**Background:** Patients with inflammatory bowel disease (IBD) have an increased risk of colorectal cancer. Dye-based chromoendoscopy (CE) is the currently recommended method for the detection of dysplasia in IBD surveillance colonoscopy; the role of virtual chromoendoscopy (VCE) is not yet well defined. To compare CE with VCE using iSCAN1 digital image enhanced colonoscopy in the detection of colonic neoplastic lesions in IBD patients.
**Methods:** Randomised, single-centre trial to assess the detection rate of colonic neoplastic lesions in patients with long-standing IBD. Patients were randomised in two arms: dye-spraying CE using indigo carmine and electronic VCE using iSCAN1 digital image. Detection rates of dysplasia or any neoplastic lesion were compared by the two endoscopic techniques.
**Results:** A total of 129 patients were studied (67 by CE and 62 by VCE). Demographic and clinical characteristics were homogeneous in the two groups; 26 Crohn´s disease and 103 ulcerative colitis, 52% women, mean age 50 years, median duration of IBD 204 months, family history of colorectal cancer in 10 (8%), associated primary sclerosing cholangitis in 8 (6%), personal history of colorectal dysplastic lesions in 12 (9%), and more than 50% colonic involvement in 72 (56%). In total, 27 lesions (9 hyperplastic, 8 adenomatous and 10 low-grade dysplasia) were detected in 23 patients, without differences between CE and VCE arms (15 [22%] and 12 [19%] lesions, respectively; $p = 0.98$); on the other hand, neoplastic lesion (dysplasia or adenoma) detection rates was similar (12 [18%] in CE and 6 [10%] in VCE arms, $p = 0.2$). The duration of the withdrawal time of colonoscopy in minutes for patients in the CE group was median 14 min and in the VCE group was median 10 min ($p < 0.001$).
**Conclusion:** There is no statistical difference between CE and VCE using iSCAN1 in the detection rate of colonic neoplastic lesions in IBD patients. Surveillance colonoscopy with VCE (iSCAN1) spends less time than conventional CE.

## P300

## Colectomy and health-related quality life in children with ulcerative colitis

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**Background:** Restorative proctocolectomy and ileal pouch-anal anastomosis (IPAA) is the recommended elective surgery for children with ulcerative colitis (UC). The aim of the present study was to evaluate health outcomes of children with UC and undergone restorative proctocolectomy with IPAA and to compare preoperative and postoperative health-related quality of life (HRQoL).
**Methods:** We reviewed the hospital records of all paediatric patients who had undergone surgery for UC between January 2009 and December 2016 in the Units of Paediatric Surgery and Gastroenterology of the University Hospitals of Messina and Genoa. Surgical treatment was represented by restorative proctocolectomy and laparoscopic IPAA. Patients and parents were interviewed by telephone before and after surgery, and responded to the modified IMPACT III questionnaire about health outcomes and HRQoL. The final version was made up of 15 closed questions of functional outcomes and HRQoL. All of the issues were grouped into 5 domains, such as gastrointestinal functional aspects (7 questions), school functioning (2 questions), social functioning (3 questions), emotional functioning (3 questions). The questionnaire was scored on a five-point scale with higher scores indicating a better HRQoL. The total score ranged from 35 (worst HRQoL) to 175 (best HRQoL).
**Results:** Data were obtained in 30 patients (16 males), who underwent surgery after a median post-diagnosis period of 3 years (range 1–4.5), at a median age of 12 (range 3–16). The most common indication for colectomy was acute severe colitis (63%, $n = 19$). Table 1 shows all the functioning total scores before and after IPAA. HRQoL scores showed a statistically significant improvement after IPAA. This difference was observed in all dimensions of HRQoL (symptoms, school attendance, social activities, and emotional functioning). Overall, nearly all were completely satisfied with the outcome of colectomy. No operation-related mortality was reported. By the end of the follow-up, one patient developed pouchitis 1 month after colectomy, and responded well to antibiotic therapy.
**Conclusion:** Our data confirmed that HRQoL is low in children with UC referred for possible operation, and showed that surgical treatment may positively affect the overall HRQoL.

## P301

## Agreement in histologic diagnosis of preneoplastic lesions in inflammatory bowel disease: Results from a national survey in Italy

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**Abstract P300 Table 1.** Functioning scores before and after surgery

| Domain | 12 months before surgery ($n = 30$) | 6 months after surgery ($n = 30$) | p-value | 12 months after surgery ($n = 30$) | p-value | 6 vs. 12 months |
|---|---|---|---|---|---|---|
| Gastrointestinal and functional aspects | 1.8 ± 1.3 | 3.44 ± 1.44 | <0.0001 | 4.30 ± 1.04 | <0.0001 | <0.0001 |
| School functioning | 1.4 ± 0.97 | 3.67 ± 1.5 | <0.0001 | 4.5 ± 1.14 | <0.0001 | 0.0056 |
| Social activities | 2.04 ± 1.54 | 2.82 ± 1.57 | <0.0001 | 4.22 ± 1.26 | <0.0001 | <0.0001 |
| Emotional functioning | 2.18 ± 1.61 | 3.15 ± 1.59 | <0.0001 | 4.12 ± 1.28 | <0.0001 | <0.0001 |

**Background:** Inflammatory bowel diseases (IBD) are chronic inflammatory conditions of gastrointestinal tract: the inflammatory damage increases the risk of developing preneoplastic and neoplastic conditions. Therefore, a good agreement between pathologists in the detection of preneoplastic lesion is essential in the management of IBD patients, in order to decrease the risk of progression towards neoplastic lesions. An agreement study on 4 pathologists and 38 cases of dysplasia demonstrated a fair agreement (k=0.4).[1] A similar study demonstrated that the lowest level of agreement in the category indefinite for dysplasia (κ = 0.251).
**Methods:** The study consisted of a survey about diagnostic agreement in a series of preneoplastic lesions of IBD-affected patients, based on digital images. The occurrence of the disease and the occurrence of dysplasia were considered in the study. The study enclosed biopsy specimens from 30 colonoscopies and 1 surgical specimen, related to 20 patients with a clinical pattern of IBD from 4 reference centres in Italy. Digital slides were uploaded in an open-source learning platform. For each endoscopy, sampling sites with similar morphology were aggregated in 54 'blocks', and a series of close-ended questions about (A) the occurrence of IBD (active, in remission, absent, not evaluable) and (B) the evidence of dysplasia (LG, HG, absent, undefined) have been submitted for every block. For each case, a final comprehensive evaluation about (1) the occurrence of IBD (present, absent, unsuitable for assessment), (2) the disease classification (ulcerative colitis, Crohn's disease, unfit for differential diagnosis, not possible for lack of clinical data), (3) the occurrence of IBD-related dysplasia (IBD with dysplasia, dysplasia not IBD-related, dysplasia untestable, absent) and (4) the classification of dysplasia (sporadic adenoma, ALM, DALM, unclassifiable) were provided. Twenty gastrointestinal pathologists from as many centres in Italy were enrolled.
**Results:** 325 of the 400 tests were successfully concluded.
Agreement values

| | |
|---|---|
| overall agreement | mean k value 0.59 |
| evidence of IBD in the cases | k value not assessable for excess of concordant answers |
| differential diagnosis SPORADIC ADENOMA / DALM / ALM | k value not assessable for excess of concordant answers |
| evidence of dysplasia in the cases | mean k value 0,37 |
| overall evidence of dysplasia in blocks | mean k value 0.42 |

**Conclusion:** A preliminary data analysis demonstrated a good agreement about the occurrence of IBD, and a lower agreement about the occurrence of dysplasia and its classification in IBD. Analysis of the correlation between agreement and clinical-histologic parameters could provide interesting spotlights on diagnostic algorithms in this field.

## P302

## Diagnostic accuracy of a serum-based biomarker panel for endoscopic activity in ulcerative colitis

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**Background:** The endoscopic healing index (EHI, Monitr, Prometheus Biosciences, San Diego, CA) is a serum-based biomarker panel available for identifying mucosal inflammation in Crohn's disease.[1] We aimed to study its performance for identifying mucosal inflammation in ulcerative colitis.
**Methods:** EHI was analysed on serum samples paired with endoscopies from adult patients (≥18 years) participating in a prospective biobank (June 2014 to December 2017). Area under receiver operating characteristic curves (AUROC) were used to assess the accuracy of EHI for endoscopic improvement (EI; Mayo endoscopic sub-score [MES] 0–1) and endoscopic remission (ER; MES 0). Sensitivity for EHI was calculated using a cut-off previously identified for Crohn's disease which optimised performance for ruling out endoscopic activity (20 points). Alternative cut-offs were explored.
**Results:** A total of 114 patients were included, with an overall prevalence of 56% and 44% for EI and ER. The AUROC was 0.79 (95% CI 0.70–0.87) for EI and 0.70 (95% CI 0.61–0.80) for ER. A cut-off of 20 points had a sensitivity of 94% (95% CI 83–99%) for ruling out moderate to severe (MES 2–3) endoscopic activity, and a sensitivity of 84% (95% CI 72–92%) for ruling out mild to severe (MES 1–3) endoscopic activity. A cut off of 40 points or higher had > 90% specificity for ruling in moderate to severe (MES 2–3) or mild to severe (MES 1–3) endoscopic activity. (Table 1)

**Table 1.** - Sensitivity and Specificity of EHI

| | Sensitivity | | Specificity | |
|---|---|---|---|---|
| **EHI Value** | EI | ER | EI | ER |
| 20 points | 94% | 84% | 42% | 40% |
| 40 points | 40% | 34% | 89% | 90% |
| 60 points | 19% | 15% | 98% | 98% |

**Conclusion:** EHI has favourable accuracy in identifying the presence of mucosal inflammation in patients with ulcerative colitis. Although it was not developed and validated for ulcerative colitis, further validation is warranted.

**Reference**

1. D'Haens G et al. Development and validation of a test to monitor endoscopic activity in patients with crohn's disease based on serum levels of proteins. *Gastroenterology*, 2019, In Press.

## P303

## Role of parietal healing by ultrasound in the evolution of patients with Crohn's disease

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**Background:** The objective of this study is to assess the degree of parietal involvement with ultrasound and see how they influence the prognosis according to the findings.
**Methods:** It was defined as 'parietal healing' the normalisation of ultrasound findings in a previously affected segment (parietal thickness less than 3 mm and absence of parietal hyperaemia). Therefore, patients with absence of ultrasound activity but without reaching parietal healing were considered to be those without significant inflammatory signs (parietal thickness <4.5 mm and absence of