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Strictureplasty for Crohn's disease of the small bowel in the biological era: long-term outcomes and risk factors for site specific recurrence

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Background: Patients affected by Crohn's disease (CD) often require multiple surgeries and are at higher risk of short bowel syndrome. While bowel-sparing techniques should still have an indication in these patients, a considerable reduction of the use of strictureplasty has been observed, especially since the introduction of biological drugs.

Methods: Patients undergoing strictureplasty for small bowel CD from 2002 were included.

Risk factor for recurrence of CD were analysed through a multi-level logistic regression analysis, considering the hierarchical structure of the data. Level-2 variables were related to patient, level-1 to strictureplasty. A model without predictors was run to calculate the intraclass correlation coefficient to evaluate the degree of homogeneity of the outcome within patients; an intermediate model adding level-1 and level-2 variables and testing all intra-level interactions was subsequently performed. The estimated residual standard deviation and the estimated residual intraclass correlation of random-intercept logistic model were calculated. All *p* values refer to two-tailed tests of significance. A *p*-value of <0.05 was considered significant.

Results: A total of 266 patients were included in the study. Overall, 718 strictureplasties were performed. Median follow-up time was 96 months (6–209). Site specific recurrence rate was 1.6% at 2 years, 12.7% at 5 years, and 25.7% at 10 years.

	Number, mean or median	%, standard deviation or range
Total number of patients	266	
Mean number of strictureplasties/patient	1.95	±2.85
Median age of patients (years)	39.5	18–76
Median years of disease	8.2	0.1–37
Number of additional resections	196	73.7%
Smoking after strictureplasty	68	25.6%
Biologics after strictureplasty	79	29.7%
Biologics before strictureplasty	72	27.1%
Previous surgery for Crohn's disease	85	32.0%

Characteristics of patients undergoing strictureplasty for Crohn's disease

	N	%
Total number of strictureplasty	718	
Ileum	440	61.3
Jejunum	135	18.8
Terminal ileum	143	19.9
Conventional strictureplasty	643	89.6
Nonconventional strictureplasty	75	10.4
New stricture	651	90.7
Recurrence on strictureplasty	36	5
Recurrence on anastomosis	31	4.3

Characteristics of the strictureplasties performed

Variables	Odd ratio	Standard error	p-value
Ileum location	1.49	0.35	0.091
Nonconventional strictureplasty	3.57	1.72	0.008
Strictureplasty on previous anastomosis	13.59	11.18	0.002
Age	0.98	0.01	0.246
Total number of strictureplasties	1.13	0.08	0.088
Use of biologics after strictureplasty	4.75	2.25	0.001
Duration of disease	1.26	1.04	0.776

Results of the multi-level regression logistic analysis of risk factors for site specific recurrence.

Conclusions: Strictureplasty is a safe procedure and is correlated with acceptable recurrence-free rates also after a very long follow-up time. Despite nonconventional strictureplasties are associated with a significantly higher risk of site specific relapse, whenever possible a bowel sparing technique should be performed, especially in the presence of long strictures. In case of a recurrence of a previous anastomosis, a resection should be preferred. The use of biologics after surgery identifies patients at higher risk of recurrence. The effect of biological drugs on long-term outcome after bowel sparing technique should be assessed in future prospective trials.

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Clinical features, therapeutic requirements, and evolution of patients with Crohn's disease and upper digestive tract involvement (CROHNEX study)

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Background: Patients with upper (L4) and diffuse (L1 + L4) Crohn's disease (CD) may have a more aggressive and refractory disease course. However, evidence on this particular sub-type of patients is scarce. Clinical guidelines do not offer specific protocols on how to manage them.

Methods: To identify the clinical characteristics, therapeutic requirements and complications that are independently associated with an upper digestive tract CD involvement.

METHODS: Retrospective study of cases and controls matched (1: 2) by sex and age in patients with CD (L4 or L1 + L4: cases; L1 or L3: controls) of the ENEIDA database (49 hospitals). The small intestine was evaluated with radiologic and/or endoscopic examination, and complex perianal disease was excluded. Clinical variables: pattern, severity, anaemia; Complications: stenosis, fistula, abscess, perforation and digestive bleeding; Therapeutic requirements: use of 1 anti-TNF, more than 1 ant-TNF, anti-TNF intensification, second-line biologic drug, iv iron, blood transfusions, enteral nutrition, endoscopic/radiological treatments, surgeries and hospitalisations were investigated. A logistic regression analysis with those significant variables in univariate analysis (SPSS) was performed.

Results: In total, 919 cases and 1838 controls were identified. Multivariate analysis showed that cases were independently associated to stricturing pattern at diagnose (OR: 1.2, 95% CI: 1–1.5; $p = 0.048$), iron deficient anaemia (OR: 2.3, 95% CI: 1.6–3.4; $p < 0.0001$), more extensive involvement (> 30 cm) (OR: 2.7, 95% CI: 2.3–3.3; $p < 0.0001$), and the use of second-line biologics during follow-up (OR 1.6, CI 95% 1–2.4; $p = 0.04$). In contrast, they exhibit less abscesses (OR 0.6, 95% CI: 0.5–0.8; $p = 0.001$) and have less familial history of inflammatory bowel disease (OR 0.7, 95% CI: 0.6 –0.9; $p = 0.008$).

Conclusions: In the most extensive series of upper digestive tract involvement in CD, it is shown that they present a more advanced disease at CD diagnosis, suggesting either a late diagnosis or different physiopathologic pathways for L4 involvement. Consequently, they are more refractory to treatments, requiring more frequently second-line biologics. A specific diagnostic and therapeutic strategy must be considered for these patients. This includes consider signs that allow a high rate of suspicion such as iron deficient anaemia in patients with normal upper and lower endoscopy.

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Post-induction Infliximab trough levels in severe and moderate paediatric ulcerative colitis: preliminary data of a retrospective, population cohort-based study

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Background: Recent adult evidences suggest that Infliximab (IFX) trough levels (TL) in acute severe colitis (ASC) patients may be decreased due to a higher faecal loss and severe tissue damage. The aims of this study were to evaluate post-induction trough levels (TL) in severe and moderate UC children and to compare disease outcomes.

Methods: This was a single-centre, retrospective study involving the IBD unit of the Children Hospital of Philadelphia. Children aged from 6 to 21 years with a confirmed diagnosis of UC, starting IFX with a PUCAI ≥35 and with available post-induction TL between July 2012 and July 2018 were recruited. The following information were recorded: age at diagnosis; disease extent, and clinical activity index based on PUCAI before IFX starting; therapeutic history, IFX dosage, timing between infusions, primary non-response (PNR), loss of response (LOR), and surgery after IFX starting. Post induction TL and laboratory evaluations including complete blood count, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), and albumin at the moment of IFX starting were also collected.

Results: Fifty-two UC children were included in this preliminary analysis. Of these, twenty-one (38.5%) had a PUCAI ≥ 65, while 31 (61.5%) showed PUCAI values ≥35 < 65. When compared with moderate UC children, patients affected by ASC presented significant lower median values of haemoglobin ($p = 0.05$), while showing significant higher values of ESR ($p = 0.04$). The median IFX dosage at the induction was significantly higher in the ASC group when compared with the moderate UC (10 vs. 5 mg/kg; $p = 0.03$). Median post-induction TL were lower in patients with ASC when compared with moderately severe UC with a trend towards statistical significance [4.35 (0–40) vs. 11.5 (0–40); $p = 0.07$) (Figure 1).