 597 in the reference individuals, translating to a higher rate of LRE (HR: 6.6; 95 % CI 5.2-8.5) in NAFLD. In patients with biopsy-diagnosed NAFLD, the predictive ability of FIB-4 showed a similar C-statistic as compared to biopsy for prediction of LRE at 5 years (0.713 for FIB-4 vs 0.701 for biopsy) and at 10 years (0.728 vs 0.734). In the full cohort, C-statistic reflecting FIB-4's prediction of LRE at 5 years and 10 years were 0.724 and 0.730, respectively.

Slutsats: The cumulative incidence of liver-related outcomes was considerable in this large cohort of patients with NAFLD and fibrosis stage 2-3. Prognostic information from the biopsy was comparable to FIB-4, although both modalities had a modest discriminative ability. New prediction models are needed in NAFLD.

Figure 1. Cumulative incidence of liver-related outcomes stratified on fibrosis stage and compared against reference individuals from the general population.



P.70

Muscle composition, but not liver fat, predicts all-cause mortality in the UK Biobank imaging study.

Leversjukdomar

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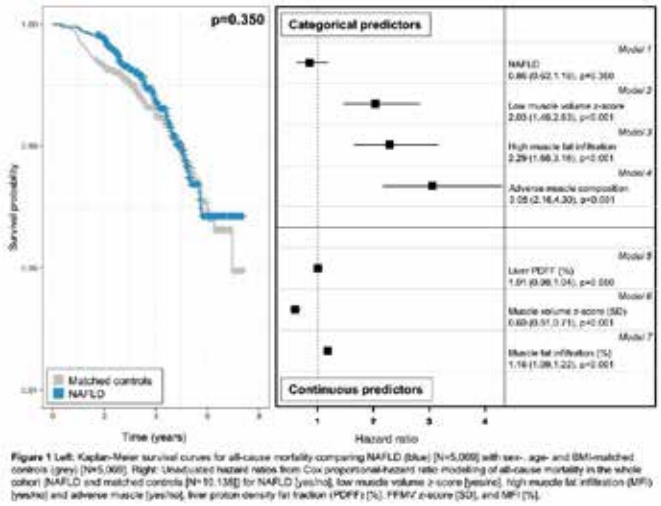
Bakgrund: The aim of this study was to investigate associations of all-cause mortality with liver fat, NAFLD, and muscle composition in the UK Biobank imaging study.

Metod: Magnetic resonance images were collected in 40,174 participants, including liver proton density fat fraction (PDFF), total thigh fat-free muscle volume (FFMV) and anterior thigh muscle fat infiltration (MFI) using automated image analysis (AMRA® Researcher). Participants with NAFLD (liver PDFF>5 % & low alcohol consumption) were matched 1:1 by sex, age, and BMI to participants without NAFLD. Adverse muscle composition was identified using previously published cut-offs for high MFI and low FFMV z-score. The associations of NAFLD and muscle composition with all-cause mortality were investigated using Kaplan-Meier survival curves and Cox proportional-hazard modelling. Predictors were: NAFLD [yes/no], 'high MFI' [yes/no], 'low FFMV z-score' [yes/no] and 'adverse muscle composition' [yes/no], liver PDFF [%], MFI [%], and FFMV z-score [SD]. As sensitivity analysis, Cox models were implemented using all participants (N=40,174), both crude (cHR) and adjusted (aHR) for sex, age, and BMI.

Resultat: 5,069 participants had NAFLD. During a mean (±SD) follow-up of 3.9 (±1.4) years, 150 out of the 10,138 participants (63 % men, age 64.4 [±7.6] years and BMI 29.7 [±4.4] kg/m^2) died. The most common causes of death were ischaemic and other forms of heart diseases. Neither NAFLD nor liver PDFF were significantly associated with all-cause mortality, while all muscle composition variables achieved significance (**Figure 1**). The sensitivity analysis showed similar results, *i.e.* NAFLD was not predictive of all-cause mortality (cHR 1.07 [0.83,1.37], p=0.670; aHR: 0.93 [0.71,1.21], p=0.567) and neither was liver PDFF (cHR 1.02 [1.00,1.03], p=0.098; aHR 1.00 [0.98,1.02], p=0.860). All muscle composition variables showed significant associations with all-cause mortality both in crude and adjusted models.

Slutsats: Neither NAFLD nor liver fat were predictive of all-cause mortality in the UK Biobank imaging study. Muscle composition were significantly associated with all-cause mortality.



P.71

Predicting severe liver outcomes in NAFLD using repeated measurements of biomarkers-a cohort study in 1,260 patients.

Leversjukdomar

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Bakgrund: Non-invasive biomarkers measured at a single time have prognostic information for severe liver disease (SLD) development in patients with NAFLD, but these biomarkers may change over time and the predictive capacity of the changes has yet to be determined. Herein, we aimed to assess if changes in biomarkers could predict SLD in patients with NAFLD better than the same biomarkers measured at a single time.

Metod: We used a retrospective cohort of 1,260 patients with non-cirrhotic NAFLD from three university hospitals in Sweden between 1974 and 2019. Biomarkers were measured at baseline and at follow-up visits. SLD including cirrhosis, decompensated cirrhosis, hepatocellular carcinoma, liver failure, liver transplantation or MELD score over 15 were determined through medical charts or linkage to national registers until 2020. We used multivariable Cox regression to determine baseline risk factors and biomarkers associated with SLD. We quantified the associations between the trajectory of biomarkers (including current value and slope) and the risk of SLD using a joint modeling approach.

Resultat: The median age at NAFLD diagnosis was 52 and 59 % were male. During a median follow-up of 12.2 years, 111 (8.8 %) patients developed SLD. Higher AST, higher FIB-4, and lower platelets at baseline were associated with a higher SLD risk after adjusting for metabolic factors and fibrosis stage. The joint modeling showed that higher current value of FIB-4 (HR 2.96, 95 % CI 2.08-4.26), AST (HR 2.48, 1.85-3.34), and lower platelets (HR 0.99, 0.99-1.00) was associated with increased risk of SLD, whereas the rate of change in these biomarkers had no significant association to SLD risk.

Slutsats: In addition to the baseline measurement of FIB-4, AST, and platelets taken at NAFLD diagnosis, monitoring their value over time is essential as the current value is closely associated with SLD risk. The rate of change may not affect the prognosis to SLD.

Table 1 The association between repeated values of the AST, platelets, FIB-4 and the event of SLD from joint modeling

Current value of biomarker level *	HR#	95% confidence interval	p-value
log (AST), µkat/L	2.96	2.08-4.26	<0.001
Platelets, 10^9/L	0.99	0.99-1.00	<0.001
log (FIB4)	2.48	1.85-3.34	<0.001
Instantaneous slope of temporal pattern**			
log (AST)-slope	0.37	0.11-1.58	0.188
log (AST)-value, µkat/L	3.43	2.38-5.06	<0.001
Platelets-slope	1.00	0.98-1.02	0.618
Platelets-value, 10^9/L	0.99	0.99-1.00	0.002
log (FIB4)-slope	1.40	0.38-5.39	0.591
log (FIB4)-value	2.60	1.84-3.84	<0.001

#HR includes the baseline covariates: age, sex, type 2 diabetes, hyperlipidemia, body mass index, fibrosis stage.
* The basic joint model, which combines a linear mixed submodel of biomarkers and a survival submodel of time to SLD.
** The slope of the marker is modeled and added to the basic joint model.

P.72

Risk of cancer and subsequent mortality in Primary Biliary Cholangitis: A population-based cohort study of 3,052 patients.

Leversjukdomar

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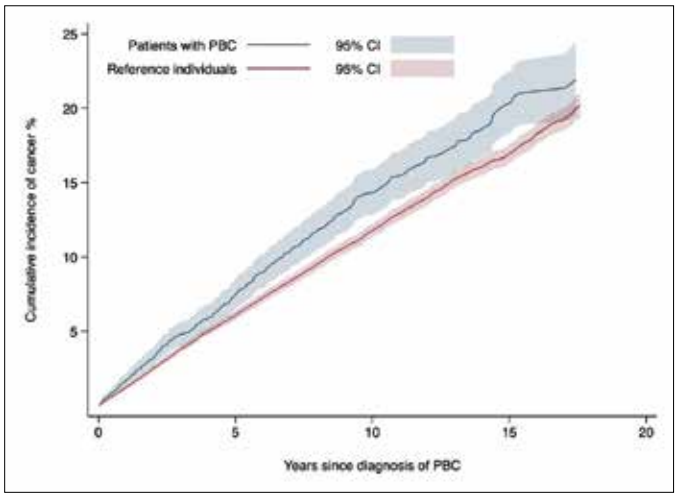
Bakgrund: Previous studies have described an increased risk of hepatocellular carcinoma (HCC) in patients with primary biliary cholangitis (PBC), but the risk of non-hepatic cancer and the cancer risk across subgroups is largely unknown.

Metod: We used the Swedish National Patient Register to identify all patients who were newly diagnosed with PBC 2002-2019. Patients were matched for age, sex, and municipality with up to ten reference individuals from the general population. Incident cancer was recorded from the National Cancer Register. Cox regression was used to investigate the rates of cancer and post-cancer mortality. The cumulative incidence of cancer was calculated while accounting for the competing risk of death.

Resultat: We identified 3,052 patients with PBC and 26,792 reference individuals and followed them for a median of 5.5 and 7.0 years, respectively. The ten-year cumulative incidence of any cancer in patients with PBC was 14.3 % (95 % confidence interval [CI] 12.8-15.9), compared to 11.8 % (95 %CI 11.3-12.2) in the reference population (adjusted hazard ratio [aHR] 1.4, 95 %CI 1.2-1.5). Although the rate of HCC was particularly high (aHR 30.9; 95 %CI 14.8-64.6), PBC was also associated with non-HCC cancer (aHR 1.2, 95 %CI 1.1–1.4), including gastrointestinal (aHR 1.5, 95 %CI 1.1-1.9), lung (aHR 1.5, 95 %CI 1.1-2.2) and lymphoma (aHR 2.9, 95 %CI 1.9-4.6). The cancer rates were similarly increased across age and sex subgroups, but more prominently increased in patients with cirrhosis (aHR 2.1; 95 %CI 1.4-3.0). Following a diagnosis of cancer, patients with PBC had higher one-year mortality rates compared to reference individuals (aHR 1.4, 95 %CI 1.1-1.8), which was mainly driven by HCC (non-HCC related mortality: aHR 1.2, 95 %CI 0.9-1.6).

Slutsats: Patients with PBC have a significantly higher risk of cancer compared to the general population. PBC was associated with both HCC and non-hepatic cancers as well as higher mortality following a diagnosis of cancer.



P.73

Risk of fractures and post-fracture mortality in primary biliary cholangitis: A population-based cohort study of 3,980 patients.

Leversjukdomar

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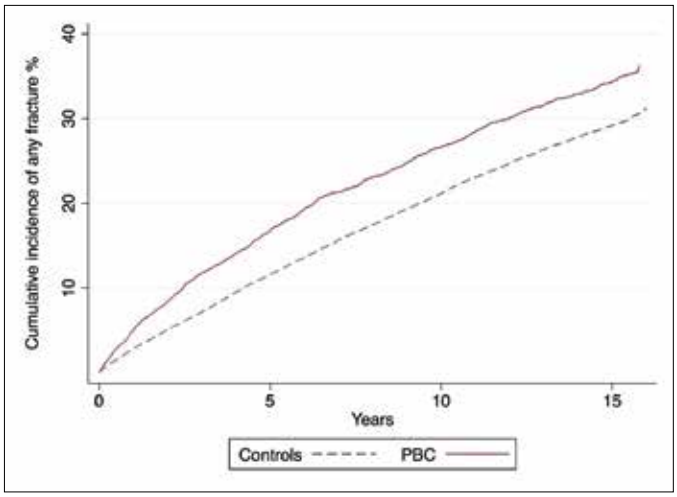
Bakgrund: Morbidity in primary biliary cholangitis (PBC) is multifactorial. Osteoporosis related to cholestasis is an extrahepatic complication of PBC. It is not fully established to what extent patients with PBC have an increased risk for fractures, and if mortality after a fracture is increased, compared to the general population.

Metod: All Swedish patients with PBC diagnosed between 2001 and 2016 were identified from the National Swedish Patient Register, using International Classification of Disease (ICD-10) codes. Incident fractures were ascertained in the same register and compared to matched controls from the Swedish general population (1:10 for age, sex, and municipality). Cox regression was used to investigate the rates of fractures and post-fracture mortality. The cumulative incidence of fractures was calculated while accounting for competing risks (death or liver transplantation).

Resultat: Patients with PBC (n=3,980) showed a higher risk of fractures at all time points during follow-up compared to matched controls (n=37,196), which was seen both in men and women. At five years of follow up, the cumulative incidence of any fracture in patients with PBC was 16.8 % (95 % CI 15.6-18.1), compared to 11.6 % (95 % CI 11.3-12.0) in controls. The rate of osteoporotic fractures was particularly high (aHR 1.9, 95 % CI 1.7-2.0). The 30-day as well as the 1-year mortality

after a fracture was significantly higher in patients with PBC compared to controls with an identical fracture (aHR 2.2, 95 % CI 1.5-3.2; aHR 2.0, 95 % CI 1.7-2.4).

Slutsats: Patients with PBC have a significantly higher risk of fractures and post-fracture mortality compared to matched controls from the general population.



P.74

Risk of injury before and after diagnosis of cirrhosis: a self-controlled case series study.

Leversjukdomar

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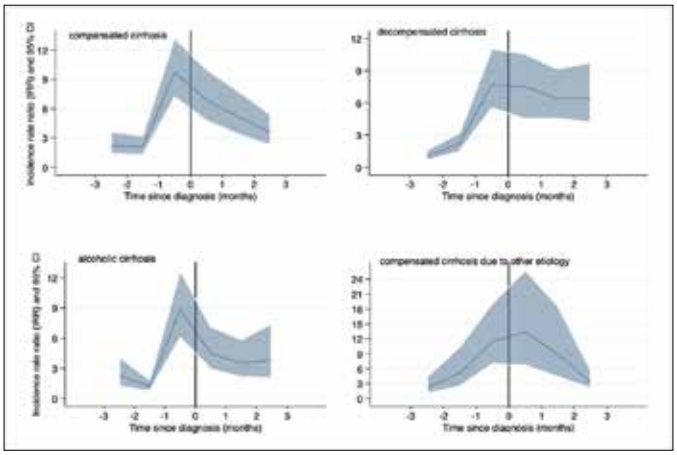
Bakgrund: Cirrhosis is often asymptomatic prior to decompensation. Still, cognitive impairment, and sarcopenia may be present before decompensation, possibly increasing the risk of injuries. We estimated the risk of injuries during the period shortly before and after cirrhosis diagnosis.

Metod: All patients (N=59 329) with a diagnosis of cirrhosis from 1997 to 2019 were identified from the Swedish National Patient Register (NPR). We used a self-controlled case series design to estimate the risk of injuries by comparing the incidence rates (IR) during a "diagnostic period" (3 months before and after diagnosis date) to a self-controlled "pre-diagnostic period" (the same 6 calendar months 3 years before diagnosis date), using conditional Poisson regression. Injuries were ascertained from the NPR.

Resultat: We identified 23 738 (40 %) patients with compensated and 35 591 (60 %) with decompensated cirrhosis. There were 484 (IR 1.4/1 000 person-months) during the pre-diagnostic period, and 1 991 injuries (IR 6.6/1 000 person-months) identified during the diagnostic period. The incidence rate ratio (IRR) was 7.3 (95 % CI 6.6-8.1) during the diagnostic period compared to pre-diagnostic period. The risk of injuries was highest for falls and fractures. For patients with compensated cirrhosis, the risk of injuries started to increase around two months before diagnosis, with the highest risk increase noted one month *prior to* cirrhosis diagnosis but was reduced after the diagnosis of cirrhosis. For patients with decompensated cirrhosis, the increase in risk was also highest one month before cirrhosis diagnosis, but the level of increased risk of injuries remained after cirrhosis diagnosis (Figure).

Slutsats: Patients with cirrhosis have an increased risk of injuries shortly before and after diagnosis. These findings indicate that cirrhosis is frequently diagnosed in conjunction with an injury, but also highlight the need for injury prevention after cirrhosis diagnosis, especially in patients with decompensated cirrhosis.



P.75

Secondary prevention of variceal bleeding is often imperfect: A national, population-based cohort study of 5,018 patients.

Leversjukdomar

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Bakgrund: Secondary prevention of variceal bleeding is important to improve prognosis, but uptake of guidelines is unknown in a real-world setting. Here, we determined the proportion of patients receiving appropriate beta-blocker treatment and repeat upper endoscopy after a first episode of variceal bleeding within a reasonable timeframe.

Metod: Population-based registers were used to identify all patients with a first episode of variceal bleeding in Sweden, 2000-2020. Cross-linkage between registers was performed to receive information on the cumulative incidence of patients with a dispensation of beta-blockers within 30 days and repeat upper endoscopy within 120 days from baseline. Overall mortality was investigated using Cox regression.

Resultat: In total, 5,018 patients were identified, with a median age of 62 years (IQR=54-71). Of patients not on previous beta-blocker therapy, the cumulative incidence of a dispensation of beta-blockers within 30 days was 54.3 %. The cumulative incidence of repeat endoscopy was 34.5 % within 120 days. Overall mortality was high, with 71.2% of patients dying after variceal bleeding during the full follow-up period (median 1.8 years). We observed an improved overall mortality during the later years of the study period (adjusted hazard ratio for the 2016-2020 period compared to the 2000-2005 period:0.84, 95 %CI=0.75-0.93). Patients with beta-blockers and repeat upper endoscopy had better overall survival compared to those without, respectively.

Slutsats: Secondary prevention of variceal bleeding has not been widely undertaken, with many patients not receiving guideline-supported interventions within a reasonable timeframe. This highlights a need to raise awareness on appropriate prevention strategies to clinicians and patients.

P.76

Six-fold increased rate of chronic kidney disease after acute kidney injury: A population-based cohort study of 46,946 patients with cirrhosis.

Leversjukdomar

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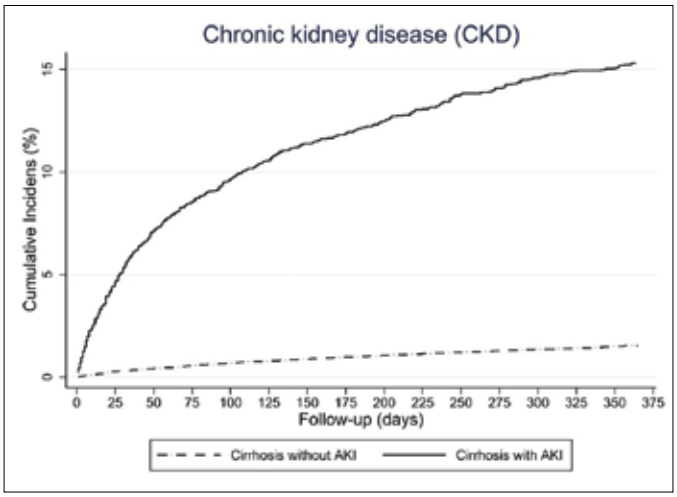
Bakgrund: Patients with cirrhosis have a high risk for acute kidney injury (AKI). The risk of developing subsequent chronic kidney disease (CKD) is not well known. Here, we investigated the risk for CKD after an episode of AKI in cirrhosis.

Metod: Using Swedish national health registers, we identified all persons diagnosed with cirrhosis between 1988 and 2020. Cox regression was used to assess rates of incident CKD in patients with cirrhosis and an episode of AKI, compared to patients with cirrhosis without AKI. The cumulative incidence of CKD in both groups was calculated considering non-CKD related mortality as a competing event.

Resultat: We identified 46,946 patients with cirrhosis, 30,082 (64.1 %) were men, and the median age was 63 years. The median time to follow-up for all patients was 2.1 (IQR 0.5-5.7) years. AKI was diagnosed in 2,873 (6.1 %) patients, of whom 19.6 % developed CKD, compared to 5.2 % of patients without AKI. The incidence rate of CKD in patients with AKI compared to those without was 133.0 vs. 12.5 per 1,000 person-years (adjusted HR=6.5, 95 %CI=5.9-7.2) and the cumulative incidence of CKD at 90 days was 9.1 % and 0.6 %, respectively. Furthermore, the kidney-related mortality rate was also considerably higher (adjusted HR=7.3, 95 %CI=6.4-8.4) in patients with AKI.

Slutsats: Patients with cirrhosis and AKI have a more than six-fold increased rate of CKD, as well as a higher short-term kidney-related mortality compared to cirrhosis patients without AKI.



P.77

Time trends for mortality and life expectancy in 22,658 patients hospitalized with alcohol-related cirrhosis in Sweden: A nationwide cohort study.

Leversjukdomar

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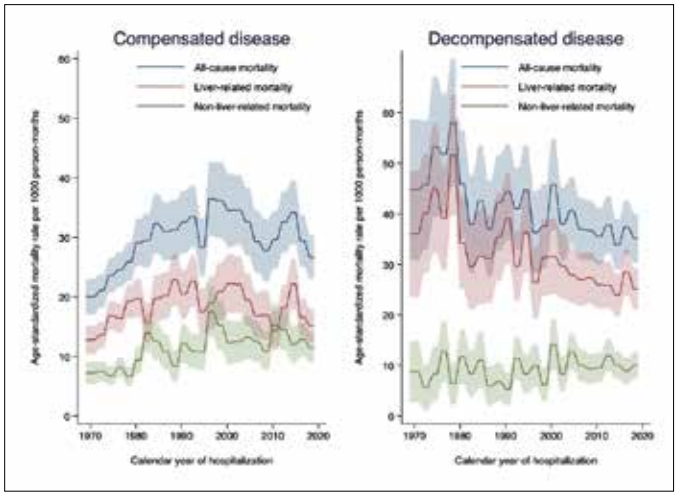
Bakgrund: The management of alcohol-related cirrhosis has improved the last decades, but whether this has affected the patients' prognosis is uncertain. We aimed to assess time trends for mortality and life expectancy in patients hospitalized with alcohol-related cirrhosis.

Metod: In this population-based cohort study, we used Swedish national population and health registers to identify all patients hospitalized with a first episode of alcohol-related cirrhosis 1969-2019 (n=22,658). Time trends for one-year mortality were assessed with multivariable Cox regression. A flexible parametric model was fitted to evaluate loss in life expectancy.

Resultat: Mortality was similar in the 2010s as in the 1980s (hazard ratio [HR]=1.00, 95 % confidence interval [CI]=0.93-1.08, p_{trend}=0.767). Patients with decompensated cirrhosis had a trend of declining mortality (HR=0.87, 95 %CI=0.77-0.99, p_{trend}=0.014), driven by reduced liver related mortality (HR=0.80, 95 %CI=0.69-0.92, p_{trend}<0.001). When adjusting for baseline characteristics, overall mortality was lower in the 2010s than in the 1980s (adjusted HR=0.74, 95 %CI=0.68-0.80), with consistent results for both compensated and decompensated cirrhosis. The average loss in life expectancy for patients with alcohol-related cirrhosis compared to the general population decreased over time but remained large in the 2010s (14.3 years shorter, 95 %CI=13.7-14.9, in men and 15.8 years, 95 %CI=14.9-16.7, in women).

Slutsats: There was a declining trend for mortality in patients hospitalized with alcohol-related cirrhosis when accounting for baseline characteristics but the loss in life expectancy remains substantial. This underscores the need for new therapeutic options and health policy interventions to further improve the dismal prognosis and life expectancy of patients with alcohol-related cirrhosis.



Omvårdnadsforskning

P.78

Fellowship för sjuksköterskor på Hepatologen Karolinska universitetssjukhuset.

Omvårdnadsforskning

N. Sjölund[1]
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Bakgrund: Då Karolinska Universitetssjukhuset är ett Comprehensiv Cancer Center, så ingår det att dela med sig av den specifika kunskap som vi besitter. För att ge våra patienter den bästa vården som det går är det viktigt att informationen finns i hela ledet, att patienterna får kunskap och trygghet i sin sjukdom. Denna svåra grupp av patienter har stort omvårdnadsbehov, vilket, om man inte besitter kunskap och trygghet i att behandla dessa pt leder ibland till ökat lidande. Vi inom vår verksamhet känner även av ett behov av att få egen vidareutveckling och önskar att andra vill komma till oss och dela med sig av sina egna idéer och erfarenheter.

Metod: Ett två veckor långt Fellowship-program på avdelning B72/hepatologflödet. Fokus läggs på individuell planering av Fellowship-perioden. Planeringen utgår från deltagarens individuella mål utifrån erfarenhet, intresse och behov. Dock kommer några obligatoriska moment att ingå som hospitering på Dagvården/Bedömningsenheten och mottagningen följa dietist och transplantationskoordinator samt delta vid våra specifika behandlingar. Deltagaren får utveckla både teoretiska och praktiska kunskaper kring vilka sjukdomar som föranleder inläggning hos oss på Hepatologen Karolinska Universitetssjukhuset. Programmet kommer att utvärderas genom enkäter till deltagare samt medarbetare samt med en muntlig utvärdering i samband med avslutad Fellowship period med varje deltagare.

Resultat: Förväntat resultat är att ett nationellt nätverkande och kunskapsutbyte som bör ge en mer jämlik vård för den hepatologiske patienten

Slutsats: Främja nationellt kompetensutbyte och nätverksskapande för att säkerställa jämlik vård för den hepatologiskt sjuka patienten oavsett geografisk tillhörighet.

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Patienters uppfattning om vårdpersonalens bemötande efter genomgången cancerkirurgi i mag-tarmkanalen – En fenomenografisk studie.

Omvårdnadsforskning

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Bakgrund: Att drabbas av en tumörsjukdom startar olika processer hos den drabbade såväl fysiska som psykiska, det är inte sällan som dessa patienter behöver någon form av kirurgisk behandling eller åtgärd. Det är en patientgrupp som ofta varit med om mycket, såväl fysiskt som psykiskt både innan, under och efter kirurgin.

Metod: En empirisk studie med kvalitativ design. Patienter (n=8), som genomgått cancerkirurgi i mag-tarmkanalen intervjuades enskilt och analysen gjordes enligt fenomenografisk ansats.

Resultat: Analysen resulterade i tre beskrivningskategorier: *(1) Vårdpersonalens betydelse, (2) Patientens delaktighet och (3) Patientens återhämtning*. Resultatet visade att vårdpersonalens förmåga att vårda och bemöta de patienter som genomgått cancerkirurgi i mag-tarmkanalen hade betydelse för hur patienterna uppfattade bemötandet de fick under sin vårdtid. Det visade sig att sättet vårdpersonalen samtalade med patienterna på, om det gavs möjlighet till delaktighet i sin egen vård och att de erbjöds stödjande insatser för att kunna återhämta sig var av betydelse.

Slutsats: Resultatet påvisade att vårdpersonalens bemötande efter genomgången cancerkirurgi har betydelse för patienterna de möter. Ökad kunskap om patienters uppfattning efter genomgången cancerkirurgi i mag-tarmkanalen kan leda till bättre stöd i form av personcentrerad omvårdnad vilket underlättar för patienternas återhämtning

Det är ingen nyhet att Asacol® (mesalazin) har bevisad effekt vid måttligt svår ulcerös kolit. I registreringsstudien[2] för 1600 mg hade 95 % av patienterna måttlig UC. Alla patienter startade på en dos om 2 tabletter (3,2 g/dag). För de som inte svarat på behandlingen efter 8 veckor höjdes dosen till 4,8 g dagligen (3 tabletter). 81 % (199/243) av patienterna svarade på behandlingen efter ytterligare 8 veckor. Som sagt, Asacol har bevisad effekt vid måttlig UC och dessutom talar riktlinjerna sitt tydliga språk **– dosoptimera före byte till annan läkemedelsklass.**[3]

Referenser: 1. Asacol produktresumé, 2022-12-22. 2. D'Haens et al, incl. supplementary data, Aliment Pharmacol Ther. 2017 Aug;46(3):292-302. 3. Läkemedelsverket, Behandlingsrekommendation vid inflammatorisk tarmsjukdom (IBD), "Generell rekommendation för farmakologisk behandling vid UC utifrån sjukdomsaktivitet", 2021.

Asacol 1600 mg tablett med modifierad frisättning (mesalazin) Rx, F. ATC-kod A07EC02. **Indikation:** Ulcerös kolit hos patienter ≥18 år. För behandling av mild till måttlig akut sjukdom. Underhållsbehandling vid remission. **Kontraindikationer:** Överkänslighet mot salicylater (inklusive mesalazin) eller mot något hjälpämne som anges i avsnitt 6.1 i produktresumén. Svår leverfunktionsnedsättning. Svår njurfunktionsnedsättning (GFR < 30 ml/min/1,73 m²) För information om dosering, varningar/försiktighet, biverkningar och pris se www.fass.se. **Produktresumé** 2022-12-22.

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Entyvio® (vedolizumab) är indicerat för behandling av vuxna patienter med ulcerös kolit, Crohns sjukdom och pouchit med måttlig till svår sjukdomsaktivitet.[1†]

TID FÖR TARM-SELEKTIVITET*

MED TIDIG KONTROLL‡ OCH LÅNGSIKTIG REMISSON§

Entyvio är den enda tarmselektiva biologiska behandlingen vid UC, CD och pouchit† utan någon identifierad systemisk immunsuppressiv effekt. Entyvio har visat tidig kontroll‡, långsiktig remission§ samt ökad livskvalitet jämfört med placebo. Entyvio finns både som intravenös och subkutan underhållsbehandling vilket möjliggör en flexibel administrering utifrån patientens behov.[1]

Flexibel# administrering utifrån patientens behov

Entyvio® vedolizumab | DESIGNAD FÖR IBD*

C-APROM/SE/ENTY/0079 NOV -22

UC; ulcerös kolit, CD; Crohns sjukdom

†Gäller enbart 300 mg pulver till koncentrat till infusionsvätska för intravenös infusion. *Entyvio är en tarmselektiv integrinantagonist utan någon identifierad systemisk immunosuppressiv aktivitet som enbart är indicerad för ulcerös kolit, Crohns sjukdom och pouchit (enbart i.v.).[1] ‡klinisk respons 47 % i vecka 6 vid UC jämfört med placebo 26 % (p< 0,0001), klinisk remission 15 % i vecka 6 vid CD jämfört med placebo 7 % (p< 0,05)[1] §klinisk remission 46 % vid vecka 52 vid UC jämfört med placebo 14 % (p< 0,001), klinisk remission 48 % vid vecka 52 vid CD jämfört med placebo 34 % (p=0,008)[1] #Entyvio finns både som intravenös och subkutan underhållsbehandling vilket möjliggör en flexibilitet i val av behandling.

Referens: 1. Entyvio produktresumé 01/2022, fass.se

Entyvio® (vedolizumab) 300 mg pulver till koncentrat till infusionsvätska för intravenös infusion, 108 mg injektionsvätska, lösning i förfylld injektionspenna för subkutan injektion. **Farmakoterapeutisk grupp:** selektiva immunsuppressiva medel, **ATC-kod:** L04AA33. **Rx, (F). Subventionsbegränsning:** Subventioneras i andra linjen för patienter som inte nått behandlingsmålet med konventionell terapi och som inte är lämpliga för behandling med en TNFα-antagonist. Subventioneras i tredje linjen för patienter som inte nått behandlingsmålet med en TNFα-antagonist. **Indikationer:** För behandling av vuxna patienter med ulcerös kolit eller Crohns sjukdom med måttlig till svår sjukdomsaktivitet som inte svarat tillfredsställande på, som uppvisat avtagande behandlingssvar eller som är intoleranta mot konventionell behandling eller en TNFα-antagonist (antagonist mot tumörnekrosfaktor alfa). Enbart i.v.: För behandling av vuxna patienter med pouchit med måttlig till svår sjukdomsaktivitet, som har genomgått proktokolektomi med ileal reservoar (pouch) och anal anastomos på grund av ulcerös kolit och som inte svarat tillfredsställande, eller har uppvisat avtagande behandlingssvar, på antibiotika. **Kontraindikationer:** Överkänslighet mot den aktiva substansen eller mot något hjälpämne. Aktiva svåra infektioner som tuberkulos (tbc), sepsis, cytomegalovirus, listerios samt opportunistiska infektioner som progressiv multifokal leukoencefalopati (PML). **Varningar och försiktighet:** Entyvio® ska inte ges till patienter med aktiva, svåra infektioner förrän infektionen är under kontroll. Försiktighet ska iakttas hos patienter med en kontrollerad, kronisk, svår infektion eller hos patienter som tidigare har drabbats av återkommande svåra infektioner. Patienterna ska noga undersökas för infektioner före, under och efter behandlingen. Patienter ska övervakas under och efter infusion av Entyvio® för tecken på infusionsreaktioner. Den som administrerar Entyvio® intravenöst ska vara förberedd för, och kunnig i, att hantera eventuella anafylaktiska reaktioner. Under behandling med Entyvio® ska patienten övervakas med avseende på nya eller förvärrade neurologiska symtom som beskrivs i läkarnas utbildningsmaterial. Patienten ska förses med ett patientkort. Kvinnor i fertil ålder ska använda lämpliga preventivmedel under behandlingen och fortsätta göra det i minst 18 veckor efter avslutad behandling. Som en försiktighetsåtgärd bör användning av vedolizumab undvikas under graviditet, såvida inte nyttan klart överväger eventuella risker för både modern och fostret. Vid beslut om användning av vedolizumab till kvinnor som ammar ska behandlingens fördelar för modern och potentiella risker för barnet beaktas. För fullständig information om dosering, varningar och försiktighet, graviditet och amning, biverkningar, förpackningar och aktuella priser, se www.fass.se. **Datum för översyn av produktresumé:** 01/2022. **Kontakt:** Takeda Pharma AB, infosweden@takeda.com, tel. 08-731 28 00, www.takeda.se.

För mer information se **www.entyvio.se**

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