Abstracts DSGH Årsmøde Kolding 4.-5. september 2026

Foredrag holdes fredag d. 4. september

Foredragskonkurrence: Abstracts nr. 1-8; kl. 16.30-18.00

Korte foredrag (ePosterpræsentation) session 1: abstracts nr. 9-17, kl. 11.10-12.00

Korte foredrag (ePosterpræsentation) session 2: abstracts nr. 18-26, kl. 14.00-14.45

1. **NORDTREAT: a randomised, multicentre, biomarker-strategy design, open-label, controlled trial of top-down versus clinical management in newly diagnosed IBD**

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Background:
Substantial variation exists in early inflammatory bowel disease (IBD) disease management. Biomarkers predicting disease trajectories may enable personalised treatment. The NORDTREAT strategy-trial was designed to compare “top-down” treatment with standard clinical care in patients at increased risk of an aggressive IBD course, as defined by the prognostic NORDTREAT protein signature.

Methods:
NORDTREAT (NORdic inflammatory bowel disease TREATment; NCT05180175) was a randomised, multicentre, biomarker-strategy design, open-label, controlled trial conducted across 15 Nordic hospitals. Following screening, eligible adult with newly diagnosed IBD were randomised (1:1) to either access or non-access to the protein signature. In the access arm, patients displaying a high-risk profile received “top-down” (anti-TNF +/- immunomodulator) treatment, whereas low-risk patients were excluded. The non-access arm received standard care with stepwise treatment escalation at the investigator’s discretion (“standard care”). The primary endpoint was corticosteroid-free clinical and endoscopic remission at week 52, with surgery considered treatment failure. Secondary endpoints included endoscopic remission, cumulative corticosteroid exposure, and serious adverse events. Analyses were performed in the intention to treat population.

Results:
313 IBD patients (CD, n = 133 and UC/IBD-unclassified, n = 180) were randomised between February 2022 and March 2024. Median time from diagnosis to enrolment was 7 days. Among access-arm patients (n = 157), 24 (15%) had a high-risk profile. In the non-access arm, 29/156 (19%) patients were found after trial completion to have had a high-risk profile at baseline and of these 16 (55%) received advanced therapy after a median period of 15 days. The primary endpoint was achieved in 10/24 (42%) “top-down” and 8/29 (27%) “standard care” patients (absolute difference 15%; 95% CI -

11–41, p = 0.26). Endoscopic remission rates at week 52 were comparable (53% vs 53%, p = 0.99). Median cumulative cortisone equivalents was 1232 mg in top-down vs 1651 mg in “standard care” (p = 0.07). Hospitalization was numerically lower in “top-down” (n = 7 vs n = 13). One death was observed, in “standard care”. Post-hoc analyses showed numerically higher rates of achieving the primary endpoint in CD, 50% vs 11% (p=0.09), whereas rates were comparable in UC 36% vs 35% (p=0.97).

Conclusion:
A biomarker-guided “top-down” approach did not increase corticosteroid-free clinical and endoscopic remission at week 52 compared with standard care. However, a possible benefit was seen in CD, suggesting that early “top-down” could improve outcomes in this subgroup of patients even in the era of widespread use of advanced therapies.

2. Burden of MetALD and alcohol-related liver disease in the European general population: Insights from the 30,199-patient LiverScreen cohort

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Background and Aims: Alcohol-related liver disease (ALD) and metabolic dysfunction and ALD (MetALD) represent an under-recognized part of the steatotic liver disease spectrum, particularly at early, asymptomatic stages. Population-level data on their prevalence and fibrosis severity are limited, and the joint impact of alcohol and cardiometabolic risk factors remains poorly defined. We aimed to estimate the prevalence and severity of ALD and MetALD in the European general population using the LiverScreen cohort.

Method: We conducted a prospective screening study in individuals aged ≥40 years from the general population in nine European countries. We recorded demographic, clinical, and standard laboratory parameters, and assessed liver fibrosis using liver stiffness measurements (LSM). Individuals with LSM ≥8 kPa and/or ALT ≥1.5× the upper limit of normal were referred for hepatology consultation including liver biopsy in patients who agreed to the procedure.

Results: We included 30,199 individuals from the general population (mean age 58 ± 10 years; 57% women). Overall, 7.1% reported harmful alcohol use (women/men: ≥14/21 drinks/week) and 70% had at least one cardiometabolic risk factor. At inclusion, 31% had steatotic liver disease (ALD = 0.4%; MetALD = 2%; MASLD = 28%), while 69% had no steatotic liver disease. The prevalence of significant fibrosis was highest in ALD, with 10.9% having LSM ≥ 10 kPa, followed by MetALD (7.5%) and MASLD (4.3%). In patients with MetALD or ALD, only 5.2% had ALT ≥1.5× the upper limit of normal; however, exceeding this threshold was associated with a markedly higher risk of MetALD or ALD (odds ratio 3.4, 95% CI 2.4-4.5; $p < 0.001$). Among the 2,457 individuals referred for hepatology consultation, 331 underwent liver biopsy. Advanced fibrosis (≥F3) was present in 28% (93/331). Among biopsied patients with ALD or MetALD, 39% had advanced fibrosis, significantly higher than in those with MASLD (27%).

Conclusion: In this large, population-based cohort, ALD and MetALD accounted for a small proportion of patients with steatotic liver disease but were associated with a higher burden of advanced fibrosis. These findings underscore a substantial yet underrecognized burden of ALD and MetALD in the general population, highlighting the need for earlier and more systematic identification.

3. *Chlamydia trachomatis* and *Neisseria gonorrhoeae* in patients presenting with haemorrhagic proctosigmoiditis: a prospective cohort study

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Background: Patients presenting with proctitis or proctosigmoiditis are not routinely evaluated for sexually transmitted diseases (STIs), and the prevalence in this population remains uncertain. This study aimed to determine the prevalence of *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (NG) in patients with endoscopically verified haemorrhagic proctitis or proctosigmoiditis and to assess prevalence variation by disease characteristics, sex, and age.

Methods: This investigator-initiated multicentre cohort study was conducted across five Danish departments of gastroenterology. Patients presenting with suspected or established haemorrhagic proctitis or proctosigmoiditis, both confirmed by endoscopy, were offered rectal swabs for CT and NG testing.

Findings: A total of 165 patients were enrolled. Median patient age was 33 years (IQR 26·0–51·0), and 64 (38·8%) were men. Rectal CT infection was detected in 15 patients (9·1%), while NG was identified in one patient (0·6%) as a coinfection with CT. In patients with new-onset suspected proctitis or proctosigmoiditis, CT was detected in 10 (13·9%) of 72 patients, and it was found in 5 (5·4%) of 93 patients with an established diagnosis. Of the 15 patients with CT, 10 were women younger than 35 years, corresponding to a prevalence of 18·5% in this subgroup. In men, four of five CT-positive cases were men who have sex with men (MSM), all testing positive for *lymphogranuloma venereum* (LGV), whereas none of the CT-positive women had this serovar.

Interpretation: Rectal CT infection was identified in a high proportion of patients with proctitis or proctosigmoiditis. Routine rectal CT testing should be considered in the diagnostic evaluation of these patients, particularly in young women and MSM. STI diagnostics should be considered in future diagnostic guidelines for inflammatory bowel disease.

4. **Neurofilament light chain in cerebrospinal fluid and serum is associated with minimal hepatic encephalopathy and predicts development of overt hepatic encephalopathy**

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Background and aim: Minimal hepatic encephalopathy (MHE) is a common and underdiagnosed complication of liver cirrhosis, associated with progression to overt hepatic encephalopathy (OHE). Neurofilament light chain (NfL) has been proposed as a marker of early central nervous system injury but remains unexplored in cerebrospinal fluid (CSF) in patients with cirrhosis. We aimed to investigate i) CSF and serum NfL across the spectrum of hepatic encephalopathy (HE), ii) CSF and serum NfL correlations and iii) diagnostic performance of CSF and serum NfL for MHE and OHE. We also evaluated the prognostic performance of serum NfL for OHE.

Methods: In this prospective cohort study, patients with liver cirrhosis and healthy controls (HC) underwent blood sampling and psychometric testing. We performed lumbar puncture on a subgroup of patients and all healthy controls. Patients were divided into three groups based on the Psychometric Hepatic Encephalopathy Score: i) unimpaired, ii) MHE and iii) OHE (West Haven Criteria ≥ grade 1). NfL were measured in CSF and serum by single-molecule assay technology. Serum concentrations were adjusted for age and body mass index, based on large normative data, and corresponding Z scores were calculated.

Results: A total of 128 patients (60% unimpaired, 27% MHE, 13% OHE) and 14 HC were included. The CSF subgroup included 35 patients (57% unimpaired, 26% MHE, 17% OHE) and all HC. CSF and serum NfL increased stepwise from HC to unimpaired patients, MHE and OHE ($p < 0.0001$). CSF and serum NfL were strongly correlated (rho = 0.89, $p < 0.0001$). ROC analyses showed good diagnostic performance of NfL in the CSF-subgroup for identifying MHE and OHE, with AUROCs of 0.88–0.90 in CSF and 0.93–0.95 in serum. AUROC of NfL concentrations in the total cohort were 0.76 ($p < 0.0001$) and 0.78 for NfL Z scores ($p < 0.0001$). The cumulative incidence of OHE was higher in patients with higher NfL Z scores (Gray's test = 0.001), whereas absolute NfL concentrations showed a non-significant trend (Gray's test = 0.058). Cause-specific Cox regression adjusted for MELD score showed a hazard ratio of 6.27 (95% CI 1.41-27.85, $p = 0.016$) for NfL Z scores but was not significant for absolute concentrations ($p = 0.099$).

Conclusion: NfL in CSF and serum reflect neuroaxonal injury in MHE and OHE and has good diagnostic performance. The strong correlation between serum and CSF supports the use of serum NfL. Adjusted serum NfL Z scores provide better diagnostic and prognostic performance than absolute serum concentrations and appear to be a promising biomarker for detection of MHE and risk stratification for development of OHE.

5. **Sustained long-term effect of specialised gastroenterological treatment for bowel dysfunction after pelvic and colon cancer treatment: a prospective cohort study**

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Background
Bowel dysfunction is a frequent, debilitating late effect following cancer treatment. Gastroenterological late-sequelae clinics have been established in Denmark, offering systematic evaluation and targeted treatment. In this setting, we aimed to examine treatment-related changes in diarrhoea-predominant symptoms among cancer survivors, and how they impact quality-of-life.

Methods
This prospective cohort study included survivors of pelvic organ or colon cancer with diarrhoea-predominant symptoms. A first clinical visit (baseline) a structured protocol-guided clinical evaluation was conducted, including blood tests, breath tests for small intestinal bacterial overgrowth (SIBO), and selenium-75 homocholic acid taurine (SeHCAT) scans when indicated. Treatment was directed by findings and included antibiotics for SIBO, bile acid sequestrants or dietary modification for bile acid malabsorption (BAM), and symptom-oriented pharmacological or dietary interventions. Patient-reported outcome measures were collected at baseline, final clinical visit (discharge), and after 1 and 3 years.

Results
Among 534 referred patients, 339 were eligible for analysis. 271 completed 12-month follow-up, and 158 completed 36-month follow-up at data cut off. In tested patients BAM was identified in 66.9%, and SIBO in 62.6%. Bowel symptoms, perceived bowel function, and quality-of-life all improved during follow-up (all $p<0.001$). For example, self-rated bowel function improved in 59% at discharge, 51% at 12 months, and 59% at 36 months, with similar patterns across outcomes and cancer types.

Conclusion
Structured assessment and targeted management in late-sequelae clinics for cancer survivors was associated with considerable and sustained improvements in bowel symptoms and their life impact three years after last visit.

6. Health-related quality of life impairment precedes manifestation of clinical relapse by seven weeks in patients with Crohn's disease discontinuing infliximab

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Background: Crohn's disease significantly impairs health-related quality of life (HRQoL) and work productivity, even during remission. Our double-blinded, randomised controlled STOP IT trial investigated the disease course following infliximab (IFX) withdrawal in patients in long-term clinical-biochemical-endoscopic remission, showing 48% relapse rate within 48 weeks of withdrawal.[1] Here, we report data on HRQoL and work productivity in patients having relapse after IFX discontinuation as part of STOP IT. Furthermore, we compared these parameters in patients having discontinued IFX without relapse and those continuing IFX.

Methods: Post hoc analysis of STOP IT.[1] At each study visit, HRQoL was assessed using Short Inflammatory Bowel Disease Questionnaire (SIBDQ) (10 questions each scored from 1 (severe problem) to 7 (not a problem at all)) and work productivity by Work Productivity and Activity Impairment Questionaire (WPAI). Relapse was defined as CDAI ≥150 together with CDAI increase ≥70 above baseline over 2 consecutive weeks. Patients with clinical relapse between scheduled visits had an early termination visit where corresponding SIBDQ and WPAI defined event time. SIBDQ changes were analysed using linear mixed-effects models.

Results: Of 100 patients included, 46 (46%) discontinued IFX (intervention group), and 22 (48%) of these relapsed within 48 weeks. None of the 54 patients continuing IFX (control group) experienced a relapse. Baseline SIBDQ was comparable between patients who later had a relapse and those without (median 61, IQR 56–65 vs. 61, 54–66; p=0.98). However, at time of clinical relapse, SIBDQ was significantly lower in these patients (median 43, IQR 36-55 vs. 61, 54-65; p<0.001). Accordingly, patients who relapsed showed a significantly decline in SIBD over time (β = -0.46 [-0.63 – -0.30]; p<0.001). Of note, segmented regression analysis revealed a significant inflection point 7 weeks prior to manifestation of clinical relapse. SIBDQ remained stable until this time (β = 0.04, [-0.18 – 0.26]; p=0.72) and thereafter, 7 weeks prior to relapse, sharply declined **(**β **=** -2.26 [-2.90 − -1.61]; p<0.001). Among patients discontinuing IFX without subsequent relapse, SIBDQ remained stable over time (β = 0.03/week [95% CI -0.06 to 0.13]; p=0.47) and was comparable to patients continuing IFX therapy (β = -0.05/week [95% CI -0.11 to 0.01]; p=0.12), with no significant difference in longitudinal trajectories between groups (interaction p=0.15). Employment rate (~2/3) was similar between patients who relapsed or not. Impaired productively at work (presenteeism) was significantly higher in patients who relapsed after stopping IFX (7.3% vs. 1.3%, p=0.04) and overall activity impairment was numerically higher (6.3% vs. 2.1%, p=0.12). Patients discontinuing IFX without relapse had comparable WPAI domains to IFX continuation.

Conclusion: Clinical relapse in Crohn's disease patients having discontinued IFX while in long-term clinical-biochemical-endoscopic remission is associated with marked deterioration in HRQoL and productivity at work. HRQoL decline begins 7 weeks prior to manifestation of clinical relapse and may enable early detection and quantification of loss of disease control. In patients who remain relapse-free, IFX discontinuation does not impair HRQoL or work productivity, indicating that accurate identification of low-relapse-risk patients could enable safe treatment discontinuation without compromising functional outcomes.

[1]Buhl S et al. NEJM Evidence 2022;1:EVIDoa2200061.

7. From Index Endoscopy to Resection: Endoscopic Predictors of Intestinal Resection in Crohn's Disease

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Introduction and Aim
Endoscopy is essential for the diagnosis and monitoring of Crohn's disease (CD) and provides detailed assessment of disease severity. However, the prognostic value of endoscopic findings remains poorly understood. The aim of this study was to evaluate whether ileal findings at the diagnostic index endoscopy, can predict time to ileocaecal resection (ICR) in patients with CD.

Methods
This retrospective population-based cohort study included all patients with CD undergoing primary intestinal resection between 2010 and 2020 in Eastern Denmark. Endoscopic findings at index endoscopy leading to the diagnosis of CD were assessed using the Simple Endoscopic Score for Crohn's Disease (SES-CD). Patients undergoing ICR were compared with patients undergoing isolated colonic or small bowel resections (non-ICR). Mann–Whitney U tests, Kruskal–Wallis tests and logistic regression analyses were used to compare groups and identify predictors and time to surgery.

Results
A total of 631 patients underwent primary intestinal resection, including 517 (82%) ICRs and 114 (18%) non-ICRs. Index endoscopies were available for 408 (79%) patients undergoing ICR and for 78 (68%) patients undergoing non-ICR. Each one-point increase in total ileal SES-CD, increased the risk of subsequent ICR (OR 1.24, 95% CI 1.11–1.40, p<0.001). Among patients with available SES-CD assessment of the ileum, ileal stenosis sub score 1-3 was observed in 181/352 (51.4%) of ICR patients and 7/52 (13.5%) of non-ICR patients, while affected ileal surface sub score 1-3 was present in 195/348 (56.0%) and 16/52 (30.8%), respectively. Affected ileal surface and ileal stenosis SES-CD sub score 1-3 were independently associated with increased risk of ICR (respectively, OR 2.22, 95% CI 1.16–4.96, p=0.031, and OR 1.99, 95% CI 1.47–2.88, p<0.001). No significant increased risk was observed for ulcer size or ulcerated surface. Among ICR patients, ileal stenosis at index endoscopy was associated with shorter time to surgery. Median time from index endoscopy to ICR was 0.57 years (IQR:0.15-2.05) in patients with stenosis compared to 2.02 years (IQR:0.52-4.07) in patients

without stenosis (p<0.001). The absolute risk of undergoing ICR within one year was 61.3% in with endoscopic stenosis and 36.8% without stenosis (OR 2.72, 95% CI 1.77–4.20, p<0.001).
Stenosis SES-CD sub score 2-3 was associated with a threefold higher increased odds of ICR within one year (OR 3.15, 95% CI 2.01–4.97, p<0.001), whereas SES-CD sub score 1 for stenosis was not.

Conclusion

Ileal disease severity at index endoscopy is strongly associated with subsequent ICR in patients with CD. Ileal stenosis was the strongest endoscopic predictor of ICR and was associated with substantially earlier surgery. These findings suggest that endoscopic ileal stenosis may serve as a clinically useful marker of disease progression and risk of future surgery.

8. Relation of age, gender, and year of diagnosis to phenotype at presentation in 3,338 patients with Wilson Disease

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Background: Wilson disease (WD) is a rare inherited disorder affecting copper metabolism. The aim was to examine how age at diagnosis, sex, and year of diagnosis were associated with phenotypic presentation and to evaluate if attempts to reduce the risk of neurological presentation by early diagnosis were successful.

Methods: In this cross-sectional study, nine registries contributed data on 3,338 patients diagnosed with WD over a 75-year period. Phenotypes were categorized into three groups: asymptomatic or hepatic (without neurologic symptoms); neuropsychiatric (with or without hepatic disease); acute liver failure (ALF). Logistic regression and sensitivity analyses were used to account for confounding, referral, and survivor biases.

Results: The combined asymptomatic or hepatic phenotype decreased from 87.0% at ages 0-19 at diagnosis to 41.1% at ages 40-44, then increased to 52.9% for those over 44 years. Females more frequently presented with the asymptomatic or hepatic phenotype (69.8% vs. 63.6%; p=0.001) or ALF (5.7% vs. 1.9%; p=0.001), mostly aged 15–39 at diagnosis. Diagnoses in the over 40-year group increased from 1% in 1980-84 to 23% in 2020-2024. Over time, the median age at presentation increased slightly, while the phenotypic distribution remained stable.

Conclusion: In this largest-of-its-kind multicenter study, the asymptomatic or hepatic phenotype decreased from childhood through age 44, after which it again dominated. Female preponderance in the asymptomatic or hepatic phenotype, or in ALF, was driven by the 15-39-year age group. Contrary to expectations, age at diagnosis increased modestly due to a growing number of patients diagnosed > 40 years of age. Grossly overlooked in the past, these late-onset patients constitute a specific subset of WD patients that needs further study. Attempts over the decades to prevent the development of neurologic disease by early diagnosis were not evident in the data, and revised strategies to reach this goal, such as newborn screening, are needed.

9. Defining clinically meaningful changes in transient elastography for endpoint design in MetALD and ALD trials

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Background

Vibration-Controlled transient elastography (VCTE) is increasingly used for monitoring and may serve as surrogate endpoint in clinical trials in patients with MetALD and ALD. The thresholds for changes in VCTE best reflecting risk of a liver-related outcome are debated, but it remains uncertain whether higher thresholds provide better prognostic value. Furthermore, therapeutic efficacy in steatotic liver disease trials has traditionally been defined by inducing fibrosis regression, while the clinical relevance of preventing progression remains less well established.

We evaluated the association between changes in VCTE and subsequent hepatic decompensation, comparing different VCTE response thresholds.

Methods

We performed a prospective longitudinal cohort study including individuals with MetALD and ALD who underwent two valid VCTE measurements at least 6 months apart and were subsequently followed for hepatic decompensation.

The study evaluated candidate decrease/increase thresholds of ≥20%, ≥25%, ≥30%, ≥35% and ≥40% in VCTE. For decrease thresholds, hazard ratios were inverted to reflect the risk associated with not achieving the decrease threshold. Cox regression analyses adjusted for age, sex, BMI, type 2 diabetes and baseline VCTE were used to evaluate correlation between changes in VCTE and hepatic decompensation (defined by Baveno VII criteria). Subgroup analyses were performed according to baseline VCTE (<10 and ≥10 kPa) and active alcohol intake status.

Results

This study included 539 patients with baseline VCTE of 6.2 [IQR 4.7-10.6] and a median VCTE IQR/median ratio of 14% [IQR 9-19]. 34 developed hepatic decompensation during a median follow-up of 2.3 years [IQR 1.8-2.9]. The multiple candidate thresholds (20-40%) for increases in VCTE were

consistently associated with subsequent hepatic decompensation with adjusted HRs ranging from 5.4-6.7. Importantly, higher response thresholds did not substantially improve prognostic discrimination compared with lower thresholds. A ≥20% increase in VCTE resulted in HR of 6.7 (95% CI: 2.6-17.5) whereas the ≥40% threshold showed similar prognostic performance (HR 5.4, 95% CI 2.1-14.1).

Similarly, across the same candidate thresholds, failure to achieve VCTE decrease thresholds was associated with increased risk of hepatic decompensation across candidate thresholds (HRs 2.3-6.3) and event rates were consistently higher in individuals with VCTE progression compared with those without progression.

Associations were strongest among individuals with baseline VCTE ≥10 kPa and similar trends were observed among individuals with active alcohol intake.

Conclusion

Changes in VCTE reflected the risk of subsequent hepatic decompensation across multiple candidate response thresholds, supporting the clinical relevance of preventing disease progression. More stringent response thresholds did not improve prognostic discrimination. These findings support paired VCTE measurements as clinically meaningful monitoring tools and may help inform potential surrogate endpoint definitions in MetALD and ALD trials.

10. When PEth speaks louder than people - alcohol under-reporting rises with socioeconomic status

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Background:
Steatotic liver disease (SLD) subgrouping relies on current, self-reported alcohol intake and is prone to misclassification due to recall bias. People with low socioeconomic status (SES) have higher alcohol-related morbidity and mortality; however, how SES influences the accuracy of self-reported alcohol intake is less well understood. Phosphatidylethanol (PEth) is a direct biomarker reflecting alcohol consumption over the prior 1–4 weeks. We investigated the association between SES and discordance between self-reported alcohol intake and PEth.

Methods:
This was a single-centre, cross-sectional liver fibrosis screening study in the general Danish population and individuals at risk of SLD. SES was assessed by income, education, employment, and living situation. Alcohol use was self-reported for the past week and past 3 months and categorised according to SLD nomenclature. PEth was classified into three categories: <20 ng/mL, 20–199 ng/mL, and ≥200 ng/mL. Under-reporting was defined as self-reported intake below the PEth-indicated category. SES trends were evaluated using Cuzick's test and ordinal logistic regression.

Results:
We included 6,782 participants, median age 57 years, 52% female. Self-reported alcohol intake was low in 76%, moderate in 16%, and high in 5%, while PEth was <20 ng/mL in 40%, 20–199 ng/mL in 39%, and ≥200 ng/mL in 16%. Among 6,243 participants with complete data, 46% under-reported and 2% over-reported their alcohol intake relative to PEth, while 53% showed concordance.

Under-reporting increased with higher income, from 40% in the lowest income group to 45% in the middle-income group and 57% in the highest income group. This association remained significant after adjustment for age, sex, and education. Full-time employment had the highest adjusted

probability of under-reporting, whereas those outside the labour market under-reported less. Individuals living alone under-reported less than those cohabiting. Education was not independently associated with under-reporting after adjustment.

Conclusion:
SES was strongly associated with discrepancies between self-reported alcohol intake and PEth. Under-reporting was particularly pronounced among individuals with higher income and those in full-time employment, leading to systematic misclassification. SES-related bias should be explicitly considered when alcohol intake informs SLD assessment.

11. Liver steatosis in patients with primary sclerosing cholangitis is associated with metabolic syndrome risk factors rather than liver fibrosis severity or macrophage activation

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Background: The clinical impact of liver steatosis in patients with primary sclerosing cholangitis (PSC) is unclear, and data on its associations with metabolic risk factors, liver fibrosis, and inflammation severity are limited. We investigated associations between liver steatosis, metabolic risk factors and liver disease severity markers.

Methods: We included 105 patients with PSC. Liver steatosis was assessed using controlled attenuation parameter (CAP) by transient elastography and defined as CAP ≥248 dB/m. Clinical, biochemical, metabolic, and liver disease severity variables were compared according to steatosis status. Macrophage activation was assessed using soluble CD163 (sCD163).

Results: Among 105 patients with PSC, 31 patients (30%) had liver steatosis. Patients with steatosis had higher BMI compared with patients without steatosis (27.3 vs. 24.6 kg/m², p = 0.002), and CAP correlated positively with BMI (Spearman's ρ = 0.36 [95% CI 0.16-0.53], p < 0.001). Hyperlipidemia, defined as ongoing statin therapy, also tended to be more prevalent among patients with steatosis (26% vs. 9.6%, p = 0.063). In contrast, CAP was not associated with liver stiffness measurement (LSM) (ρ = 0.07 [95% CI –0.14-0.27], p = 0.5) or sCD163 (ρ = 0.03 [95% CI –0.18-0.24], p = 0.73). Liver biochemistry and markers of liver disease severity were largely comparable between groups.

Conclusion: In patients with PSC, liver steatosis was associated with metabolic risk factors, particularly BMI, but not with liver fibrosis severity or macrophage activation. These findings suggest that steatosis in PSC primarily reflects metabolic dysfunction with no association with liver inflammation or fibrosis.

12. En kulhydratreduceret, høj-protein diæt reducerer leverfedtindholdet uafhængigt af vægttab hos patienter med MASLD: Resultater fra et randomiseret, kontrolleret forsøg

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Baggrund: Effekten af en kulhydratreduceret, højprotein-diæt (CRHP) på leverfedtindhold er ukendt. Her vurderer vi effekterne af en CRHP-diæt med valleprotein isolat (WPI) eller micellært casein isolat (MCI) på patienter med metabolisk dysfunktions-associeret steatotisk leversygdom (MASLD).

Metoder: Deltagere med MASLD og BMI ≥ 27.5 uden diabetes blev randomiseret 1:1:1 til 4-ugers isokalorisk diæt efterfulgt af 20-ugers hypokalorisk diæt med enten CRHP med WPI eller MCI, eller en konventionel diæt (CD) i et open-label design. Deltagerne modtog kostvejledning hver anden uge for at understøtte vægtvedligeholdelse under den isokaloriske fase og for at opnå et vægttab på 5 % efter den hypokaloriske fase. Det primære effektmål var ændringer i leverfedtindhold målt ved MR-spektroskopi. Glukose, palmitat og very-low density lipoprotein-triglycerid (VLDL-TG) kinetik blev undersøgt med isotop tracere under faste samt under en hyperinsulinæmisk, euglykæmisk clamp.

Resultater: 45 deltagere blev inkluderet i studiet. CRHP med WPI reducerede leverens fedtindhold efter den isokaloriske fase sammenlignet med CD (mean: -8,9 %-point [95 % KI: -14,6 til -3,2]), uden ledsagende ændringer i kropsvægt eller -sammensætning. Efter den hypokaloriske periode reducerede alle diæter leverens fedtindhold uden forskelle mellem grupperne (mean: -6,8 %-point [95 % KI: -9,6 til -3,9]) og resulterede i et tilsvarende vægttab (mean: -3,7kg [95 % KI: -4,6 til -2,9]). Der blev ikke observeret en effekt af CRHP på VLDL-TG og palmitat sekretionsrater og endogen glucose produktionsrate.

Konklusion: CRHP med WPI reducerede leverfedtindholdet hos overvægtige patienter med MASLD efter 4 ugers isokalorisk indtag uden samtidige vægtændringer. CRHP forstærkede ikke de gavnlige effekter af vægttab.

13. A Refined SLD Classification Improves Fibrosis Risk Stratification in MetALD

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BACKGROUND Current evidence suggests that the Steatotic Liver Disease (SLD) subgroup metabolic- and alcohol related steatotic liver disease (MetALD) does not provide additional risk stratification for liver fibrosis beyond MASLD, as fibrosis prevalence appears similar between the two groups in several population-based cohorts. We therefore evaluated a refined exposure-based SLD classification incorporating both current and historical high-risk alcohol consumption to assess its association with liver fibrosis across SLD.

METHODS Cross-sectional analysis from a large community-based cohort with metabolic and/or alcohol-related risk factors. Hepatic fibrosis was assessed using transient elastography. Participants were classified according to the current SLD nomenclature and according to a refined exposure-based classification incorporating current and historical high-risk alcohol exposure. Historical high-risk alcohol exposure was defined as alcohol consumption >50 g/day in women or >60 g/day in men for more than five years. Beyond the prevalence of hepatic steatosis, ALD was refined as having both a current and a historical high-risk alcohol exposure, MetALD as either current or a historical high-risk alcohol exposure in the presence of cardiometabolic risk factors (CMR), and MASLD as the absence of both current and historical high-risk alcohol exposure in the presence of CMR.

RESULTS We included 3,123 participants, age of 56,5 years (SD, 9.6), 50.1% males, BMI of 31 kg/m2 (IQR, 27-35). The refined classification of SLD resulted in a marginal reduction in the overall prevalence of diagnosed SLD (n=2,197 (70.3%) vs. n=2,181 (69.8%)), a higher prevalence of MASLD (n=1,603 (51.3%) vs. n=1,766 (56.6%)), and a corresponding lower prevalence of both MetALD (n=398 (12.7%) vs. n=306 (9.8%)) and ALD (n=196 (6.3%) vs. n=109 (3.5%)). Interestingly, the refined classification substantially altered the distribution of fibrosis across SLD subgroups, resulting in a markedly higher fibrosis burden within the MetALD phenotype (LSM ≥8 kPa: 11.6% to 20.3%), whereas the fibrosis burden remained largely unchanged in both MASLD (LSM ≥8 kPa: 12.2% to 11.3%) and ALD (LSM ≥8 kPa: 24.5% vs. 24.3%). The observed redistribution of fibrosis burden remained consistent when applying LSM ≥10 kPa. In a multivariable model adjusted for CMR, age and sex the reclassification resulted in adjusted odds of significant fibrosis in the MetALD subgroup from OR 5.6 ((95%CI; 3.13-10.18), p<0.001) to OR 8.8 (95%CI; 5.1-15.1, p<0.001) while fibrosis risk estimates for MASLD and ALD changed only modestly

CONCLUSION Incorporating historical alcohol consumption appeared to enrich the MetALD phenotype for individuals with clinically relevant fibrosis risk, suggesting that this might better capture the cumulative hepatic injury than the current classification.

14. Antibiotic therapy, not disease severity, shapes the intestinal and oral microbiomes in acutely decompensated cirrhosis

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Background and Aims:
Intestinal microbial disturbances are associated with advancing stages of cirrhosis, but the impact of commonly prescribed medications and disease severity in patients with decompensated cirrhosis remains unknown.

Method:
We performed shotgun metagenomic sequencing on faecal and saliva samples from 100 patients with acutely decompensated cirrhosis and on faecal samples from 112 healthy faeces donors as comparators. Group differences in alpha diversity (Shannon) were tested using the Wilcoxon test and associations with disease severity and medication usage were tested using linear regressions. Differences in Bray-Curtis beta diversity were tested with PERMANOVA.

Results:
The patients' mean age was 58 (± 10) years, 75 % were men and the median MELD score was 14.5 [11.2 – 17.9]. Alcohol was the dominant etiology of cirrhosis (75 %) and 55 % received antibiotic treatment prior to sample collection. Compared with healthy donors, patients had a 55 % lower faeces alpha diversity (2.6 [2.0-3.5] vs. 4.6 [4.1 – 4.5], $p < 0.001$), and a significant beta diversity dissimilarity ($R^2 = 0.15$, $p < 0.001$). Correspondingly, the oral microbiome diversity was low in patient samples (2.8 [2.0 – 3.3]). Importantly, 26 % of patients exhibited prominent single-species dominance in their faecal sample, where a single species on average accounted for 43 (± 22) % of species present. These were most frequently *Enterococcus faecium* (n = 8) and *Bifidobacterium longum* (n = 6). Disease severity had no relation to microbiome diversity, whereas antibiotic treatment was associated with reduced alpha diversities in both faeces (- 3.0, $p < 0.001$) and saliva (- 0.6, $p < 0.001$), and also with marked beta diversity dissimilarity in both faeces ($R^2 = 0.03$, $p < 0.001$) and saliva ($R^2 = 0.02$, $p = 0.02$). Other medications (proton pump inhibitors, beta-blockers and lactulose), and type of

decompensation was not associated with microbiome diversity measures when adjusted for antibiotic treatment ($p > 0.05$).

Conclusions:
Patients with acutely decompensated cirrhosis exhibit a markedly reduced intestinal and oral microbial diversity, with frequent prominent single-species dominance. Antibiotic treatment, but not disease severity or type of decompensation, is associated with decreased microbial diversity in this group of patients and contribute to single-species dominance. Our findings do not support causal relation between cirrhosis stage and disturbed microbiome, which is rather ascribable to antibiotic treatment.

15. Bone health in patients with inflammatory bowel disease treated with biologics and targeted synthetic drugs – a retrospective cohort study on DXA screening

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Background Patients with inflammatory bowel disease (IBD) are at increased risk of reduced bone mineral density (BMD), including osteopenia and osteoporosis. Despite current guideline recommendations emphasizing BMD-assessment in patients at risk, the extent to which patients with IBD in advanced therapies undergo timely dual-energy x-ray absorptiometry (DXA) screening in routine clinical practice remains unclear.

Aim The aim of this study is to assess adherence to recommendations regarding DXA screening, to investigate the prevalence of low BMD, and to explore clinical factors associated with reduced BMD in a cohort of biologically treated patients with IBD.

Method A retrospective single-center observational cohort study was conducted including biologically treated patients with Crohn's disease, ulcerative colitis, or unclassified IBD followed at Herlev Hospital. Clinical data were manually extracted from electronic medical records.

Results Among the 842 included patients, 101 were postmenopausal females (>52 years), 304 were premenopausal females (<52 years), 144 males were >50 years, and 293 males were <50 years. Median age was 38.6 years (interquartile range (IQR) 28.9-53.2), 48.1% were female, and median disease duration was 8.2 years (IQR 4.2-13.2). Among patients considered at risk according to age- and gender-based osteoporosis criteria recommended by current international guidelines, 88 out of 245 underwent DXA scanning (35.9%). Overall, 238 (28.3%) underwent DXA assessment following IBD diagnosis. DXA scanning differed significantly between age and gender groups defined according to current guidelines ($p < 0.001$). Patients with systemic corticosteroid exposure (n=617) were not more likely to undergo DXA scanning compared with patients without systemic corticosteroid exposure (n=225, p=0.80). Among screened patients 75 patients (31.5%) were identified with low BMD: 25.2% osteopenia and 6.3% osteoporosis. Increasing age (OR 1.05, 95% CI 1.03-1.07) and Crohn's disease (OR 2.27, 95% CI 1.19-4.44) were significantly associated with low BMD. Longitudinal analyses (n=58) demonstrated relative stability in BMD over a median follow-up of 3 years (IQR 1.9-5.4), while an improvement in T-scores following intervention with anti-osteoporotic treatment was observed.

Conclusion DXA screening adherence was low in this biologically treated IBD cohort, as only 35.9% of patients meeting age- and gender-based osteoporosis risk criteria underwent DXA scanning. This may potentially have underestimated the true prevalence of reduced BMD. Patients receiving anti-osteoporotic treatment showed improvement in T-scores during follow-up. The findings highlight the importance of increasing awareness and more systematic implementation of DXA screening practices in patients with IBD at risk of reduced BMD.

16. Early-life animal exposure is not associated with risk of inflammatory bowel disease: a nationwide birth cohort study

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Background and Aims: The incidence of inflammatory bowel disease (IBD) continues to rise globally. Early-life environmental exposures may influence immune development, but evidence regarding animal exposure remains inconsistent. We examined whether early-life exposure to pets or farm animals was associated with offspring risk of IBD in a prospective birth cohort.

Methods: In this nationwide cohort study based on the Danish National Birth Cohort, prenatal offspring exposure to pets or farm animals, based on maternal reports, was used as the primary indicator of early-life animal exposure. Early-childhood exposure from birth to 18 months was examined in exposure-window analyses. Incident IBD, Crohn's disease (CD), and ulcerative colitis (UC) were identified through national registries. Associations were estimated using Cox proportional hazards models.

Results: Among 90,306 offspring, 46% were prenatally exposed to pets and 7% to farm animals. During median follow-up of 24 years, 615 offspring developed IBD. Pet exposure was not associated with IBD risk (aHR 1.05, 95% CI 0.89–1.24), nor was farm animal exposure (aHR 1.00, 95% CI 0.73–1.37). Findings were consistent across specific animal categories and in analyses of CD and UC separately. In exposure-window analyses restricted to 63,958 offspring with maternal reports of both pre- and postnatal exposure, no associations were observed among offspring exposed only during pregnancy (aHR 1.10, 95% CI 0.75–1.63) or only during early childhood (aHR 0.73, 95% CI 0.46–1.15).

Conclusions: Early-life exposure to pets or farm animals is not associated with offspring risk of IBD. These findings suggest that early-life animal exposure is unlikely to be a major determinant of disease development.

17. Increased mental distress and low social support in adult offspring of parents with alcohol-related liver disease compared to cancer offspring: A national health survey

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Abstract:
Background and Aims: Parental alcohol-related liver disease (ALD) is associated with mental distress in their offspring, yet support options remain understudied compared to the growing field of supportive interventions for cancer offspring. We compared self-reported mental distress and social support in offspring of parents with ALD with that of background comparators and offspring of parents with cancer.

Method: Data for this cross-sectional study came from the Danish National Health Surveys 2013-2021 with questions on mental and physical health-related quality of life (HRQoL) by the Short Form-12, Cohens Perceived Stress Scale, depressive and anxiety symptoms, sleep difficulties, perceived social support and loneliness. We linked questionnaire data with health registries to identify participants who were offspring of parents with an ALD diagnosis, offspring of parents with a cancer diagnosis, or background comparators matched 1:5:5 by age, sex, and years since parental diagnosis (the last of these for cancer offspring only). We used logistic regression to estimate odds ratios (OR) for mental distress and social support outcomes, adjusted for sex, age at survey participation, and survey year, overall, and in subgroups including by time since parental diagnosis.

Results: The study included 2,902 ALD offspring, 14,510 random background comparators, and 14,510 cancer offspring, of whom 45% were men and the median age was 44 years. The median time since parental diagnosis was 11 years for both ALD and cancer offspring. All investigated mental distress outcomes were more frequently reported in ALD offspring than in background comparators and cancer offspring. For example, ALD offspring had higher odds of reporting low mental HRQoL compared to background comparators (OR of 1.24, 95% CI: 1.09-1.41) and cancer offspring (OR of 1.32, 95% CI: 1.16-1.49). This pattern persisted across three strata of time since parental diagnosis (< 5 years, 5-10 years, and 10-20 years). The highest absolute difference was observed in the strata < 5 years since parental diagnosis (13.40% for ALD offspring, 10.00% for background comparators, and 9.71% for cancer offspring). ALD offspring had higher odds of reporting low social support compared

to cancer offspring (OR of 1.18, 95% CI: 1.05-1.32) but not compared to background comparators (OR of 1.10, 95% CI: 0.98-1.23). Subgroup analyses showed higher odds for mental distress in ALD offspring aged > 45 years at survey participation, ALD offspring with higher educational level, and for ALD offspring with < 5 years since parental diagnosis compared to cancer offspring.

Conclusion: Offspring of parents with ALD report greater mental distress and lower social support than background comparators and offspring of parents with cancer. These findings emphasize the need for a targeted support system for offspring of parents with ALD.

18. Contacts with general practitioners by patients with liver cirrhosis: A Danish nationwide cohort study

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Background and aims: General practitioner (GP) managed comorbidities contribute to a high mortality in patients with cirrhosis, yet the extent of GP contacts remains unclear. We aimed to describe the rates and patterns of GP consultations among patients with cirrhosis to help tailor initiatives to reduce their mortality.

Methods: In a nationwide registry-based cohort study, we included all Danish patients with an incident hospital-recorded diagnosis of cirrhosis between 2015 and 2023, along with 5:1 sex-, birth year-, and age-matched comparators from the general population. We assessed consultation rates, associated predictors, and associations between GP consultation frequency and mortality.

Results: We included 17,263 patients with cirrhosis and 86,315 comparators (median age 64 years; 64% male). Patients with cirrhosis had higher annual GP consultation rates than their comparators, both for in-person consultations (6.2 [95% CI: 6.2-6.2] vs 4.1 [95% CI: 4.1-4.1]) and telephone consultations (4.7 [95% CI: 4.6-4.7] vs 2.0 [95% CI: 2.0-2.0]). Consultation rates declined over calendar time in both cohorts, with the largest decline among patients with cirrhosis (in-person: HR 0.95 [0.94-0.95] vs 0.97 [0.97-0.97] per year; telephone: HR 0.91 [0.90-0.92] vs 0.95 [0.94-0.95] per year). Among patients with cirrhosis, rates were highest in the first year after cirrhosis diagnosis (second year vs first year: HR 0.85 [0.84-0.87]), for patients with decompensated cirrhosis (decompensated vs compensated: HR 1.08 [1.07-1.10]), female sex (female vs male: HR 1.12 [1.08-1.15]), and residence in rural municipalities (rural vs capital city municipalities: HR 1.29 [1.23-1.35]). Compared with patients who had 5-6 consultations in the previous year, those with a lower number of consultations had a lower mortality rate (0 consultations vs 5-6: mortality rate ratio 0.67 [0.59-0.76]), and those with a higher number of consultations in the previous year had a higher mortality rate (9-10 consultations vs 5-6: mortality rate ratio 1.27 [1.10-1.46]).

Conclusion: Danish patients with cirrhosis had higher GP consultation rates than the general population. Rates were highest among female and decompensated patients, and a higher number of consultations in the previous year was associated with an increased mortality rate. These findings

underscore the central role of general practice in cirrhosis care and highlight opportunities for strengthened collaboration between GPs and hepatologists to improve overall care for patients with cirrhosis.

19. Non-invasive assessment of hepatic steatosis in Wilson Disease: An international registry-based study

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BACKGROUND & AIMS: Hepatic steatosis is an early histological feature of Wilson Disease (WD). Non-invasive tests (NIT) for steatosis are increasingly utilized in chronic liver diseases, but lack validation in WD, leaving clinicians to extrapolate from other etiologies with different pathophysiology.

METHODS: Registry data on adults and children with WD diagnosis, biopsy-verified hepatic steatosis grading, and NIT measurements [hepatic steatosis index (HSI) or controlled attenuation parameter (CAP)]. Pre-defined non-WD and cohort-optimized cut-offs were tested against liver biopsy (LB) to detect moderate-to-severe steatosis (MSSt). The analysis focused on patients with <1 year between NIT and LB.

RESULTS: 103 patients with WD were included. Fifty-seven (55%) biopsies were performed at diagnosis, and MSSt was present in 35.9%. NITs were measured within 1 year of LB in fifty-nine (57.3%). There, CAP, but not HSI, was significantly elevated in MSSt, and increased with histologic steatosis grade (p=0.0017). Similarly, CAP, but not HSI, had excellent overall accuracy for MSSt in WD (AUROC = 0.93 vs 0.64). An optimized CAP cut-off of ≥291 dB/m resulted in a sensitivity of 0.78 and specificity of 1.00. A combined score of CAP & ALT further improved accuracy (AUROC = 0.96).

CONCLUSIONS: MSSt is common in WD, and CAP appears well-suited for MSSt detection. Future studies are needed to determine the potential clinical and prognostic significance of MSSt in WD. For now, this study demonstrates CAP as a reliable tool to do so. Further, this study supports the need for etiology-specific cut-offs in rare hepatic storage disorders.

20. Binge drinking as a key driver of steatotic liver disease: Prevalence, predictors, and population impact in a large screening cohort

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Background and aims:
Alcohol is a major contributor to liver-related morbidity, yet the importance of drinking patterns beyond cumulative alcohol intake remains incompletely understood. We investigated the prevalence and determinants of binge drinking and examined its association with elevated liver stiffness and sociodemographic and cardiometabolic risk factors in a large population-based screening cohort.

Methods:
We screened participants from the general population and individuals at risk of steatotic liver disease in a large prospective cohort using vibration-controlled transient elastography (VCTE). We defined possible significant liver fibrosis as VCTE ≥8 kPa. Participants self-reported alcohol consumption patterns using AUDIT-C. We defined binge drinking as intake of ≥5 units per drinking episode. Binge drinking was categorized as never/rarely, monthly, or weekly or more often. Alcohol overuse was defined as a current or previous alcohol intake of ≥14/21 units per week for women/men for ≥5 years. Participants reported sociodemographics via questionnaires, and clinical assessment captured cardiometabolic risk factors. We applied multivariable logistic regression adjusting for sociodemographic and cardiometabolic factors, alcohol overuse, and PEth ≥200 ng/mL.

Results:
We included 6,782 participants (mean age 57 years; 52% female; 83% obesity; 62% type 2 diabetes/ dysglycaemia; 75% hypertension). Overall, 6% had VCTE ≥8 kPa, and 16% had PEth ≥200 ng/mL. Weekly binge drinking occurred in 1,132 participants; 75% were male and 81% reported alcohol overuse. Elevated liver stiffness was more common among weekly binge drinking than among less frequent binge drinking (11% vs. 5%, $p<0.001$). PEth ≥200 ng/mL occurred in 58% with weekly binge drinking compared with 7% without. In unadjusted analyses, monthly binge drinking was not associated with elevated liver stiffness (OR 0.84, 95% CI 0.61–1.17), whereas weekly binge drinking was associated with more than twofold higher odds (OR 2.31, 95% CI 1.83–2.90). In adjusted analyses, weekly binge drinking remained independently associated with VCTE ≥8 kPa (OR 1.39, 95% CI 1.02–1.89, $p = 0.038$), independent of both alcohol overuse and PEth ≥200 ng/mL. Male sex, living alone, hypertension, elevated triglycerides, and dysglycaemia were independently associated with

weekly binge drinking, whereas parenthood and low HDL cholesterol were associated with lower odds.

Conclusion:
Weekly binge drinking independently associates with increased liver stiffness. The findings suggest that drinking pattern provide clinically relevant information beyond cumulative alcohol intake and alcohol biomarkers and should be considered in liver disease risk assessment and clinical screening.

21. Manglende standardisering af endepunkter ved fibrostenoserende Crohns sygdom: Et systematisk review

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Introduktion og formål:
Fibrostenoserende Crohn's sygdom (FSCD) er en klinisk udfordrende sygdom uden medicinske behandlingsmuligheder. Der mangler klinisk validerede endepunkter til kliniske forsøg og udvikling af anti-fibrøs behandling. Dette systematiske review har til formål at identificere og evaluere kliniske studier omhandlende medicinsk behandling af FSCD.

Metode:
PubMed/MEDLINE, Web of Science, Cochrane Library og ClinicalTrials.gov blev systematisk søgt. Studier med tyndtarms FSCD og medicinsk intervention blev inkluderet. To uafhængige reviewere screenede studier og ekstraherede data om endepunkter for behandlingseffekt, der blev kategoriseret efter domæne og sammenfattet ved narrativ syntese.

Resultater:
8049 studier blev identificeret, 107 fuldtekster blev gennemgået. I alt 28 studier blev inkluderet hvoraf 21 var publiceret og 7 var fra RCT databaser. Af de 21 publicerede studier, var 13 retrospektive, 8 var prospektive, herunder var 3 RCT studier. I alt var 1452 patienter inkluderet, 78% var mænd.
Behandlingsvarighed varierede fra 3 til 96 måneder. Interventionerne i de publicerede studier bestod af anti-TNF (n=10), kombineret terapi (n=2), steroid (n=3), azathioprin (n=5, i 3 studier kombineret med anti-TNF), ustekinumab (n=3), ALK5 (n=1), 5-aminosalicylater (n=1) og sulfasalazine (n=1). Der blev kun anvendt placebo i et studie.
Som underbyggende mål for FSCD ved inklusion blev ileokoloskopi (n=15) og kliniske symptomer (n=17) hyppigst brugt, herefter MR (n=13) og CT (n=9). Medicinsk behandling var inklusionskriterie i 17 studier, mens 4 studier havde indlæggelse eller akut obstruktion som inklusionskriterie. 89% af studierne havde klar præ-defineret strikturer. CONSTRICT kriterierne (vægtykkelse, lumenforsnævring og præstenotisk dillatation) blev anvendt i 9 studier. Primære endepunkter var hyppigst behandlingsophør (n=12), symptomer (n=10) eller eventbaserede endepunkter (indlæggelse, operation eller endoskopisk dilatation, n=15). Færre studier brugte billeddiagnostik (n=4) og sikkerhedsprofil (n=2) som primære endepunkter.

Konklusion:
Der er betydelig variation i definitioner og endepunkter på tværs af studier af FSCD. Standardiserede

og validerede endepunkter er nødvendige for at muliggøre sammenligning af studier og fremme udviklingen af antifibrøse behandlinger til fordel for vores patienter med FSCD.

22. Steatotic Liver Disease in Primary Biliary Cholangitis Is Not Associated with Liver Fibrosis

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Background: Primary Biliary Cholangitis (PBC) may coexist with Steatotic Liver Disease (SLD). However, there are limited data describing whether SLD is associated with increased fibrosis severity in patients with PBC. We aimed to investigate this in patients with PBC.

Methods: In a cross-sectional study we included 133 patients with PBC from Aarhus University Hospital, with a median disease duration of 6.8 years. Steatotic liver disease (SLD) was defined as CAP ≥248 dB/m measured by Vibration Controlled Transient Elastography (VCTE). We explored liver stiffness, markers of fibrosis (FIB-4) and inflammation (sCD163), along with components of the metabolic syndrome (BMI, anti-hypertensive, -lipdemic and -diabetic treatments).

Results: Among 133 patients with PBC, 47 (35.3%) had SLD. There were no differences in age or disease duration. Patients with SLD had significantly higher BMI compared with non-SLD patients (30.0 vs. 24.7 kg/m², p<0.001), with obesity (BMI ≥30) being more prevalent in the SLD group (50% vs. 13%). There was no difference in liver stiffness (VCTE 6.0 vs 6.1 kPa, p>0.9), fibrosis markers (FIB-4 1.48 vs 1.60, p=0.6), inflammation markers (sCD163 3.8 vs 3.3 mg/L, p=0.2), cirrhosis prevalence, or medication use between groups. Diabetes mellitus tended to be more frequent in patients with SLD (21% vs. 8.1%, p=0.058).

Conclusion: SLD was present in approximately one-third of patients with PBC and was associated with higher BMI, obesity and diabetes. There were no differences in liver biochemistry, liver stiffness, fibrosis markers, or cirrhosis prevalence.

23. Prognostic Discrimination and Diagnostic Accuracy of Prothrombin Concentrations in Steatotic Liver Disease

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Introduction: Risk stratification in chronic liver disease (CLD) relies on scoring systems such as Model of End-stage Liver Disease (MELD), which incorporates international normalised ratio (INR) as a surrogate marker of hepatic synthetic function. However, INR can be influenced by factors unrelated to liver function, such as vitamin K antagonists or direct oral anticoagulants. In contrast, prothrombin concentration (CPT) is not affected by these drugs and may as a more direct measure of hepatocyte activity better reflect hepatic synthetic function. We therefore evaluated the prognostic and diagnostic use of CPT compared with INR.

Methods: We included 455 patients with decompensated cirrhosis, 151 healthy individuals, and 285 individuals at risk of steatotic liver disease across five cohorts. CPT was measured using biosensors and correlated with liver fibrosis stage (F0-F4) by differences of means, generalised linear models, and receiver operating characteristic curves. Survival- and decompensation probability was assessed by cox-regressions, survival-curves, and differences in C-statistic. Similar analyses were performed with INR.

Results: Mean age was 55, 32% were female, and of the patients with decompensated cirrhosis 86% had alcohol related disease. Median CPT was 1,837 nmol/L in healthy individuals and 867 nmol/L in patients with decompensated liver disease. CPT decreased significantly from F3 to F4 (-393, 95%-CI: -500–(-285), p<0.001). Median CPT stratified 90-day survival in patients with cirrhosis and acute decompensation (HR: 1.8, 95%-CI: 1.2–2.7, p=0.009), but not in a smaller in-hospital validation cohort (HR: 2.7, 95%-CI: 0.8–8.9, p=0.116). Similar tendencies for INR in both the main cohort (HR: 2.4, 95% CI: 1.5–3.9, p<0.001) and the validation cohort (HR: 2.2, 95% CI: 0.7–6.8, p=0.176). In a model with bilirubin and creatinine, decreasing CPT (HR: 2.8, 95%-CI: 1.6-5.0, p<0.001), but not increasing INR (HR: 1.2, 95%-CI: 0.99-1.3, p=0.068), was an independent predictor of 90-day survival. Replacing INR in MELD trended towards better prognostic discrimination (Harrell's C-statistic: 0.64) when compared to the MELD-score (0.62), although this difference was not statistically significant (p=0.10).

Conclusion: CPT can reliably be assessed in healthy individuals and patients with CLD with a dynamic range from compensated advanced chronic liver disease to decompensated cirrhosis. CPT may improve prognostication in CLD as compared to INR.

24. The Role of Sleep in the Disease Course of Patients with Ulcerative Colitis – An EASI Trial Sub-study

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Objective: To investigate the role of sleep quality in the disease course of patients with ulcerative colitis.
Introduction: Inflammatory bowel disease (IBD) is a chronic, progressive disease of the gastrointestinal tract that significantly impacts quality of life. Poor sleep quality has emerged as a potential predictor of disease flares in patients with IBD, although existing evidence remains inconsistent, particularly in patients with ulcerative colitis (UC).
Aims and Methods: This post hoc study aimed to evaluate the association between sleep quality and the disease course of patients with UC. In a randomised controlled trial (RCT), 178 initially enrolled patients with UC in stable remission were randomized 1:1 to receive either 1600 mg (single tablet) or 2400 mg (three 800 mg tablets) mesalazine daily. Participants were followed for twelve months with clinical assessments quarterly.
Sleep quality was assessed using the Pittsburgh Sleep Quality Index (PSQI), administered electronically after each study visit. To account for incomplete questionnaires, component scores were rescaled to allow comparison across respondents. Based on this, the Global PSQI cut-off > 5 corresponds to a rescaled cut-off > 23.8 on a 0 – 100 scale.
Results: A total of 168 patients completed at least one PSQI questionnaire and were therefore included in the analysis. No significant association was observed between poor sleep quality and disease flare during the 12-month follow-up ($p = 0.543$). However, patients who experienced a flare tended to have mean PSQI scores above cut-off both before and after the flare.
When stratified by PSQI-score (above vs below cut-off), a significantly higher proportion of patients with poor sleep quality reported extraintestinal manifestations (EIMs) ($p < 0.001$). No association was found between EIMs and disease flare ($p = 0.431$). In multivariate logistic regression analyses, EIMs were associated with poor sleep quality (OR 9.8, $p < 0.001$ at baseline, OR 7.7, $p < 0.001$ during the study).
Conclusions: Poor sleep quality was not associated with disease flare in patients with UC receiving mesalazine maintenance therapy. However, EIMs were strongly associated with impaired sleep, independent of disease activity. These findings highlight the need for further studies to clarify the role of EIMs in sleep quality.

25. **Topical Tacrolimus Achieves Remission but Only Marginally Delays Advanced Therapy in Chronic Proctitis: a dual center retrospective cohort study**

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Background: Topical tacrolimus (TT) is an off-label treatment for chronic refractory proctitis and may represent a localized alternative to advanced therapies, which can be limited by costs, systemic adverse effects, and patient preferences. However, evidence regarding its ability to delay escalation to advanced therapies is limited.

Methods: We conducted a retrospective cohort study at two Danish IBD centers and included all patients with ulcerative proctitis treated with TT between 2022-2025. Efficacy of treatment was assessed by bowel movements, appearance of blood before and after treatment and physician's global evaluation. Remission was defined as <4 bowel movements all without blood

Results: Thirteen patients were included; 17 courses of TT provided (duration 8 weeks) with time to follow-up median 644 days (IQR 447-779). Clinical remission was achieved in 9 (53%) courses. Bowel movements decreased significantly in patients attaining remission (from 6 to 1 vs. 6 to 6, p=0.01), as did blood appearance (78% to 0% vs. 75% to 50%, p=0.009) and fecal calprotectin (2,449 mg/kg to 135 vs. 295 mg/kg to 1,470, p=0.03). Mild local adverse events occurred in 4 patients. Time to escalation to advanced therapy was median 31 days for remission (IQR 0-174) vs. 0 (0-0) for non-remission (p=0.03). Only 2 (22%) TT ending in remission were not escalated to advanced therapies.

Conclusion: TT demonstrated high short-term clinical efficacy and favorable safety in refractory chronic proctitis. It appears to represent a feasible localized therapeutic option to bring remission prior to escalation to systemic advanced therapies.

26. Will individuals in treatment for alcohol use disorder participate in screening for chronic liver disease?

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Background and Aims: Screening for chronic liver disease with blood testing or transient elastography is recommended in individuals with a high alcohol consumption, but less is known about uptake and acceptability of screening in this population. This study aims to investigate attendance, experiences and perceptions of screening for chronic liver disease with transient elastography vs. blood test in individuals attending alcohol use disorder (AUD) treatment.

Method: We used data from an ongoing randomized controlled trial (RCT) of chronic liver disease screening that has so far included 310 individuals attending AUD treatment. Participants were randomized 2:1 to transient elastography (TE) plus blood testing (including FIB-4) or blood testing (including FIB-4) alone. Participants allocated to blood testing were responsible for calling to book their appointment, whereas those allocated to TE were contacted directly by the investigator to schedule their screening. To explore attendance, experiences and perceptions of screening, we analysed two complementary datasets. First, attendance rates were compared using the exact binomial test. Second, semi-structured interviews with 25 participants of the RCT with 9 individuals who declined to participate were analysed using thematic analysis.

Results: Attendance was significantly higher among the 207 individuals allocated to transient elastography (197/207, 95%) compared to the 103 individuals allocated to blood testing (60/103, 58%; $p < 0.001$).
Based on interviews with 15 individuals attending transient elastography, key motivators for attending included contributing to research, receiving a health check not offered by their general practitioner, and feeling privileged to receive a screening free of charge. For informants who expected a poor result, a good result brought relief, while some learned about liver health and alcohol's effects. For those with a high transient elastography result, it was experienced as motivating to reduce alcohol use. Based on interviews with 10 individuals who did not attend the allocated blood test, the main barriers were personal challenges, logistical difficulties, and competing priorities. Participants reported that they were not concerned about liver disease, but might have been more likely to participate if the blood test could have been performed at the alcohol treatment

center or at their general practitioner or if they had a telephone call to assist with booking of the blood test. Interviews with nine individuals who declined screening indicated that non-participation was primarily related to competing priorities, and insufficient information about the offer. None perceived the offer as inappropriate or unwanted.

Conclusion: Attendance in screening for chronic liver disease was much higher for transient elastography than blood test alone in individuals with AUD. Making blood tests available at AUD treatment centers or at the general practitioner and proactive appointment support may increase participation for screening by blood test.

Abstracts som fremgår af DSGH hjemmesiden

Stigende PEth-niveauer korrelerer med stigende leverstivhed hos personer i risiko for steatotisk leversygdom

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Baggrund og formål: Phosphatidylethanol (PEth) anvendes i stigende grad til at underinddele steatotisk leversygdom (SLD) ud fra alkoholforbrug, men betydningen af gentagne målinger over tid er endnu utilstrækkeligt belyst. I dette studie undersøgte vi, hvordan ændringer i alkoholforbrug målt ved henholdsvis PEth og selvrapportering hang sammen med ændringer i leverstivhed hos personer i risiko for SLD.

Metode: Prospektivt screeningstudie på OUH med inklusion af voksne personer, dels fra baggrundsbefolkningen, dels med kendte risikofaktorer for SLD: type 2-diabetes, BMI ≥30 kg/m² eller aktuelt/tidligere alkoholoverforbrug. Eksklusion ved kendt kronisk leversygdom. Deltagerne fik målt PEth, selvrapporteret alkoholindtag og leverstivhed (LSM) ved to undersøgelser med cirka to års mellemrum. Ændringer i alkoholforbrug blev klassificeret som moderate ved en ændring i PEth ≥20 ng/mL (0,028 µmol/L) og for selvrapporteret alkoholforbrug ved ≥10 g/dag. En relativ ændring i leverstivhed på mere end 30% blev anset som klinisk betydende. Sammenhængen mellem ændringer i alkoholmål og ændringer i leverstivhed blev analyseret med logistisk regression.

Resultater: Studiet omfattede 1382 personer med en median opfølgningstid på 2,1 år (IQR 2,0–2,4). Ved baseline var gennemsnitsalderen 57 år (±9), 62% var mænd, og 18% havde leverstivhed ≥8 kPa. Ved opfølgning identificerede PEth hyppigere ændringer i alkoholforbrug end selvrapportering – både ved stigning (24% vs. 10%) og ved fald (29% vs. 20%). Leverstivheden steg hos 11% og faldt hos 25% af deltagerne. I univariable analyser var stigende leverstivhed associeret med stigende PEth-niveauer, men ikke med ændringer i selvrapporteret alkoholforbrug. I multivariable analyser var

stigende PEth den eneste uafhængige prædiktor for øget leverstivhed, mens type 2-diabetes, BMI ≥30 kg/m², alder, køn og opfølgningstid ikke havde signifikant betydning.

Konklusion: Stigende PEth-niveauer – men ikke selvrapporteret alkoholforbrug – var associeret med forværring af leverstivhed i en population med lav forekomst af avanceret leversygdom. Resultaterne peger på, at objektive alkoholbiomarkører som PEth kan bidrage med vigtig information ved monitorering af alkoholforbrug hos patienter i risiko for steatotisk leversygdom.

Nedsat muskelstyrke og muskelmasse er hyppigt forekommende ved primær biliær cholangitis: En multimodal undersøgelse inklusive muskelultralyd

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Baggrund: Primær biliær cholangitis (PBC) er en kronisk autoimmun kolestatisk leversygdom associeret med invaliderende træthed (fatigue) og fysisk afkræftelse. Sarkopeni defineres som nedsat muskelstyrke, -masse og i svære tilfælde lav fysisk præstationsevne, men prævalensen og den kliniske betydning ved PBC er endnu ikke tilstrækkeligt belyst.
Formålet med dette studie er at undersøge forekomsten af sarkopenimanifestationer hos patienter med PBC ved hjælp af en multimodal tilgang samt at evaluere anvendeligheden af ultralyd til vurdering af muskelmasse.

Metoder: Patienter over 18 år med PBC blev inkluderet fra Gastroenheden på Hvidovre Hospital i et tværsnitsstudie. Sarkopeni blev defineret i henhold til kriterierne fra European Working Group on Sarcopenia in Older People 2 (EWGSOP2). Følgende parametre blev målt:
Muskelstyrke: Håndgrebsstyrke målt med dynamometer
Muskelmasse: 1) Appendikulært skeletmuskelindeks (ASMI) målt vha. dual-energy X-ray absorptiometry (DEXA), 2) skeletmuskelmasseindeks (SSMI) ved bioelektrisk impedansanalyse (BIA) samt 3) tykkelsen af m. biceps brachii og m. rectus femoris ved ultralyd uden probekompression.
Indirekte mål for kronisk leversygdom: Leverstiv ved fibroskanning.
Statistik: uparret t-test og Pearsons korrelationstest.

Resultater: 44 patienter (100 % kvinder) med en medianalder (IQR) på 59 (54–65) år og en sygdomsvarighed på 5,4 (3,0–9,4) år blev inkluderet; 9 % havde høj sandsynlighed for avanceret kronisk leversygdom (leverstivhed > 15 kPa). Lav muskelstyrke (< 16 kg) forekom hos hele 19 %, mens lav muskelmasse blev påvist hos hhv. 19 % ved DEXA (ASMI < 5,5 kg/m²) og 21 % ved BIA (SSMI < 6,1 kg/m²). Der var ingen forskel i sygdomsvarighed eller leverstivhed mellem patienter med lav versus normal muskelstyrke.

Ultralydsmålt tykkelse af m. biceps brachii korrelerede moderat med ASM (r = 0,44; p = 0,004) og SSM (r = 0,48; p = 0,002). Tilsvarende blev der observeret moderate korrelationer mellem tykkelsen af m. rectus femoris og ASM (r = 0,37; p = 0,02) samt SSM (r = 0,44; p = 0,005).

Konklusion: På trods af en lav forekomst af avanceret kronisk leversygdom havde patienter med PBC en høj prævalens af lav muskelstyrke og lav muskelmasse sammenlignet med europæiske referencepopulationer. Resultaterne indikerer, at lav muskelstyrke og -masse forekommer tidligere og hyppigere hos kvinder med PBC. Muskelultralyd er et let anvendeligt og klinisk nyttigt redskab til vurdering af muskelmasse.

The Short Health Scale for Eosinophilic Oesophagitis: Validation and Clinical Applicability in 159 Danish Patients

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Background & Aims: Standardised instruments are needed to assess subjective health in eosinophilic oesophagitis (EoE). This study aimed to validate the Short Health Scale (SHS) for adults with EoE by comparing it to the validated Eosinophilic Esophagitis Activity Index (EEsAI), Adult Eosinophilic Esophagitis Quality of Life Questionnaire (EoE-QOL-A) and Hospital Anxiety and Depression Scale (HADS).

Methods: Validity and reliability were evaluated. Known-group validity (n=159) was tested by comparing SHS-EoE scores across EEsAI-defined disease activity groups (mild <20, moderate 21-40, severe >40) using permutation test and non-parametric bootstrapped pairwise comparisons. Concurrent validity was evaluated using Spearman correlations with conceptually related domains. Test-retest reliability was assessed in stable patients (n=50) using the Bland-Altman analysis, Spearman correlation and the interclass correlation coefficient (ICC).

Results: Among 159 patients completing all questionnaires, SHS-EoE total scores increased significantly with higher EEsAI-defined disease activity (permutation test p<0.0001), with pairwise differences of 31.6 (moderate vs. mild; 95% CI 7.7-55.5, *p*=0.0095), 121.5 (severe vs. mild; 95% CI 96.1-146.3, *p*<0.0001), and 89.9 (severe vs. moderate; 95% CI 63.2-116.6, *p*<0.0001), confirming known-group validity. SHS-EoE items correlated as expected with EEsAI, EoE-QOL-A and HADS, confirming concurrent validity. In stable patients, test–retest reliability was good for total scores (Spearman ρ=0.75, ICC=0.84), with item-level ρ=0.64-0.70 (three of four ICC>0.6) and no significant median differences.

Conclusions: The study demonstrated that the SHS-EoE is suitable for assessing subjective health in patient with EoE, although responsiveness to change requires further evaluation. Its short completion time makes it a practical tool for routine collection of patient-reported outcomes.

Weight loss induced changes in body composition, liver fat and skeletal muscle: a 32-week randomised trial comparing semaglutide and Roux-en-Y gastric bypass

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Background/Objectives: Bariatric surgery and glucagon-like peptide-1 receptor agonists are effective treatments for severe obesity, but direct randomised comparisons remain unpublished.
We compared Roux-en-Y gastric bypass (RYGB) with semaglutide 2.4 mg once weekly in women with severe obesity and metabolic dysfunction-associated steatotic liver disease, focusing on weight-loss quality, regarding effects on body composition, liver fat, and skeletal muscle mass (SMM) as assessed by dual-energy X-ray absorptiometry and magnetic resonance imaging.

Subjects/Methods: In this single-centre, open-label, randomised controlled trial, 22 women eligible for bariatric surgery were randomised 1:1 to RYGB or semaglutide. Participants underwent assessments at baseline, after approximately 8–10% total body weight loss or no later than 24 weeks, and at 32 weeks. Outcomes included total body weight (TBW), fat mass (FM), lean body mass (LBM), abdominal subcutaneous (SAT) and visceral adipose tissue (VAT), quadriceps volume (QV) and intrahepatic triglyceride content (IHTG).

Results: At the intermediate visit, TBW loss was similar after RYGB and semaglutide (8.5% vs 7.8%; p=0.62), with no significant between-group differences in body composition, IHTG, or QV. At 32 weeks, RYGB produced greater weight loss than semaglutide (22.3% vs 12.4%; p<0.001) and greater absolute reductions in FM, SAT, VAT and QV. The relative loss of SAT (307.1 g/kg vs 289.7 g/kg; p=0.63), VAT (65.3 g/kg vs 78.3 g/kg; p=0.41), LBM (27.5% vs 33.3%; p=0.61), and QV (8.1 cm^3/kg vs 11.0 cm^3/kg; p=0.4) compared to TBW loss did not differ between groups. Both treatments reduced IHTG, with no significant between-group difference (−58.6% vs −52.5%; p=0.526).

Conclusions: RYGB induced greater absolute TBW loss than semaglutide at 32 weeks. Both treatments ameliorated IHTG similarly. Reductions in LBM and SMM appeared to be primarily related to the magnitude of weight loss rather than to treatment modality. Semaglutide was not associated with disproportionate LBM or SMM loss compared with RYGB.

Omkostningseffektivitet af ferriderisomaltose versus ferricarboxymaltose hos patienter med jernmangelanæmi og inflammatorisk tarmsygdom i Danmark

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Introduktion
Jernmangelanæmi (JMA) er en hyppig komplikation ved inflammatorisk tarmsygdom (IBD) og den hyppigste årsag til anæmi, der ifølge ECCO-retningslinjerne er den hyppigste ekstraintestinale manifestation; intravenøst (IV) jern anbefales ved intolerans over for oralt jern eller aktiv sygdom[1]. Ferric carboxymaltose (FCM; Ferinject®, Xabogard®) og ferric derisomaltose (FDI; Monofer®) adskiller sig med hensyn til dosering og sikkerhed. FDI kan gives med op til 20 mg/kg uden øvre grænse pr. infusion, mens FCM er begrænset til 1.000 mg, hvilket ofte medfører flere infusioner[2,3,4]. I PHOSPHARE-IBD-studiet var hyppigheden af hypofosfatæmi 51,0 % med FCM mod 8,3 % med FDI ved ækvivalent dosering og samme hæmatologiske respons[5], og nyere data viser øget frakturrisiko ved FCM[6] samt uændret frakturrisiko før/efter behandling med FDI[7]. Formålet med studiet var at vurdere omkostningseffektiviteten af FDI or FCM i Danmark og resultatets robusthed over for frakturrisikoen.

Metode
En mikrosimuleringsmodel sammenlignede FDI og FCM hos IBD-patienter med JMA fra et dansk betaler- og samfundsperspektiv. I alt 1.000 patienter blev simuleret med baselinekarakteristika fra PHOSPHARE-IBD, og jernbehovet blev beregnet med Ganzoni-ligningen. Modellen opgjorde QALY og omkostninger til jern, administration, fosfatmonitorering, hypofosfatæmi, frakturer og samfundsomkostninger over fem år. Basisanalysen anvendte en relativ frakturrisiko for FCM versus FDI på 2,029 (1,347; 3,056)[5], og frakturomkostninger kom fra en tidligere ansøgning accepteret af Medicinrådet. Omkostninger blev værdisat efter Medicinrådets metode[8]. Frakturrisikoen blev i scenarier varieret til 1,5 og 3,0.

Resultater
FDI var dominerende sammenlignet med FCM, dvs. både omkostningsbesparende og mere effektiv, primært drevet af flere infusioner, behovet for fosfatmonitorering og flere tilfælde af hypofosfatæmi i FCM-armen, mens højere frakturomkostninger bidrog yderligere. FDI gav 2,67 QALY mod 2,58 (+0,09) og omkostninger på DKK 25.832 mod DKK 46.482 med FCM, svarende til en besparelse på DKK 20.650 pr. patient over fem år. Resultatet var robust over for frakturrisikoen: ved en relativ risiko på 1,5 med FCM var besparelsen DKK 16.459 vs FDI (+0,079 QALY) og ved en relativ risiko på 3,0 var den DKK 28.775 (+0,091 QALY). I den probabilistiske analyse var FDI omkostningseffektiv i 100 % af iterationerne.

Konklusion

I en omkostningseffektivitetsanalyse var FDI det dominerende IV-jernpræparat versus FCM ved JMA hos danske IBD-patienter, både omkostningsbesparende og forbundet med flere QALY. Besparelsen drives især af doseringsfordelen med færre infusioner; den øgede frakturrisiko ved FCM bidrager, men konklusionen om FDI-dominans er robust på tværs af antagelser om frakturrisiko.

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Alpha2A adrenergic receptor antagonism improves cerebral blood flow and ameliorates cognitive dysfunction in a mouse model of metabolic dysfunction-associated steatotic liver disease

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Background and Aims: Cognitive dysfunction may be a complication of metabolic dysfunction-associated steatotic liver disease (MASLD). Cerebrovascular changes are among the suggested causes. This study investigated the effect of antagonism of the alpha2A adrenergic receptor (ADRA2a) as a modulator of cerebral blood flow and cognitive dysfunction.

Methods: Male C57BL/6NTac mice were fed a modified Amylin-liver non-alcoholic steatohepatitis (AMLN) diet to induce MASLD or a standard diet (controls) for 36 weeks. Half of the MASLD mice received the ADRA2a antagonist Yohimbine in their drinking water for the final 10 weeks. Neurobehavioural tests were conducted to study cognitive function. At termination, laser speckle contrast imaging was used to study cerebral blood perfusion. Immunohistochemical analyses were used to study vasculature and microglia activation (involved in the neurovascular unit).

Results: ADRA2a antagonism ameliorated anxiety-like and depression-like behaviour in the MASLD mice. The blood perfusion of the cerebral parenchyma was reduced in the MASLD mice compared with control mice (blood flow index (BFI): 46.9 ± 4.0 arbitrary units (a.u.) vs. 53.2 ± 8.5 a.u., $p = 0.07$), which was reversed by ADRA2a antagonism (BFI: 52.1 ± 5.0 a.u., $p = 0.03$). The MASLD mice showed increased contractile tone of capillary pericytes in the brain (capillary diameter: 3.9 ± 0.3 µm vs. 4.8 ± 0.4 µm, $p = 0.02$), which was normalised by ADRA2a antagonism (4.4 ± 0.3 µm, $p = 0.04$), a plausible mechanism for the observed changes in blood perfusion. Accordingly, the MASLD mice had higher activity of microglia in the brain ($p = 0.008$ vs. controls), which was reduced by ADRA2a antagonism ($p = 0.07$ vs. MASLD mice), further complimenting the reduced contractile effect on cerebral vasculature by ADRA2a antagonism.

Conclusion: Ten weeks of ADRA2a antagonism in a MASLD mouse model ameliorated cognitive dysfunction. Our data suggest that this effect was achieved by increasing cerebral blood perfusion through normalisation of vascular constriction. This paves the way for further mechanistic studies

evaluating the role of ADRA2a antagonism, and future clinical translation into MASLD patients at risk of cognitive dysfunction.

Presence of cardiometabolic risk factors is not associated with lower lifetime alcohol consumption in patients with alcohol-related liver disease: A clinical cohort study

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Background and Aims

It is thought that cardiometabolic risk factors (CMRFs) act synergistically with alcohol consumption in the development of cirrhosis. We analysed how lifetime and current alcohol consumption, assessed by phosphatidylethanol (PEth), differed according to presence of CMRFs in newly diagnosed patients with alcohol-related liver disease (ALD).

Methods

We included patients with newly diagnosed ALD at Zealand University Hospital, Denmark, 2021-2026. Lifetime alcohol consumption was assessed using the Lifetime Drinking History interview, and current alcohol consumption was **assessed by PEth measured in blood samples**. CMRFs included obesity, diabetes, hypertension, and dyslipidaemia. We used logistic regression to estimate odds ratios (OR) for CMRFs according to lifetime alcohol consumption, and according to PEth value, adjusted for sex, age, and severity of liver disease.

Results

Among 124 patients with ALD, 77% were men, mean age was 63 years, and 85% had cirrhosis, of whom 67% were compensated and 33% decompensated. Patients reported a median lifetime alcohol consumption of 51,564 drinks. Median PEth was 0.22 micromole/L. 53% of patients had at least two CMRFs. The median number of CMRFs was 1 for patients with a lifetime alcohol consumption of < 50,000 drinks and 2 for patients with a lifetime alcohol consumption of ≥ 50,000 drinks. Lifetime alcohol consumption was not associated with having CMRFs with adjusted ORs of 1.55 (95% CI: 0.65-3.81) for diabetes, 1.06 (95% CI: 0.42-2.68) for obesity, 1.15 (95% CI 0.52-2.55) for hypertension, and 1.16 (95% CI: 0.51-2.63) for dyslipidaemia when a lifetime alcohol consumption of ≥ 50,000 drinks was compared to < 50,000 drinks. **Patients with 3-4 CMRFs did not have a lower lifetime alcohol consumption than patients with 0-2 CMRFs.** Current alcohol consumption was not associated with obesity, hypertension and dyslipidaemia, however, higher current alcohol consumption, assessed by

PEth, was associated with diabetes with adjusted OR: 3.88 (95% CI: 1.51-10.66, **p=0.01**), when comparing a PEth value <0.3 micromole/L to a PEth value ≥ 0.3 micromole/L.

Conclusion

In this clinical cohort of 124 patients with newly diagnosed ALD, presence of CMRFs was not associated with a lower lifetime or lower current alcohol consumption, since these were **overall similar across CMRF groups.** However, diabetes was associated with a higher *current* alcohol consumption.

Hepatic impairment and benzodiazepine pharmacokinetics in alcohol withdrawal treatment: the implications for chlordiazepoxide use – a clinical audit on patient safety

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Introduction: Chlordiazepoxide (CDP) remains the cornerstone in alcohol withdrawal treatment. However, CDP is an inactive prodrug requiring phase 1 metabolism via cytochrome P450 producing long lasting and active metabolites. In patients with chronic liver disease and cirrhosis, impaired phase 1 metabolism raises significant safety concerns. Ineffective prodrug activation may lead to persistent withdrawal symptoms and escalating CDP dosing. This can result in accumulation of active metabolites, intoxication and prolonged sedation, misinterpreted as hepatic coma or side/mixed abuse days after being introduced to this first drug of choice. Although alternative strategies are used by hepatologists and pharmacologists, standardized treatment guidelines for these patients are lacking.

Methods: In a local quality improvement clinical audit, patients requiring alcohol withdrawal treatment, were offered individualized treatment. Patients with prior complications to the CDP treatment (Withdrawal Symptom scale (WSA) > 1,5 on treatment or cumulative dose >500 mg) or patients diagnosed with liver disease were offered either an alternative and active benzodiazepine (BZD) or a BZD metabolized via phase 2. The alternative treatments regimens were administered as fixed doses based on physiologically based pharmacokinetic modelling (PBPK) and child pugh (CP) scores.

Results: Thirty cases are currently included in the clinical audit; Twenty cases diagnosed with liver impairment or earlier complications to CDP, and ten cases treated according to standard CPD guidelines. Patients receiving individualized treatment (n=20) showed improved outcome, including lower WSA score, improved patient satisfaction (PSQ) during treatment and earlier and easier discharge than usual. The patients who have had comparable hospital stays show shortened hospital stays in PBPK individualized treatment and significantly reduced doses BZD (from 250 mg Diazepam equivalents to 100 mg on average).

Discussion/conclusion: Patients with severe alcohol use disorder are at high risk of cirrhosis and impaired phase 1 metabolism. In these patients, CDP may be insufficiently activated due to the lack of immediate metabolism, leading to dose escalation and accumulation of both inactive prodrug and very active metabolites – the latter with toxic effects. Failure to recognize altered pharmacokinetics in these hepatic impaired patients may worsen outcomes, including prolonged withdrawal, kindling,

and seizures as well as intoxication and prolonged sedation.
This clinical audit indicates that a differentiated and individualized approach, incorporating liver function and, if possible, prior treatment responses, improves safety, reduces complications, and shortens the period of withdrawal. Guidelines for benzodiazepine selection in patients with hepatic impairment are therefore warranted.

Kliniske karakteristika og komplikationer ved organtransplanterede patienter med IBD: et retrospektivt kohortestudie fra Rigshospitalet

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Introduktion og formål

Patienter der gennemgår organtransplantation (Tx), og er diagnosticeret med inflammatorisk tarmsygdom (IBD), udgør en kompleks patientgruppe, med behov for omfattende og livslang immunsuppressiv behandling medførende øget risiko for komplikationer. Formålet med dette studie er at beskrive sygdomskarakteristika, behandlingsmønstre og forekomsten af alvorlige komplikationer blandt organtransplanterede patienter med IBD (IBD-Tx).

Materiale og metoder

I dette retrospektive observationsstudie blev alle patienter med IBD-Tx med forløb på Rigshospitalet inkluderet. Inklusionsperioden løb fra 1. januar 2000, til 31. maj 2026. Patienterne blev identificeret ud fra diagnose- og procedurekoder. Der blev registreret oplysninger om sygdomskarakteristika, mortalitet, transplantationsforhold, malignitet, medicinsk behandling og infektioner. Data er opgjort med deskriptiv statistik. I det følgende beskrives initialt hele kohorten, og mere indgående analyser præsenteres for de levertransplanterede.

Resultater

I alt blev 170 patienter inkluderet med en medianopfølgningstid efter IBD-diagnose på 18,5 år (IQR 9,5-28,4). Medianalder ved IBD-diagnosen var 26 år (IQR 18-39), og kvinder udgjorde 34% (n=57) af patienterne.

Ved journalgennemgang var 16% (n=28) afdøde med en mediantid fra Tx til død på 5,4 år (IQR 1,9-16,2). I alt blev 80% (n=136) diagnosticeret med IBD før Tx, med mediantid fra diagnose til Tx på 12,5 år (IQR 6,7-22,2). De resterende 20% (n=34) fik diagnosen med mediantid på 4,5 år (IQR 2,5-6,8) efter Tx. Følgende organer blev transplanteret: lever (LTx) 69% (n=118), nyre 25% (n=43), lunge 4% (n=7), hjerte 1% (n=2), pancreas <1% (n=1) og tarm <1% (n=1). 12% (n=20) undergik ≥ 2 Tx.

Blandt patienterne med IBD-LTx, havde 13% (n=15) morbus Crohn (CD) med følgende sygdomsudbredning: terminal ileitis 7% (n=1), colitis 47% (n=7), og ileocolitis 47% (n=7). Ingen havde øvre CD. De resterende 87% (n=103) var diagnosticeret med colitis ulcerosa (UC), heraf proctitis 1% (n=1), venstresidig colitis 1% (n=1), og pancolitis 98% (n=101). Leversygdom fordelte sig således: primær skleroserende cholangitis (PSC) 74% (n=87), autoimmun hepatitis (AIH) 3% (n=2), PSC-AIH

overlapssyndrom 16% (n=19), og andre leversygdomme 7% (n=8). Blandt IBD-LTx-patienterne udviklede 30% (n=35) cancersygdom i perioden fra Tx til opfølgning: hudcancer 66% (n=23), lymfom 11% (n=4), hepatocellulært carcinom 6% (n=2), cholangiocarcinom 6% (n=2), thyroideacancer 6% (n=2), nasopharynxcancer 3% (n=1), og coloncancer 3% (n=1). Mediantid fra LTx til cancer var 6,5 år (IQR 3,5-11,8). Biologiske lægemidler mod IBD blev brugt blandt 35% (n=41) af IBD-LTx-patienterne, 33% (n=10) af disse udviklede cancer. I alt 84% (n=99) af IBD-LTx-patienterne havde ≥1 indlæggelseskrævende infektioner post-LTx, hvoraf 60% (n=59) ≥ 2 indlæggelseskrævende infektioner. Af patienterne med ≥1 indlæggelseskrævende infektioner, havde 40% (n=40) været i behandling med biologiske lægemidler, og 60% (n=59) var bionaive.

Konklusion

Patienter med IBD-Tx udgør en kompleks patientgruppe med høj forekomst af infektioner, malignitet og mortalitet under kompleks immunsuppressiv behandling. Resultaterne understreger behovet for målrettede strategier, og yderligere forskning i sikker og effektiv behandling af denne patientgruppe.

Autologous colonic epithelial stem cell therapy for ulcerative colitis refractory to advanced therapies: A new treatment paradigm using patient derived organoids

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Background: Refractory ulcerative colitis (UC) is associated with significant morbidity and impaired quality of life. UC remains inadequately controlled in a substantial proportion of patients despite the availability of multiple therapies including immunosuppressants, biologics, and small-molecule drugs. These therapies mainly target inflammatory pathways. UC pathogenesis is multifactorial and involves genetic susceptibility, environmental factors, the intestinal microbiome, diet, and epithelial barrier dysfunction. Therefore, there is a need for novel treatment strategies beyond targeting inflammatory pathways. We aim to develop a first-in-human regenerative, mucosa-restoring therapy based on autologous transplantation of human intestinal epithelial organoids. The goal of this therapy is to restore the epithelial barrier function and promote deep remission by inducing epithelial regeneration.
Methods: Colonic biopsies are collected at Odense University Hospital, and epithelial stem cells (organoids) are isolated and expanded under Good Manufacturing Practice (GMP) conditions at the University of Copenhagen. Expanded organoids are characterized for epithelial lineage composition and scalability for clinical application. Preclinical engraftment and implantation are assessed in human colectomy specimens to evaluate mucosal integration and regenerative potential following transplantation into ulcerated tissue. We plan to retransplant autologous epithelial organoids into areas of active mucosal injury to promote epithelial repair and restore intestinal barrier integrity.
Results: We established a robust protocol for expansion of human colonic organoids containing all major epithelial cell lineages and are establishing GMP-compatible and scalable manufacturing workflows to support clinical translation. We are performing preclinical experiments using human colectomy specimens to investigate organoid implantation and integration within the intestinal mucosa.
Conclusion: Autologous epithelial organoid transplantation represents a feasible regenerative strategy that directly targets mucosal healing and may provide a therapeutic option for patients with refractory UC. By restoring epithelial integrity rather than suppressing inflammation, this approach has the potential to redefine future treatment paradigms in UC. We are currently establishing clinically scalable workflows for patient-derived organoid expansion, and first-in-human transplantation studies are being planned.

Semaglutide prevents cognitive dysfunction in experimental metabolic dysfunction-associated steatohepatitis through anti-inflammatory and neuroprotective effects

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Background and Aims: Cognitive dysfunction is an increasingly recognized and debilitating manifestation of metabolic dysfunction-associated steatohepatitis (MASH). The GLP-1 receptor agonist Semaglutide is a promising treatment for MASH, which also exhibits neuroprotective effects in neurodegenerative disease models. We investigated the short- and long-term effects of Semaglutide treatment on cognitive dysfunction and its possible underlying mechanisms in experimental MASH.

Method: MASH was induced using a 16-week high-fat, high-cholesterol (HFHC) diet. Sixty-four Sprague-Dawley rats were randomized into four groups: 1) standard diet, 2) HFHC diet, 3) HFHC diet with Semaglutide treatment (10 weeks; 60 µg/kg/day), or 4) standard diet with Semaglutide treatment. We assessed neurobehaviour, histological MASH severity, hepatic and systemic inflammation, blood ammonia and urea cycle enzyme expression, as well as brain synaptic density and microglia activation by autoradiography.

Results: HFHC animals exhibited impaired memory in the Fear Conditioning Test (Cued test; $p = 0.01$) and depression-like behaviour during the Forced Swim Test (Immobility; $p = 0.03$), both prevented by Semaglutide treatment. Semaglutide reduced liver fat content ($p = 0.03$) and systemic inflammation (CCL2, CCL3, CXCL1; $p < 0.05$), whilst histological MASH remained unchanged. Moreover, Semaglutide treatment restored urea cycle enzyme expression (CPS1; $p = 0.03$) and reduced the hyperammonaemia ($p = 0.04$) observed in HFHC animals. In the prefrontal cortex, HFHC animals showed diminished synaptic density which was ameliorated by Semaglutide ($p = 0.01$), whilst no difference in microglia activation was observed.

Conclusion: Treatment with Semaglutide for 10 weeks effectively prevented memory impairment and depression-like behaviour in experimental MASH. These improvements are suggested to be attributed to the attenuation of systemic inflammation and protection against loss of synaptic density, and not resolution of MASH. Moreover, Semaglutide ameliorated hyperammonaemia which may also contribute to cognitive dysfunction in MASH. Our findings hold potential implications for

the therapeutic management of MASH-associated cognitive dysfunction and warrant further confirmation in Man.

Navigating Chronic Illness: A Qualitative Study on Healthcare Experiences and Identity Following IBD Diagnosis in Young Adults

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Introduction: Inflammatory bowel diseases (IBD) consist of Crohn's disease (CD) and ulcerative colitis (UC), two chronic autoimmune diseases affecting the gastrointestinal tract, with the Danish incidence among the world's highest. IBD is often diagnosed in early adulthood, a period marked by critical life transitions. Despite this, research exploring how young adults react to receiving an IBD diagnosis remains limited.

Aims and method: This qualitative study explores how young adults experience being newly diagnosed with IBD, focusing on the support and guidance they received to gain an in-depth understanding. Semi-structured individual interviews were conducted and analysed using an inductive thematic analysis approach. Participants were between 18 and 30 years, diagnosed with either CD or UC within the past 2-5 years of the time of the interviews. Inclusion continued until data saturation was reached, with a total of 11 patients.

Results: Three main themes were identified: (1) A Life Turned Upside Down, describing disruptions to identity and daily life, including difficulties balancing study/work and reconciling the diagnosis, with many feeling "*too young*", isolated from their peers, as well as "*disgusting*" due to the stigma surrounding bowel-related symptoms. Concerns about fertility, future flares, and life ever going back to normal were common. Romantic and sexual relationships were affected and feelings of being a burden to family and partner also weighed on their minds. (2) A Desire for More Information and Personalised Care, highlighting unmet needs for clear and individualised information and care. Participants felt confused by unclear and missing post-diagnosis information, wanted psychosocial concerns addressed, and missed a more holistic approach, as they felt age and personal circumstances were overlooked. Frequent changes in provider and brief consultations left many feeling like "*just another medical case*," with several hesitant to contact healthcare services. (3) Finding Your Way, illustrating how participants developed coping strategies and sought support. Emotional presence, practical help, and understanding from others gave a sense of acknowledgement. Over time, many learned to manage daily life, and knowledge of IBD's fluctuating nature reduced feelings of being overwhelmed. Some participants found comfort in hearing other patients' experience, while others found it hard to relate to others, due to the individual nature of the IBD disease course.

Conclusion: IBD significantly affects young adults at diagnosis, impacting identity, emotional well-being, and daily life. This study underlines that newly diagnosed young adults feel unprepared and undersupported, revealing a gap between standardised care and patient experience. The findings highlight the need for individualised care encompassing communication, psychosocial support, and practical guidance, and underscore the value of qualitative insights in identifying areas for meaningful improvement.

Iron deficiency among pregnant women with IBD and non-luminal IMIDs

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Background and aims: Iron deficiency is common in pregnancy due to increased maternal and fetal iron requirements. In pregnant women with luminal (=inflammatory bowel disease (IBD)) or non-luminal immune-mediated inflammatory diseases (IMIDs), chronic inflammation may further disturb iron homeostasis through hepcidin-mediated iron restriction. This study aims to describe the prevalence and longitudinal development of iron deficiency during pregnancy among women with IBD, non-luminal IMIDs and no IMIDs, and to investigate the risk of being iron deficient during pregnancy when exposed to an IMID. Finally, the study aims to evaluate whether a serum ferritin/C-reactive protein (SF/CRP) ratio can be utilised as a diagnostic tool to identify iron deficiency in our cohort.

Methods: This nationwide registry-based cohort study includes all singleton livebirths pregnancies in Denmark from 2008-2024 with at least one maternal SF measurement recorded in the Danish Register of Laboratory Results for Research during pregnancy.
Maternal exposure is categorized as IBD, non-luminal IMID or no IMID based on diagnoses recorded before birth. Iron status is classified using SF and CRP: SF < 30 μg/L defines iron deficiency (ID), whereas SF 30-100 μg/L with elevated CRP defines combined inflammation and iron deficiency (CIID). Anaemia is defined according to trimester-specific haemoglobin cut-offs. For each pregnancy, biomarker values are assessed overall and by trimester using the lowest value within the relevant period.

We describe cohort selection, baseline characteristics, SF distribution, SF development across trimesters, and the distribution of ID, CIID and anaemia across exposure groups. Logistic regression is used to estimate adjusted odds ratios for ID and CIID according to IMID exposure, including analyses of IBD, non-luminal IMIDs as composite and individual exposure groups. Stratified analyses are conducted by trimester, maternal age, parity, calendar period, prescription iron supplementation,

intravenous iron treatment and IBD disease activity. Sensitivity analyses restrict the cohort to the first eligible offspring of each mother. Among pregnancies with paired SF and CRP measurements, we evaluate whether a ratio of SF/CRP ≤ 6 can identify iron deficiency in pregnant women with and without IMIDs.

In women with IBD, faecal calprotectin is used to assess whether disease activity correlates with increased cases of CIID.

Results: Statistical analyses are ongoing. Preliminary results identified a total of 182,274 pregnancies, including 5.205 (2,9 %) IBD pregnancies, 7.852(4,3%) non-luminal pregnancies and 169.217 (92,8 %) non-IMID pregnancies. Of IBD pregnancies, 2.152 (41,3 %) had Crohn's disease, and 3.053 (58,7 %) had ulcerative colitis. Overall, IBD was active during 685 (13.2%) pregnancies. The prevalence of ID was 64 %, 44 % and 41 %, and the prevalence of CIID was 5 %, 2,5 % and 1,5 % for IBD, non-luminal IMID and non-IMID pregnancies, respectively.

Conclusion: Preliminary findings indicate a substantial burden of iron deficiency in pregnancy, with women with IBD appearing to be at particularly increased risk. Improved identification of iron deficiency during pregnancy, particularly among women with IBD will support more targeted prenatal care and, improve outcomes for both mother and child.

Når colitis ikke alene forklarer forværringen: DRESS maskeret som abdominal sepsis og muligt relaps af hårcelleleukæmi.

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Baggrund: DRESS (Drug Reaction with Eosinophilia and Systemic Symptoms) syndrom er type IV-medieret lægemiddelhypersensitivitetsreaktion med kutan, hæmatologisk og visceral involvering. Gastrointestinal manifestation med diarré og colitis er sjældent forekommende, men kan sammen med leverpåvirkning forveksles med infektiøs colitis, inflammatorisk tarmsygdom eller behandlingssvigt. For gastroenterologen er udfordringen størst, når der samtidig foreligger radiologisk verificeret tarminflammation.

Kasuistik: En 60-årig mand med hårcelleleukæmi i langvarig remission, KOL og type 2 diabetes blev indlagt med feber, venstresidige abdominalsmerter og blodig diarré. CRP var 280 mg/L, leukocytter 27,2 x 10^9/L og kreatinin 180 mmol/L. CT af abdomen viste akut ukompliceret divertikulitis i colon descendens. I sigmoideum var der udtalte inflammatoriske forandringer, senere beskrevet som venstresidig colitis. Ved medicinanamnese fremkom, at patienten cirka 2 uger før indlæggelsen havde modtaget ampicillin for formodet pneumoni i almen praksis og 3 dage før indlæggelsen, blev startet i Pipercillin/Tazobactom og metronidazol på mistanke om divertikulitis.

Klinisk forløb: Patienten blev behandlet med piperacillin og tazobactam. Grundet persisterende højfebrilia, stigende inflammatorisk respons og manglende klinisk bedring blev behandlingen eskaleret til meropenem. Tilstanden progredierede med temperatur op til 40,1 °C, saturation 86%, Respiratorisk frekvens 28 og laktat 4,7 mmol/L med behov for intensivt tilsyn. Samtidig tilkom universelt erytrodermiformt eksantem, ansigtsødem og generaliseret væskeretention med 6 kg vægtøgning. Leukocytter steg til 33,7 x 10^9/L, og der udvikledes eosinofili 1,0 x 10^9/L samt progredierende lever og koagulationspåvirkning med ALAT stigning fra 34 til 170 U/L, basisk fosfatase 240 U/L og INR 1,5. CT thorax viste ny mediastinal og aksillær lymfadenopati. På baggrund af tidligere hårcelleleukæmi rejste dette mistanke om relaps som forklaring på febrilia, leukocytose og klinisk forværring. Gentagne hæmatologiske vurderinger fandt ikke holdepunkter for recidiv. Blod og urindyrkninger, fæcesdiagnostik samt viral og atypisk luftvejsudredning var negative.

Diagnose og behandling: Kombinationen af tidsmæssigt relevant forudgående antibiotikaeksponering, udbredt udslæt med ansigtsødem, eosinofili, lymfadenopati og leverinvolvering gav RegiSCAR(klinisk DRESS-score baseret på udslæt, eosinofili, lymfadenopati og organinvolvering) score 5, svarende til sandsynligt DRESS. Ampicillin blev vurderet som mulig udløsende eksponering, med mulig forværring under efterfølgende betalaktambehandling. Mistænkte lægemidler blev seponeret, og prednisolon 50 mg dagligt blev initieret med langsom nedtrapning. Inden for 2 døgn var patienten afebril uden nye udslæt. CRP faldt til 48 mg/L, og senere kontrol viste fald i leukocytter til 11,6 x 10^9/L og ALAT til 56 U/L.

Konklusion: Hos gastroenterologiske patienter kan blodig diarré og radiologisk colitis fastholde klinikeren i et infektiøst eller inflammatorisk tarmsygdomsspor, mens et multisystemisk lægemiddeludløst syndrom udvikles parallelt. I denne kasuistik kan kolitis have repræsenteret samtidig divertikulitis eller mulig gastrointestinal DRESS involvering; uden endoskopisk histologi kan sammenhængen ikke bevises. DRESS imiterede behandlingsrefraktær abdominal sepsis, shock og relaps af tidligere hårcelleleukæmi. Ved forværring under antibiotika kombineret med eksantem, ansigtsødem, eosinofili, lymfadenopati eller leverpåvirkning bør DRESS indgå tidligt i den gastroenterologiske differentialdiagnostik. En komplet medicinanamnese, inklusive nylig antibiotika ordineret i primærsektoren, kan være nøgle til diagnosen.