RESEARCH

Are patients in the IBD clinic at risk of proctitis secondary to sexually transmitted infections?

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ABSTRACT

Objective To gauge the potential risk of sexually transmitted infection (STI) as a cause of proctitis in a cohort of patients with inflammatory bowel disease (IBD) and to gauge whether this cohort could benefit from STI testing in the future.

Design Patients attending the IBD clinic were given an anonymous questionnaire recording demographics, sexual behaviour, rectal symptoms, history of receptive anal intercourse (RAI), STIs and attitudes towards sexual health screening.

Setting A gastroenterology teaching hospital IBD clinic.

Patients 280 consecutive patients attending a teaching hospital IBD clinic over a consecutive 6-week period. All patients had an endoscopic, radiological and/or histological diagnosis of IBD.

Results 280 questionnaires were distributed and 274 analysed (3 incomplete, 2 not returned, 1 no sexual activity). 167 female (median: 46 years, range 17–81 years) and 107 males. Two males disclosed RAI and were used as a control. Of the 167 females, 96% were heterosexual, 2.4% were same-sex partners and 1.2% were bisexual. 14% had a history of RAI—this group had more previous STIs (40%) versus those with no history RAI (5%) ($p < 0.0001$; relative risk (RR) 13.41).

Chronic rectal pain was more frequent in women with RAI (RR 2.4; $p \leq 0.03$). No difference in rectal discharge (RR 1.75; $p = 0.72$) or bleeding ($p = 0.3$).

Conclusions This is the first report of sexual behaviours in a non-genitourinary medicine clinic; giving a unique insight into sexual practices in a cohort of patients with IBD. A past history of STI and RAI can identify risk and we propose testing for those with a history of STI, RAI, men who have sex with men and women aged under 25 years.

INTRODUCTION

Inflammatory bowel disease (IBD) is a common condition estimated to affect at

least 260 000 of the UK population. Ulcerative colitis accounts for 146 000 of those cases¹ and around 30% of those affected have proctitis alone. Symptoms of proctitis include rectal bleeding, discharge, pain and tenesmus.

While IBD remains the most common cause of proctitis, there are a number of other causes including radiation proctitis, diversion colitis, ischaemia, drug reaction and infection.² Sexually transmitted infections (STIs) including those caused by *Neisseria gonorrhoeae*, *Chlamydia trachomatis* (including serovars L1–3 that are associated with lymphogranuloma venereum (LGV)), *Mycoplasma genitalium*, *Treponema pallidum* and herpes simplex virus can also present with symptoms such as diarrhoea, rectal bleeding, tenesmus and anal discharge.³ Endoscopic features can mimic IBD with mucositis, ulceration, colorectal fistulas and cobblestoning. Histological examination can also be confounding with evidence of acute inflammation, crypt distortion, ulceration and rarely granuloma formation.^{4 5}

Patients presenting with these symptoms for the first time are often referred by their general practitioner to gastroenterology services for further assessment;⁶ gastroenterologists traditionally may not take a sexual history and therefore an STI-related condition may be missed or incorrectly labelled as IBD. Best practice for investigating patients with suspected IBD includes specialist review along with clinical examination, biochemical tests and endoscopic examination with biopsies for histology.⁷

Those with evidence of inflammation at endoscopy, due to STIs including LGV may be incorrectly diagnosed with IBD.⁸

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A single episode of proctitis can result in a lifelong diagnosis of ulcerative colitis that may expose the patient to unnecessary drug therapy and investigations including colonoscopy. Furthermore, patients with undiagnosed and untreated rectal STIs are at risk of disease progression, onward transmission of infection and increased susceptibility to HIV infection.

The prevalence of STIs has increased in the last decade and although some infections have seen a recent decline, the recent sharp rise in both gonorrhoea and syphilis infections is of concern.⁹ STIs continue to disproportionately affect young people under the age of 25 and men who have sex with men (MSM); however, there are reports of increasing STI diagnoses in older people. Rectal STIs can be transmitted by penoanal sex, oroanal sex, brachioproctical sex and via fomites such as sex toys. In women, trans-mucosal spread from infected cervicovaginal secretions can result in rectal infection in the absence of a history of receptive anal intercourse (RAI).

In the UK, population-based data on sexual attitudes and lifestyles have been recorded serially via the National Surveys of Sexual attitudes and Lifestyles studies (NATSAL). These have shown an increased diversity in sexual repertoire^{10 11} and a demonstrable increase in the reporting of heterosexual anal sex. The proportion of men reporting insertive anal sex with women has risen from a median of 7% to 17% and women reporting RAI with men has increased from a median of 6.5% to 15.1%.¹² Males and females aged between 16 and 24 years recorded the highest reporting of heterosexual anal intercourse with medians of 18.5% and 17%, respectively.¹²

The rise in both STI prevalence and reported RAI might suggest that there should be an increasing prevalence of STI-related proctitis. Symptoms can mimic proctitis with discharge, pain and bleeding. Anecdotal evidence suggests that genitourinary medicine (GUM) clinics seldom diagnose women with STI proctocolitis, although we know that 15% of rectal non-LGV chlamydia infections in MSM are symptomatic.¹³ This suggests that a proportion of these symptomatic cases are presenting to non-GUM services.

Putting this into context, our city (Dundee) is a high prevalence area for chlamydial infection with 948 females diagnosed in the year 2015/2016; we would expect up to 93% to be positive at the rectal site and 132 women per year to have symptomatic rectal chlamydia.

The aim of this study was to gauge the risk for STI proctitis in a cohort of patients attending the IBD clinics and gauge whether this cohort could benefit from STI testing in the future.

METHOD

To survey the sexual practices of our patients and to determine the prevalence of reported RAI, a short anonymous questionnaire, designed to be completed

in <5 min, was distributed to all patients in the waiting area of the weekly IBD clinic in Ninewells Hospital and Medical School in Dundee, over a consecutive 6-week period in July–August 2013. The questionnaire recorded age, sex, the number and gender of sexual partners in the preceding 1 and 6 months, the presence of rectal symptoms (in particular rectal pain, discharge and bleeding), a past history of RAI (ever), STI or STI screen (including HIV testing). It also recorded whether a sexual health discussion and STI screen would be considered acceptable within a gastroenterology outpatient clinic. All patients had an endoscopic, radiological and/or histological diagnosis of IBD. Patients were excluded if they were aged under 16 years, had diminished capacity or declined consent. Ethical approval was granted from the local ethical review board. Statistical analyses were performed using the Fisher's exact test.

RESULTS

A total of 288 patients attended clinic during the collection period. Eight patients were excluded (three incapacity issues, two called into clinic room prior to receiving questionnaire, three aged under 16 years). Questionnaires were distributed to 280 eligible patients; 278 questionnaires were returned (99.3% potential returns). Within the 278 completed questionnaires, there were 3 incomplete questionnaires that were excluded along with one respondent who disclosed no history of sexual activity. Therefore, 274 questionnaires were included in the analysis, of which 167 were female and 107 male. The median age was 46 years (range 17–81 years).

Only 4/107 males were MSM; 2 of whom disclosed a history of RAI. We therefore used the male contingent as a comparator group allowing calculation of relative risks (RR)—this created three groups: women who have had RAI, women who have not had RAI but maybe at risk of passive transfer of potentially infected genital secretions and men who were not at risk of passive transfer.

The remaining 167 female patients had a median age of 46 years (range 17–81 years). The majority were heterosexual: 96% (161) and 2.4% (4) had same-sex partners and 1.2% (2) had partners of both sexes.

Sexual behaviour

Ninety-one per cent of the patient cohort was in monogamous relationships (table 1). Of the remainder, men were more likely than women to have more than one sexual partner in a 6-month period (RR 3.1; $p=0.047$).

RAI was reported in 10% of the total cohort; 2/107 (2%) heterosexual males versus 24/167 (14%) females ($p=0.003$). Thirty-two per cent of female responders aged <25 years reported experience of RAI with

Table 1 Male and female sexual behaviours in a cohort attending an IBD clinic

	Total (n=274)	Male (n=107)	Female (n=167)
Median age (range 17–81) (years)	46	47	45
Same-sex sexual partners	4% (11)	4% (4)	4% (7)
Median number sex partner in 1 month	1	1	1
>1 sex partner in 1 month	3% (8)	5% (5)	2% (3)
Median number sex partners in 6 months	1	1	1
>1 sex partner in 6 months	6% (15)	9% (10)	3% (5)
Rectal discharge	12% (34)	11% (12)	13% (22)
Rectal pain	19% (53)	21% (22)	19% (31)
Rectal bleeding	28% (77)	31% (33)	26% (44)
RAI	10% (27)	2% (2)	14% (24)
RAI in women <25 years			32% (8)
History of STI	9% (24*)	10% (11)	8% (13)
History of STI screen	27% (73)	26% (28)	27% (45)
History of HIV test	22% (62)	17% (18)	26% (44)

*75% chlamydia, 4% chlamydia/gonorrhoea, 4% gonorrhoea, 8% unspecified.

IBD, inflammatory bowel disease; RAI, receptive anal sex; STI, sexually transmitted infection.

women more likely to have experience of RAI compared with heterosexual men (RR 5.1; $p=0.03$).

Sexual health screening had been carried out in 27% of the cohort; the nature of the sexual health screening was not explored. A positive history of previous STIs was reported in 9%.

Risk factors for STIs in women reporting RAI

Women reporting experience of RAI were more likely to have had a previous STI, be aged under 25 years and have more than one partner in the last 6 months compared with women who did not disclose RAI (table 2).

Rectal symptoms in women reporting RAI

In order to compare the prevalence of reported RAI and prior STI in our cohort with NATSAL data, we confined the following analysis to those women aged 16–44 years (table 3).

Within this age group, a total of 80 patients reported rectal symptoms; 20 women had a history of RAI and 60 did not. Chronic rectal pain was more frequently reported in women reporting a history of RAI (6/20, 30%) compared with women who did not report RAI (11/60, 18%), RR 2.4 ($p\leq 0.03$). However, there was no difference in the prevalence of rectal discharge (4/20, 20% in women with RAI vs 9/60, 15% in those without RR 1.75; $p=0.72$) or rectal bleeding (4/20, 20% in women with RAI vs 19/60, 32% in those without, $p=0.3$).

Young women with a history of RAI were more likely to report a previous STI (8/20, 40%) versus those with no history of RAI (3/60, 5%); $p<0.0001$; RR 13.41).

Acceptability of discussion/testing

Fifty-three per cent of men and 56% of women were happy to discuss sexual practice in the gastroenterology clinic setting. Restricting analysis to people aged under 44 years, in line with NATSAL age ranges, this number increased to 74% of men and 73% of women. For those patients aged over 44 years, the figures were 49% for men and 49% for women. In the cohort reporting RAI, the acceptability to discuss sexual practice was 83% and for those with a previous STI it was 85%.

STI testing in the cohort as a whole was acceptable to 53% of men and 55% of women. Restricting the analysis to people aged under 44 years, the acceptability increased to 66% of men and 80% of women. In those aged over 44 years only, 40% of men and 44% of women answered favourably. In the cohort reporting RAI, the acceptability towards STI testing was 80% and for those with a previous STI it was 70%.

DISCUSSION

This is the first report of sexual behaviours in a cohort of patients attending a gastroenterology clinic and also the first report recorded in an outpatient clinic outwith GUM. Previous data regarding sexual behaviour have been collated from those attending GUM clinics or in national surveys such as NATSAL. Our results therefore give a unique insight into the sexual practices of this cohort of patients and have suggested that this cohort of patients could be at risk of having a STI proctocolitis that could mimic IBD and lead to incorrect treatment.

While Dundee City has traditionally seen the highest rates of teenage pregnancy, termination of pregnancy and chlamydia in Scotland,^{14 15} we were surprised to find that the prevalence of reported RAI

Table 2 Risk factors for STI in females attending an IBD clinic

	F RAI (n=24)	F no RAI (n=143)	RR (p value)	Males (n=107)	RR (p value)
Previous STI	38% (9)	3% (4)	13.4 (<0.0001)	10% (11)	3.6 (0.003)
<25 years	33% (8)	12% (17)	2.7 (0.01)	13% (14)	2.5 (0.03)
>1 partner 6 months	13% (3)	2% (3)	6 (0.04)	9% (10)	1.3 (0.7)

F RAI, Female with history of Receptive Anal Intercourse; IBD, inflammatory bowel disease; STI, sexually transmitted infection.

Table 3 Comparison of rectal symptoms and STI history, according to a history of RAI, in females aged 16–44 years

	F RAI (n=20)	F no RAI (n=60)	p Value
Rectal discharge	20% (4)	15% (9)	0.72
Rectal bleeding	20% (4)	32% (19)	0.3
Rectal pain	30% (6)	18% (11)	<0.03
Prior STI	40% (8)	5% (3)	<0.0001

F RAI, Female with history of Receptive Anal Intercourse; STI, sexually transmitted infection.

in women was significantly higher in this cohort than in the general population as reported by NATSAL (14% in total cohort, 25% in those aged 17–44 years vs 10.5% in NATSAL-3), particularly since this group of women have a diagnosis of an IBD. While a direct comparison with NATSAL is limited by the comparison of lifetime risk, in our study, versus previous year risk, in NATSAL, this effect is diminished in the younger age group (aged <25 years) where the reported level of RAI was 32%. This high prevalence of reported RAI may be due to high risk taking behaviour within the local population as there was a strong association between RAI and a history of STI. Alternatively, the high reported RAI prevalence may be due to channelling bias, where we have selected a group of women with an undiagnosed symptomatic rectal STI or dual pathology with a STI-induced exacerbation of known IBD. Furthermore, NATSAL records RAI activity in the preceding 12 months while we recorded any previous history of RAI. The association between RAI and rectal pain reported may be secondary to trauma in those with an existing rectal pathology or perhaps due to either neuromuscular or functional pain.

The study was limited by the exclusion of men from the analysis due to small numbers of MSM and the subsequent inability to conduct a multivariate analysis to adjust for confounding factors. Given that studies suggest around 7% of males are MSM, higher numbers would have been expected in our cohort; but given that many MSM with rectal symptoms may present to GUM clinics directly, due to higher patient awareness of STI risk, this was not unexpected. Replicating this study in a setting with higher levels of MSM would provide further information and would be an important next step. The questionnaire was

deliberately short given the time constraints and setting it was administered in; a detailed history of other anoreceptive activities such as rimming or sex toys was not included. This may have underestimated the risk of sexual infections in heterosexual men.

We found that our patients had a surprisingly high rate of RAI and previous STIs. The association between RAI and past history of STI reinforces the impression that we need to be actively considering STI proctitis in women who present to the gastroenterology clinic with rectal symptoms. There are no specific guidelines for the gastroenterology community regarding diagnosis and management of STI proctocolitis. There is European guidance for the management of STI proctocolitis, however, this is mainly aimed at sexual health clinicians and the MSM patient group.¹⁶ Postgraduate training in gastroenterology does not specify diagnosis and management of STI-related proctocolitis as a competency to be acquired; this is in contrast to the GUM curriculum. Furthermore, neither the current British Association for Sexual Health and HIV nor the Scottish Intercollegiate Guidelines Network chlamydia testing guidelines are explicitly clear about screening for rectal STIs in asymptomatic women, although recent emerging evidence suggests that the rectal site may be a reservoir for undiagnosed and suboptimally treated chlamydial infections.¹³

We know from experience in HIV testing¹⁷ that non-GUM clinicians may be less comfortable assessing sexual risk and discussing a patient's sexual behaviour. Our study has shown that while non-GUM clinicians may have reservations around taking a sexual history, our patient cohort have demonstrated a willingness to discuss sexual behaviour within the majority of the patient groups. This willingness is highest in those patients who undertake RAI, have had a previous STI and those aged under 44 years. The demographics that mirror those that our data suggest may be at highest risk of proctitis due to an STI. In addition, we have shown that a quarter of patients had already had prior sexual health screening and the majority of patients would be accepting of STI tests in the gastroenterology clinic setting. We also believe the acceptability of patients to disclose sexual history may be even greater than the levels we reported as anecdotal comments from patients who completed the survey suggested there was a degree of confusion regarding

what taking a sexual history included and when the background was explained there was universal support. Equally, the results may have been influenced by patients being unexpectedly questioned about sexual behaviour in a setting (a gastrointestinal clinic) that they would not traditionally associate with sexual behaviour history taking. We did not plan in this study to test for STIs but given the results and acceptability data we would suggest that this would be the next logical step.

In conclusion, we recommend that a past history of STI and RAI should be used to identify patients at risk of STI proctitis. We would propose rectal testing for chlamydia and gonorrhoea at the time of presentation in those with a history of STI, a history of RAI, all MSM and those women aged under 25 years. MSM should be recommended to have testing for syphilis and HIV. This proposal should be supported by robust pathways between gastroenterology and the GUM service to ensure appropriate treatment and follow-up, patient information and education and support for staff to improve their skills and knowledge in STI proctocolitis.

Significance of this study

What is already known on this topic?

- ▶ It is recognised that sexually transmitted infection (STI) is a cause of proctitis.
- ▶ Changing sexual attitudes and practice are recorded in the National Surveys of Sexual attitudes and Lifestyles studies.

What this study adds?

- ▶ This is the first report of sexual behaviours in an inflammatory bowel disease cohort.
- ▶ We have identified risk factors and symptoms that should suggest consideration of STI as a potential cause for proctitis.
- ▶ We have demonstrated that patients in a non-genitourinary medicine cohort are willing to discuss sexual practices.

How might it impact on clinical practice in the foreseeable future?

- ▶ Increase awareness of STI as a cause of proctitis.
- ▶ Highlight the absence of guidelines for testing of rectal STIs.

Contributors MG, CM, AMLM and SA planned the study and analysed the data. AMLM collected the data. EMR analysed the

data. All authors were involved in manuscript preparation and submission.

Competing interests None declared.

Ethics approval East of Scotland Research Ethics Service.

Provenance and peer review Not commissioned; externally peer reviewed.

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