of developing infective disease, such as tuberculosis (TBC) and cytomegalovirus (CMV) reactivation and other viral/bacterial diseases. The aim of the present study was to evaluate the incidence and prevalence of CMV, TBC, hepatitis B (HBV) and C (HCV) infection/reactivation and other infections in IBD subjects treated with anti-TNF α.

Methods: retrospective analysis of prospective maintained database including all IBD subjects treated with anti-TNF α (infliximab, adalimumab and golimumab) for at least 1 year in the period 2013–2018, whose infective serological status (Quantiferon TB test, Mantoux, CMV IgM/IgG, HBsAg, HBsAb, HBcAb, HBeAg, HBeAb, anti-HCV, anti-HIV, HSV IgM/IgG, VZV IgM/IgG, EBV IgM/IgG) was known before starting the treatment and during the follow-up. Incidence (number of infections per 100 patient-years) and prevalence of each infection was reported.

Results: Among 689 who started an anti-TNF α agent, 288 subjects (males 52.8%, mean age 28.5 + 12.2 years, Crohn's disease 82.3%), met inclusion criteria and were enrolled. Total years/patient were 378.08 for infliximab, 627.58 for adalimumab and 8.25 for golimumab. Before starting treatment, CMV IgG antibodies were detectable in the majority (78.8%) of patients, but no case of IgM or CMV-DNA positivity was recorded; three subjects (1%) had latent TBC infection (LTBI) and were treated with isoniazide before starting anti-TNF; one case of HBV and one case of HCV infection were registered. During the anti-TNF α treatment, a total of 58 infective events (20.1%) were recorded: 63.8% during adalimumab and 36.2% during infliximab treatment. The most common infections were: urinary (34.5%), cutaneous (13.8%), HSV (13.8%), HPV (8.6%), upper respiratory infections (8.6%), gastroenteritis (6.9%), pneumonia (5.2%), bacteraemia (3.4%), VZV (3.4%) and de novo CMV (1.7%). Among them, 13 (22.4%) were considered severe, 11 (19%) needed hospitalisation and 9 (15.5%) led to anti-TNF withdrawal. No case of CMV or TBC reactivation was registered during the follow-up. The infection incidence rate was therefore 6.05/100 patient-years for adalimumab and 5.55/100 patient-years for infliximab (p = NS) (Table 1).

Table 1. Number of infective events and infection incidence rate.

	Adalimumab	Incidence	Infliximab	Incidence
Urinary infections	12	1.91	8	2.12
Cutaneous infections	6	0.96	2	0.53
Herpes simplex infection (HSV)	7	1.12	1	0.26
Papillomavirus infection (HPV)	3	0.48	2	0.53
Upper respiratory infections	3	0.48	2	0.53
Gastroenteritis	1	0.16	3	0.79
Pneumonia	2	0.32	1	0.26
Bacteraemia	1	0.16	1	0.26
Varicella-Zoster Infection (VZV)	1	0.16	1	0.26
Cytomegalovirus Infection (CMV)	1	0.16	0	0
TOTAL	**37**	**6.05**	**21**	**5.55**

Conclusion: IBD patients are at high risk of developing infective disease during anti-TNF α therapy. The recognition of pre-exposure serological status, as well patients' strict monitoring during maintenance treatment, dramatically reduces the risk of severe reactivation (in particular TBC and CMV reactivation).

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Factors associated with development of NAFLD in patients with inflammatory bowel disease: a 5-year retrospective study on 225 patients

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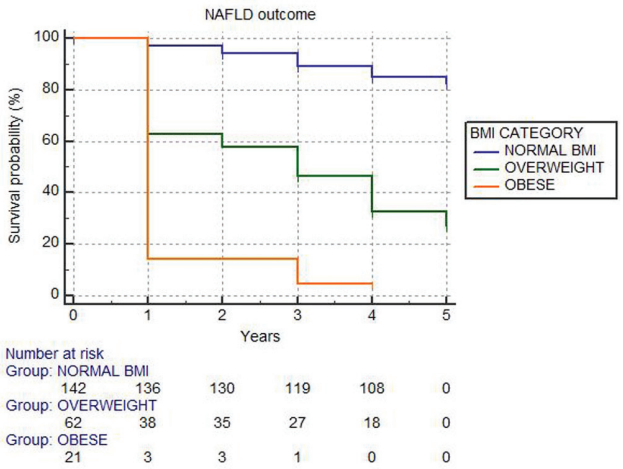
Background: Patients with IBD are at higher risk for non-alcoholic fatty liver disease (NAFLD) comparing to general population. Complex pathogenesis of NAFLD in IBD may be related to disease-specific risk factors such as chronic inflammation, steroid exposure, drug induced hepatotoxicity, malnutrition and alteration of gut microbiota, which is emerging as a major factor in the pathogenesis of NAFLD. The goal of the study was to investigate factors associated with NADLF and advanced liver fibrosis (ALF) in patients with CD and UC.

Methods: This is a retrospective study on IBD patients without extraintestinal manifestations and known liver disease. NAFLD was defined as Hepatic Steatosis Index (HSI) ≥ 36, and ALF was defined as FIB-4 ≥ 2.67. Predictors of NAFLD development were analysed using Kaplan–Meier and Cox regression analyses.

Results: In this retrospective study, we have included 225 IBD patients; 72.4% (n = 163) patients with CD and 27.6% (n = 62) patients with UC (median age 41.2 yr, 53.7% males) which were observed for a median of 4.6 years. There were 63.1% (n = 142) patients with normal BMI, 27.6% (n = 62) overweight and 9.3% (n = 21) obese patients. Obese patients had the highest HIS score 43.9 ± 5.9, following with overweight 37.8 ± 5.7 and normal BMI 30 ± 4.3 kg/m², p < 0.001. During the follow-up obese and overweight patients had higher risk of developing NAFLD comparing to patients with normal BMI (obese HR = 11.1 95% CI 4.3–28.3 and overweight HR = 5.55 95% CI 3.4–9.1, Logrank test p < 0.001) (Figure 1). Regarding FIB-4 score there, was no difference among different BMI categories (p = 0.192), and there was no difference in ALF development in the follow-up period (Logrank test p = 0.91). In Cox proportional-hazards regression significant predictors for NAFLD development were dyslipidaemia HR=2.11, 95% CI 1.2–3.7, overweight HR=6 95% CI 3.6–10, and obesity HR=13.4, 95% CI 7–35.



Conclusion: NAFLD is frequent comorbidity in patients with CD and UC, which can lead to development of advanced liver fibrosis. Our results show that patients with IBD have a high risk of NAFLD development, whereas the increased risk for ALF was not observed. Overweight and obese patients and those with dyslipidemia should be closer monitored due to significantly higher risk of NAFLD. This study points out the complexity disease-specific risk factors and

importance of better stratifying IBD patients at risk of NAFLD and advanced liver fibrosis.

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Scoring endoscopy in pediatric inflammatory bowel disease: a way to improve quality

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Background: The aim of mucosal healing (MH) as a therapeutic target in paediatric inflammatory bowel diseases (IBD) has emphasised the role of the endoscopy. There is a great variability in evaluating mucosal lesions among different operators, especially in paediatric patients. This multicentre prospective study aims to evaluate the interobserver agreement among paediatric endoscopists in using validated endoscopic scores of IBD in children.
Methods: Fifteen videos of follow-up ileocolonoscopies in children with IBD (8 ulcerative colitis –UC-, 7 Crohn's disease –CD-) were selected from 3 different referral sites in Italy. Eleven paediatric endoscopists from different centres were asked to evaluate all videos as independent and blinded readers. The scoring systems used were ulcerative colitis Endoscopic Index of Severity (UCEIS) for UC and simple endoscopic score for Crohn's disease (SES-CD) for CD. Kappa statistics and intraclass correlation coefficients were used to measure agreement. Furthermore, an experienced adult gastroenterologist evaluated the same videos and scores them. His results were compared with paediatric endoscopists' findings.
Results: The median age of the participants was 40 (interquartile range: 6) with a median experience of 12 (14) years in centres with a median number of 140 (230) of paediatric IBDs. Intercluster correlation agreement was 0.298 (95% CI: 0.13–0.55) for UC and 0.266 (0.11–0.52) for CD. When a disease activity categorisation was adopted (remission, moderate, mild and severe) Fleiss' kappa coefficient was 0.408 (0.29–0.53) for UC and 0.552 (0.43–0.73) for CD (Figure 1). When stratified for item vascular pattern of UC was the most reliable item IC: 0.624 (0.321–0.854). The comparison between paediatric and expert gastroenterologist's scores is shown in Figure 2. In the multivariate analysis none of the reviewer characteristic affected the readers' errors.
Conclusion: This pilot multicentre study shows that there is a low level of agreement among paediatric endoscopists in evaluating children with IBDs. Agreement improved after using a disease activity categorisation, with better results for CD. Regardless to experience, all readers showed a low-grade accordance with adult gastroenterologist. According to these findings, the use of scoring systems should be implemented for all paediatric endoscopists. Future specific training programs should be considered to pursue this goal.

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Systematic review: patient perceptions of monitoring tools in inflammatory bowel disease

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Background: Management of inflammatory bowel disease (IBD) is directed toward both clinical symptoms as well as objective disease activity as a part of a 'treat to target' strategy. Despite the increasing burden of disease activity assessment in IBD, patient preferences for monitoring tools have scarcely been considered. This study aimed to describe the available evidence for patient preference, satisfaction, tolerance and/or acceptability of the available monitoring tools in adults with IBD.
Methods: A systematic search of Embase, Medline, Pubmed, Cochrane Central and Clinical Trials.gov from January 1980 to April 2019 was conducted using PRISMA best practice guidelines. Included were all study types reporting on the perspectives of adults with confirmed IBD on monitoring tools, where two or more such tools were compared. Outcome measures with summary and descriptive data were presented.
Results: 10 studies evaluating 1846 participants were included. Study size ranged from 18 to 916 participants. Monitoring tools included venepuncture, stool collection and faecal calprotectin (FC), gastrointestinal ultrasound (GIUS), computed tomography (CT), magnetic resonance imaging (MRI), wireless capsule endoscopy (WCE), barium follow-through, and endoscopy. The measurement tools used were visual analogue scales (VAS), Likert scales or binary preference questions. Outcome domains were patient satisfaction, acceptability of monitoring tool, and patient preference. Meta-analysis was not possible due to heterogeneity of data. Overall, patient preference was for non-invasive tools of disease monitoring and these were associated with a higher level of acceptability. Across all included studies, GIUS was identified by patients as the preferred tool for disease activity assessment. Both FC and other forms of imaging (MRE and CTE) were generally considered preferable to endoscopy, however less so than GIUS. Patient preference for blood testing varied, but in one study was lower than endoscopy. Two studies compared VAS acceptability of multiple IBD monitoring tools. Among 1037 patients, GIUS was considered the most acceptable IBD monitoring tool (mean VAS 9.29), as compared with venepuncture (9.28), WCE (8.5), MRE (8.08), stool collection (7.87), colonoscopy (7.07) and sigmoidoscopy (5.27).