

Faecal incontinence in inflammatory bowel disease (IBD): effect on quality of life

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Variable	Category	FI Number (%)	Odds ratio (95% CI)	p-value
Diagnosis	Crohn's	1119/1529 (73%)	1	0.39
	UC	1169/1590 (74%)	1.02 (0.87, 1.19)	
	Crohn's Colitis	55/67 (82%)	1.68 (0.89, 3.17)	
	Other	45/58 (76%)	1.27 (0.68, 2.38)	
CDAI score ^(*)	-	-	1.26 (1.21, 1.31)	<0.001
UCDAI score ^(**)	-	-	1.30 (1.24, 1.36)	<0.001
Age	16-20	13/23 (57%)	1	<0.001
	21-30	202/317 (64%)	1.35 (0.57, 3.17)	
	31-40	429/605 (71%)	1.86 (0.80, 4.32)	
	41-50	490/646 (76%)	2.42 (1.04, 5.61)	
	51-60	493/631 (78%)	2.75 (1.18, 6.40)	
	61-70	478/629 (76%)	2.44 (1.05, 5.67)	
	71-80	185/248 (75%)	2.26 (0.94, 5.41)	
	81-100	33/48 (69%)	1.69 (0.61, m4.72)	
Gender	Female	1646/2168 (76%)	1	<0.001
	Male	745/1080 (69%)	0.70 (0.60, 0.83)	
Vaginal delivery ^(***)	No	683/956 (71%)	1	<0.001
	Yes	953/1195 (80%)	1.57 (1.29, 1.92)	
Complications in delivery ^(****)	No	646/817 (79%)	1	0.43
	Yes	304/375 (81%)	1.13 (0.83, 1.54)	

Variable	Category	FI Number (%)	Odds ratio (95% CI)	p-value
Ileo-anal pouch operation	No	2329/3175 (73%)	1	0.008
	Yes	52/58 (90%)	3.15 (1.35, 7.36)	
Anal fistula surgery	No	2205/3025 (73%)	1	<0.001
	Yes	176/208 (85%)	2.05 (1.39, 3.00)	
Haemorrhoid operation	No	2201/2995 (73%)	1	0.56
	Yes	188/250 (75%)	1.09 (0.81, 1.47)	
Anal stretch	No	2313/3160 (73%)	1	0.001
	Yes	76/85 (89%)	3.09 (1.54, 6.20)	
Anal fissure	No	2323/3170 (73%)	1	0.006
	Yes	66/75 (88%)	2.67 (1.32, 5.39)	
Rectal prolapse	No	2364/3215 (74%)	1	0.23
	Yes	25/30 (83%)	1.80 (0.69, 4.72)	
Other surgery ^(****)	No	1685/2375 (71%)	1	<0.001
	Yes	695/857 (81%)	1.76 (1.45, 2.13)	
ICIQ-UI score ^(****)	0	1422/2087 (68%)	1	<0.001
	1-6	523/654 (80%)	1.87 (1.51, 2.31)	
	7+	440/500 (88%)	3.43 (2.58, 4.56)	

^(*)Analysis on Crohn's patients only; ^(**)Analysis on UC patients only; ^(***)Analysis for females only; ^(****)Analysis for females with a vaginal delivery only; ^(****) Any of total colectomy, partial colectomy, ileostomy, colostomy, small bowel surgery or any other surgery for IBD; ^(****) Score range 0 – 16, higher score = more severe incontinence

AIMS OF THE STUDY

It is not known whether recognised predisposing risk factors for faecal incontinence (FI) are relevant to people with inflammatory bowel disease (IBD).

FI impacts on quality of life in the non-IBD population but the effect of FI on quality of life in the IBD population is unknown. We aimed to determine the frequency and severity of FI in people with IBD, its associations with known risk factors in non-IBD FI, and the effect on quality of life.

STUDY DESIGN, MATERIALS AND METHODS

We randomly sampled 10,000 members of a national Crohn's and Colitis support group who met the study criteria (over 18, resident anywhere in the country of study, self-reported diagnosis of IBD, without current stoma, ability to understand English). The questionnaire was designed for this study by the authors based on current evidence.

Respondents chose between paper and online questionnaire format, and received one reminder. Demographic information, medical history, bowel continence status (ICIQ-B*), urinary continence (ICIQ-UI[†]), quality of life (IBD-Q[‡]) and free text responses about faecal incontinence were collected. Current disease activity was also reported using the Harvey Bradshaw Index for Crohn's Disease activity (range 0-16 + number of liquid stools per day), and the Walmsley Index for Ulcerative Colitis disease activity (range 0-21). Data were managed using Excel and SPSS 18. *International Consultation on Incontinence Questionnaire—Bowels; [†]International Consultation on Incontinence Questionnaire—Urinary Incontinence; [‡]Inflammatory Bowel Disease Questionnaire ©McMaster University

RESULTS

4827 electronic or postal responses were received, of which 3264 were complete and included in the study (32.6% response rate). 2178 respondents were female (66.7%); mean age was 50.26 yrs (range 19-92 years); Crohn's Disease 1543 (46.98%); Ulcerative Colitis (UC) 1599 (48.97%); another form of IBD 126 (3.85%); no diagnosis given 6 (0.18%). 74% (2391) of respondents reported some FI (CI 72-75); 26% (857) reported that FI never occurred. Nine percent (299) reported regular FI. Significant associations were found between FI and age, gender, having a vaginal delivery, anal and colo-rectal surgery, and co-existing urinary incontinence.

Diagnosis

There was not an association between FI and diagnosis (UC vs Crohn's disease p=0.39). A one unit increase in Disease Activity Index (DAI - Harvey Bradshaw Index for Crohn's Disease or Walmsley Index for UC) scores (higher score = more active disease) increased the odds of FI by 26% for people with Crohn's Disease, and by 30% for people with UC. However, regular FI was reported by some people with low DAIs indicating that FI can occur regardless of disease activity.

Age

FI increased with age up to the 51 – 60 age group where occurrence peaked, but decreased with age from 61 – 100. The youngest respondents were least affected.

Gender

Incontinence was more likely in females than in males. The odds of FI were 0.7 in males compared with females.

Obstetric (childbirth) history

Risk of FI was increased by over 50% in women who had experienced at least one vaginal delivery, but self-reported obstetric complications (such as use of forceps, long second stage, baby over 4kg, breech, shoulder or face presentation) during vaginal delivery did not increase risk of FI (p=0.43).

Anal & colorectal surgery

There was a statistically significant association between FI and anal fistula surgery, and other colorectal or anal surgery (any of total or partial colectomy, previous ileostomy or colostomy, small bowel surgery or any other surgery for IBD) (all <0.001%), and ileo-anal pouch surgery (p=0.008), anal stretch (p=0.001) and surgery for anal fissure (p=0.006). Haemorrhoid operation (p=0.56) and rectal prolapse surgery (p=0.23) were not found to be significantly associated with FI, but numbers were small.

Urinary incontinence

1146 (35.3%) of respondents reported some degree of urinary incontinence (UI) (females 912: 79.6% of those with urinary incontinence, 27.94% of total respondents). UI was reported as occurring never (n=2105), about once a week or less often (n=247: 21.55%), two or three times a week (n=169: 14.74%), about once a day (n=542: 47.29%), several times a day (n=156: 13.61%), or all the time (n=32: 2.79%).

People with a higher urinary incontinence score, as measured by the ICIQ-UI, had a higher risk of FI. The odds of FI were over 3 times higher for people with an ICIQ-UI score of 7 or over, compared to those with a score of 0 (no urinary incontinence). 345 of study respondents (10.56%) experience FI either "sometimes" or "regularly" and experience UI at least once a day. Of these, 209 (72%) are female.

Quality of life

FI was found to have a significant effect on quality of life. Pearson correlation was used to examine the association between bowel control score and quality of life score (from the ICIQ-B), and between bowel control score (from the ICIQ-B) and social function score (from the IBD-Q). A significant relationship was found for each of these (p=<0.001).

INTERPRETATION OF RESULTS

Whilst these results are likely to be biased by selective responding, they indicate that many more people with IBD have FI than in the general population (<10%) (2). Even if all our non-respondents are continent, which seems unlikely, a minimum of 24% of people with IBD are likely to have FI. FI was no more likely to occur in Crohn's Disease than in Ulcerative Colitis but was clearly linked to disease activity. Age affected FI rates, up to a peak in the 51-60 year old group. This may be explained by other variables affecting FI such as obstetric history and surgery, which may be less likely to have occurred in younger age groups. The reduction in risk of FI after 60 may be linked to retirement – analysis of qualitative data from the study revealed that employment-related stress is believed by respondents to affect continence, with many reporting that faecal incontinence reduces, and sense of control increases, when they stop working. The differences in gender found are not reported in larger community prevalence studies of FI where the prevalence of FI is approximately equal in men and women. In this young population, the higher rate in women may be influenced by childbirth, or a longer and more complete anal sphincter in men may protect against FI related to diarrhoea. For women with IBD, it appears that vaginal delivery alone increases risk of FI, whilst in the non-IBD female population it is known that complications during vaginal delivery further increase the risk of FI when compared to the risk presented by vaginal delivery alone (3).

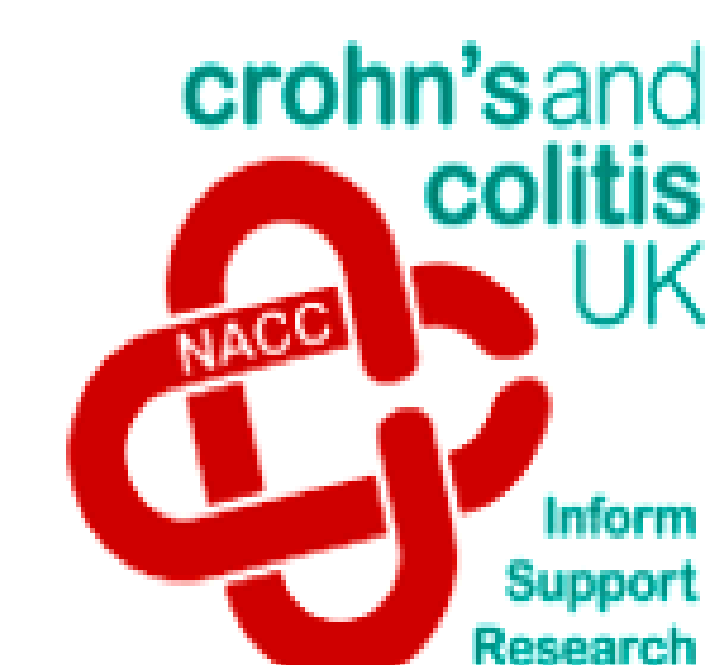
The connection between ileo-anal pouch surgery and FI is well established with many people reporting control during the day, but incontinence occurring at night when they are asleep – a pattern also repeated in our data. Anal and colorectal surgery is also associated with increased risk of FI in the non-IBD population. Presence of both urinary and faecal incontinence may suggest compromise to the pelvic floor affecting bladder and bowel control.

CONCLUDING MESSAGE

At least a quarter, and up to three quarters of people with IBD are likely to experience FI. This distressing symptom is linked to disease activity but regular incontinence does also occur in remission. FI is also associated with age, gender, vaginal delivery, most anal and colo-rectal surgery and co-existing urinary incontinence. FI is equally as likely in Crohn's Disease as in Ulcerative Colitis. Quality of life scores (ICIQ-B) and social function scores (IBD-Q) were worse in those with FI. There has never been an intervention study on the conservative management of FI in people with IBD, except for FI related to an ileo-anal pouch. There is a large and currently unmet need for help with continence in people with IBD.

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