Fecal Incontinence in Inflammatory Bowel Disease

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BACKGROUND

- Fecal incontinence (FI) is the involuntary loss of liquid or solid stool
- FI is reported in approximately 2-15% of the general population and between 20-73% of patients with inflammatory bowel disease (IBD)
- The factors that lead to the development of FI in patients with IBD have not yet been clearly defined.

OBJECTIVE

- To determine the prevalence and risk factors for FI in IBD by using both patient-reported outcome data and objective measures from patients enrolled in a research registry

METHODS

- A retrospective review of clinical data collected prospectively as a part of the Study of a Prospective Adult Research Cohort (SPARC) registry from the University of Maryland site
- Inclusion criteria were adults with ulcerative colitis (UC), Crohn's disease (CD), and indeterminate colitis (IC) who answered the questions: "During the last month, have you had leakage of stool while sleeping and/or while awake?"
- Exclusion criteria were the presence of a current ostomy, history of ileal pouch-anal anastomosis, and patients missing data regarding disease type or characterization
- Disease severity was determined using the short Crohn's Disease Activity Index (sCDAI) or 9-point Ulcerative Colitis Disease Activity Index (UCDAI)
- Analysis consisted of descriptive statistics to describe the cohort, comparative analysis using Chi Square and Fischer Exact analysis, and logistic regression

RESULTS

- 500 patients were included: cohort characteristics are listed in *Table 1*
- FI was reported in a total of 71 (14%) patients: 50 (14%) with CD, 20 (14%) with UC, 1 (13%) with IC
- UC was limited to the rectum in 7 (4.8%), left-sided in 40 (27.4%), extensive in 16 (11.1%), and pan-colonic in 74 (51.4%) patients, and unknown in 4.9 (7%)
- CD was inflammatory in 131 (37.3%), penetrating in 102 (29.4%), and obstructing in 110 (31.7%), and unknown in 4 (1.2%)

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Table 1: Cohort Characteristics

Variable	Overall (N=500)	CD (N= 347)	UC (N=145)	IC (N=8)	P-value
Average Age (SD)	40 (13)	39 (12)	43 (15.0)	45 (14.4)	0.0006
Female sex (%)	281 (56)	202 (58)	76 (52)	3 (38)	0.27
Race					0.26
White	394 (79)	266 (77)	122 (84)	6 (75)	
African American	78 (16)	64 (18)	12 (8)	2 (25)	
Asian	6 (1)	4 (2)	2 (1)	0	
Other/Unknown	22 (4)	13 (4)	9 (6)	0	
Smokers (%)	61 (12)	48 (14)	13 (9)	0	0.19
Average disease duration (SD)	14 (10)	15 (10)	12 (9)	14 (12)	0.003
Any biologic use	331 (66)	249 (72)	78 (54)	4 (50)	0.0004
Any incontinence	71 (14)	50 (14)	20 (14)	1 (13)	0.97

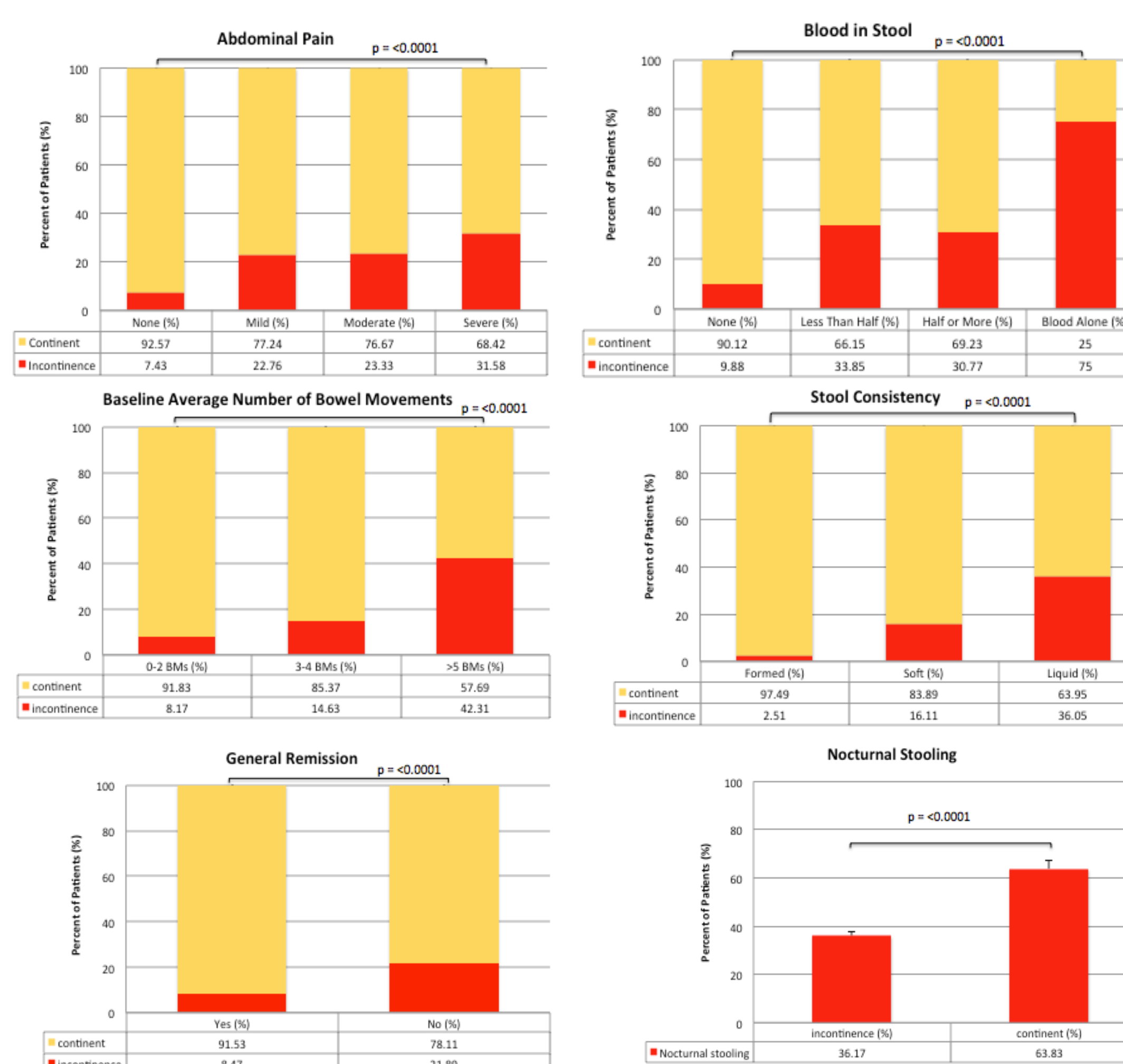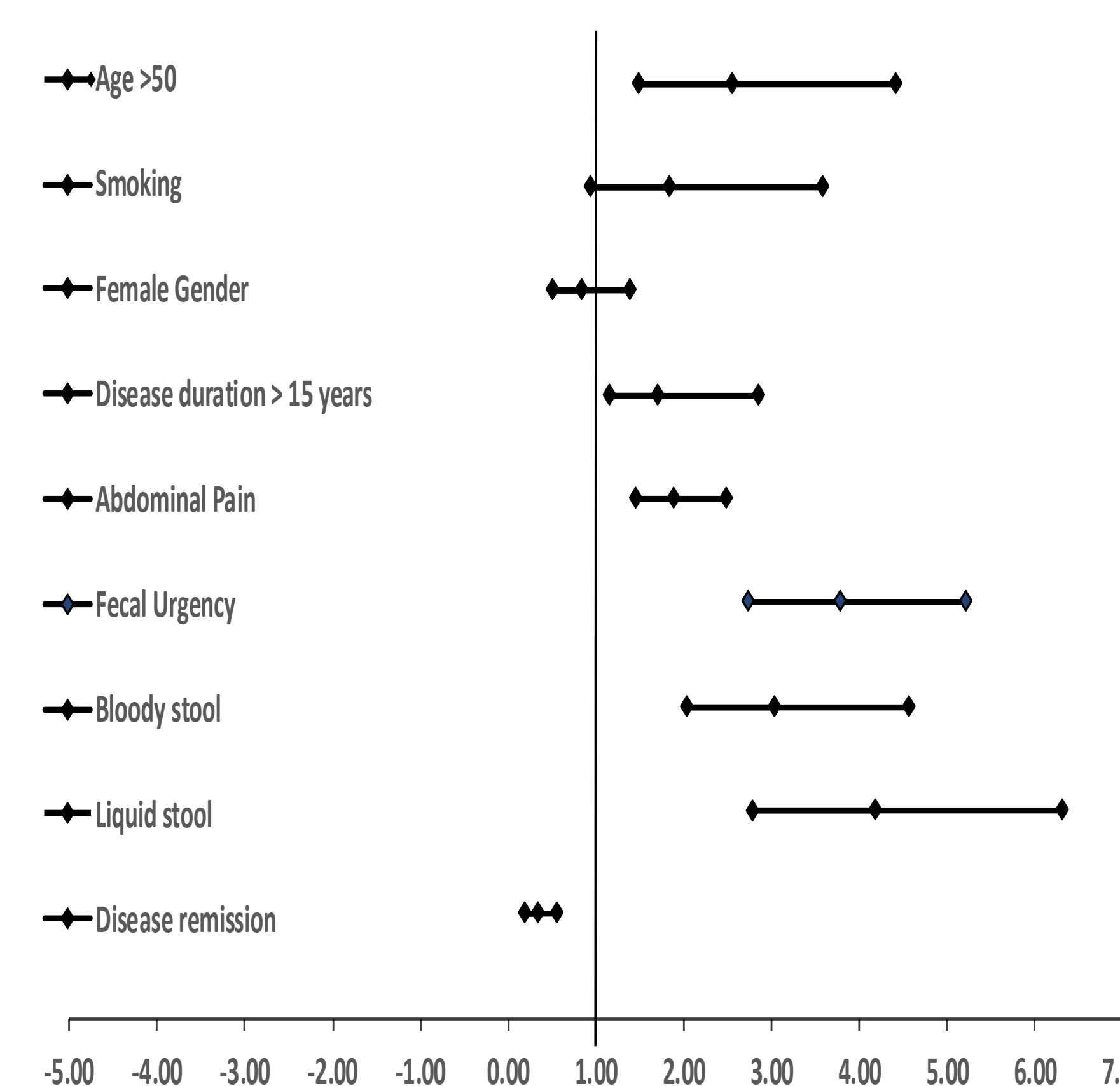## Figure 1: Symptoms in Fecal Incontinence

Figure 2: Forest Plot of Risk Factors in Fecal Incontinence

RESULTS

- Disease location was ileal in 103 (29.6%), colonic in 54 (15.6%), ileocolonic in 178 (51.3%), and isolated to the upper tract in 2 (0.6%). 69 (19.9%) patients had perianal involvement
- Patients with FI reported significantly more abdominal pain, a higher number of bowel movements, nocturnal stooling, liquid or soft stools, bloody stools, a lower general well-being, and a lower physician global assessment score (each p<0.0001) as seen in *Figure 1*
- FI was significantly associated with worsening disease activity on univariate analysis by sCDAI scores (p=0.0001) and UCDAI scores (p=0.001)
- On univariate analysis, FI was more common in adults ages >50 years-old (p=0.0005) and patients with disease duration >15 years-old (p=0.037)
- FI was not associated with UC or CD disease location (p=0.34 and 0.29 respectively), CD phenotype (p=0.1), or perianal involvement (p=0.72).
- FI was not associated with female gender, previous exposure to biologic therapy, or smoking status
- In a logistic regression model including patients with UC and CD, patients with CD were 1.4 times more likely to have FI than patients with UC, patients with an age >50 years were 1.7 times more likely to have FI than patients with an age <50 years-old, and patients with fecal urgency were 2.7 times more likely to have FI than patients without urgency controlling for other significant variables.
- On multivariable analysis limited to patients with CD only, patients were significantly more likely to have FI if they were greater than 50 years old, had fecal urgency, liquid stools, a higher sCDAI score, and a worse physician global assessment (p<0.05). They were significantly less likely to have FI if they were in symptomatic remission (p<0.05).
- For patients with UC only, patients were significantly more likely to have FI if they had fecal urgency, liquid stools, a higher UCDAI score, and a worse physician global assessment. They were significantly less likely to have FI if they were in symptomatic remission.
- 19 (8%) of patients with CD and 2 (2%) of patients with UC reported FI despite being in clinical remission

CONCLUSIONS

- About 1 out of 7 patients with IBD will develop FI.
- FI is more common in patients over the age of 50 years and in those with active disease.
- About 8% of patients with CD report FI even in remission
- Our results show a significant unmet need in management of FI in IBD.