Alcohol consumption in Swiss IBD patients: prevalence and influence on disease course 1

Felix Brunner[1], Roland von Känel[2], Stefan Begré[3], Carole Clair[4], Andrew Macpherson[1], Pascal Juillerat[1]
[1]Gastroenterology, Visceral Surgery and Medicine, Inselspital Bern; [2] Psychosomatic Medicine, General Internal Medicine, Inselspital Bern; [3] Psychiatric Service, Spital Burgdorf; [4] PMU, University Hospital Lausanne.

Background: Little is known about the influence of alcohol consumption on the disease course in IBD.

Methods: Frequency of alcohol consumption was screened at enrolment in the Swiss IBD cohort study. Socio-demographic variables, disease characteristics and course were compared among non-drinkers (ND), low-to-moderate (LMD) and heavy drinkers (HD) **Results:** 43% of 2019 patients reported regular alcohol consumption: 40.5% LMD and 2.6% HD. Drinkers were older, mostly males, with a higher body mass index and concomitant tobacco consumption (p<0.001). The proportion of ND was significantly higher in CD than UC (60% vs. 52%, p=0.003). In UC LMD seem to have less extended disease (59% vs. 48% in ND and 44% in HD; p=0.028). And drinkers had to be less hospitalized (16% vs. 22% in ND). However, this could be associated with the protective effect of smoking. HD received significantly less immunosuppressants. During follow-up (6925 patient-years) HD with CD seem to have a milder disease course with only 2.7 surgeries per 100 patient-years compared to 6.5 and 7.2 in LMD and ND, respectively. The incidences of abscesses and fistulas were also reduced compared to ND and LMD (0.9 vs. 2.8 and 3.3 per 100 patient-years). **Conclusions:** 43% of the Swiss IBD cohort patients drink alcohol, among them 6% heavily. Older age, Male gender and smoking are associated with increased alcohol consumption. Alcohol may favour a milder course of UC with a shorter extend, less immunosuppressant use and fewer hospitalisations. This might be confounded by smoking. Heavy drinking seemed to reduce the development of abscesses and fistulas and the need for surgery in CD during follow-up.

Diagnostic value of fecal calprotectin to detect small bowel pathology in patients with previous negative endoscopy 2

Emanuel Burri [1,2], Nina Meuli [2], Christoph Beglinger [2]
Gastroenterology and Hepatology, Cantonal Hospital Liestal (1) and University Hospital Basel (2)

Background: Capsule endoscopy is laborious and costly. Therefore, we examined the diagnostic value of fecal calprotectin to increase diagnostic yield.

Methods: We performed a post-hoc analysis of a prospective cohort of 70 consecutive patients who had received capsule endoscopy (Pillcam, Given Imaging) after negative bidirectional endoscopy. Calprotectin (Bühlmann, Switzerland) was measured in stool samples collected within 24 hours before the investigation. Primary endpoint was the presence of mucosal breaks (erosion, ulcer, tumor). Investigators were blinded to calprotectin results.

Results: Indications for capsule endoscopy were anemia (51.4%), hematochezia (14.3%), suspected Crohn's disease (14.3%), abdominal pain (10%), suspected malignant disease (8.6%) and unexplained diarrhea (1.4%). The prevalence of mucosal breaks was 48.6% (n=34) but 4 patients had significant lesions strictly outside the small bowel and were not included in the analysis. Calprotectin testing was more often positive (>50ug/g) in patients with mucosal findings (61.4% vs. 38.6%, P=0.001) and Receiver Operating Characteristics analysis showed an area under the curve of 0.760 (95% confidence interval 0.639-0.857) for fecal calprotectin to identify intestinal inflammation. At the optimal cut-off (63ug/g), fecal calprotectin had 90.0% sensitivity and 63.9% specificity. This translated into a positive and negative likelihood ratio of 2.49 and 0.16, respectively, and resulted in a high negative predictive value (88.5%). The overall accuracy was 69.7%.

Conclusion: Fecal calprotectin is a valid marker of intestinal inflammation in the small bowel and might help to guide diagnostic investigations.

Investigation of the Polyprotein Encoded by Hepatitis E Virus Open Reading Frame 1 3

Viet Loan Dao Thi, Darius Moradpour and Jérôme Gouttenoire
Division of Gastroenterology and Hepatology, CHUV, University of Lausanne, CH-1011 Lausanne

Introduction: Hepatitis E virus (HEV) is believed to be the most common cause of acute hepatitis and jaundice in the world. However, current knowledge of the molecular virology of hepatitis E is scarce. The HEV positive-strand RNA genome harbours 3 open reading frames (ORFs). ORF1 encodes the functional domains required for viral RNA replication. It is unclear whether these are processed into distinct proteins or act as a polyprotein with multiple functions.

Methods: Using specific antibodies directed against functional ORF1 domains, we investigated putative polyprotein processing i) in a wheat germ-based cell-free expression system, ii) in newly established human cell lines inducibly expressing HEV ORF1, and iii) in selectable subgenomic HEV replicons derived from the HEV genotype 3 Kernow-C1 strain. The latter system is currently also being exploited to evaluate novel antiviral approaches against hepatitis E.

Results: The product of HEV ORF1 was detected only as a polyprotein in the three experimental systems investigated, including in a context of genuine viral RNA replication. These results indicate that no or only very inefficient processing of the polyprotein encoded by ORF1 occurs during viral replication.

Conclusion: HEV may be unique among positive-strand RNA viruses in expressing a large polyprotein comprising all necessary functions to exert RNA replication. Efforts are ongoing to validate these findings in a fully infectious system. If confirmed, our findings yield a number of intriguing questions regarding the functional organization, structure and cell biology of the polyprotein encoded by HEV ORF1.

Retrospective Analysis of the Effectiveness of the Surveillance-Program for Hepatocellular Carcinoma 4

Authors: Rahel S. Frey; Tujana Boldanova; Markus H. Heim

Affiliation: Clinic for Gastroenterology and Hepatology of the University Hospital Basel, Switzerland

Background: Regular surveillance of patients at risk for hepatocellular carcinoma (cirrhotics) has been recommended by European, American and Asian guidelines and is practiced in many Swiss hepatology clinics. The effectiveness and costs of 6 monthly surveillance by ultrasonography (US) in Switzerland is not known.

Methods: In the two-year period 2011/2012, 693 US-examinations in 283 patients were performed at the Clinic for Gastroenterology and Hepatology of the University Hospital Basel. The clinical charts, US reports and reports of additional examinations (CT, MRI, liver biopsy) were reviewed. The tumour stage of HCCs detected in the surveillance program was compared to HCCs not detected in a surveillance program. The number needed to survey (NNS) to detect an HCC and the costs per detected HCC were calculated.

Results: No focal lesions were detected in 198 of the 283 patients. In 63 patients, focal lesions that were not HCCs were detected by the program or known already. In 12 patients no definitive assessment of a lesion was possible and 3 were lost to follow-up. In 7 patients, a new HCC was detected. All 7 newly diagnosed HCCs were at an early stage (BCLC 0 or A) and 5 were within the Milan-Criteria. In non-surveyed patients with a diagnosis of HCC during the same observation period, only 33% were diagnosed in an early HCC stage. NNS were 41 patients or 99 US-examinations. The estimated costs per detected HCC were 12'570 CHF.

Conclusions: In this retrospective analysis, HCC surveillance resulted in the detection of HCCs in an early stage in all surveillance patients. The number needed to survey and the costs of the surveillance are reasonably low. HCC surveillance should be recommended to all patients at risk for HCC in whom potentially curative treatments would be used.