

Prevalence of lower gastrointestinal symptoms and associated consultation behaviour in a British elderly population determined by face-to-face interview

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SUMMARY

Background. *The incidence of organic lower gastrointestinal disease increases with age. However, the prevalence of lower gastrointestinal symptoms in a British elderly population is unclear, with previous epidemiological studies focusing on younger populations. Furthermore, there is little information about consultation behaviour associated with lower gastrointestinal symptoms.*

Aim. *To determine the prevalence of lower gastrointestinal symptoms reported by randomly selected, elderly community subjects.*

Methods. *An age- and sex-stratified random sample of patients aged 65 years and over was drawn from a general practice register ($n = 842$). Those who had not refused to participate in an initial postal survey were invited to participate in a semi-structured physician interview at their own home to assess lower gastrointestinal symptomatology ($n = 745$). Non-participation bias and service use of all subjects were assessed from practice records.*

Results. *Five hundred and ninety-six (71%) patients were interviewed. Fifty-seven per cent of all participants had at least one lower gastrointestinal symptom. Individual symptoms and symptom complexes were common, affecting up to 32% of subjects. Only 24% of subjects with lower gastrointestinal symptoms consulted their general practitioner (GP) with such symptoms in the previous year. As few as 31% of subjects with new onset of the significant symptoms of rectal bleeding, abdominal pain, and a change in bowel habit consulted their GP.*

Conclusion. *Lower gastrointestinal symptoms are common in a British elderly population and an important reason for GP consultation.*

Keywords: *gastrointestinal disease; elderly; consultation.*

Introduction

THE incidence, prevalence, and mortality rates of organic lower gastrointestinal disease increase with age.¹ Gastrointestinal problems in the elderly form a significant proportion of hospital and general practice workload; one-quarter of referrals to a combined gastroenterology clinic in a district general hospital were over the age of 65 years.² Statistics from general practice suggest that 9% of consultations are for digestive tract symptoms. Consultation rates for gastrointestinal reasons increase with age, reaching 1800 per 10 000 person years at risk in those aged 85 years and over.³ Furthermore, consultation rates for gastrointestinal disorders increased from 720 per 10 000 in 1981/1982 to 866 in 1991/1992,³ a rise largely confined to adults and the elderly.

The prevalence of lower gastrointestinal symptoms in a British elderly population is uncertain. Twenty-three per cent of subjects aged 60 to 69 years may suffer from irritable bowel syndrome (IBS).⁴ Twenty per cent of those aged over 80 years had symptom complexes in keeping with IBS.⁵ Only one group has studied individual symptoms in those aged over 65 years, suggesting that over one-quarter of American subjects may report symptoms associated with IBS.⁶

There is little information about consultation behaviour with respect to lower gastrointestinal symptoms. It has been suggested that consultation rates increase with age⁵ but it is estimated that only one in five people with such symptoms had consulted a physician in the previous year.⁷

The prevalence of gastrointestinal symptoms in the general population, and the associated consultation behaviour, is important in contributing to our understanding of the significance of expressed and elicited symptoms and in assessing the service impact of such symptoms. Such knowledge also contributes to a better understanding of the clinical significance of lower gastrointestinal symptoms, particularly when many of these symptoms occur in patients presenting with serious lower gastrointestinal disease.⁸

We describe the prevalence of lower gastrointestinal symptoms reported by randomly selected, elderly community subjects in a semi-structured clinical interview and consultation behaviour assessed by examination of general practice records.

Method

As part of a validation study of a self-completion questionnaire for gastrointestinal symptoms, we interviewed a cohort of elderly community dwelling subjects. A random age- and sex-stratified sample ($n = 842$) based on the Newcastle and North Tyneside population was chosen from an urban, six-partner general practice register in Tyneside. There were 1350 registered patients aged over 65 years (16%). Questionnaires derived from the bowel symptom questionnaire⁹ were sent to all subjects. Subjects who returned the questionnaire, and non-responders that had not declined further participation in the study, were contacted, first

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by letter and then by telephone or 'door-to-door' requesting a home interview. Attempts were made to contact subjects on up to three separate occasions each week for two weeks by telephone or by calling at their homes. Those who agreed took part in a semi-structured interview conducted by a single interviewer (AC). The interview was structured to address the full range of pre-specified symptoms over the year preceding the interview. It began with a general enquiry about gastrointestinal symptoms, probing where appropriate, and ended with reference to a structured list of symptom questions equivalent to those in the self-completion questionnaire, with additional clinical probing to clarify responses. The symptom prevalence data presented in this paper is from the interview.

The general practice notes of all subjects (responders and non-responders) were examined for consultation behaviour, gastrointestinal illnesses, and other medical illnesses using a structured data collection form.

Definitions

Abdominal pain. Severity of abdominal pain was assessed using a four-point scale (very severe, severe, moderate, mild).

Functional bowel disorders. Functional gastrointestinal disorders are a combination of chronic or recurrent gastrointestinal symptoms not explained by structural or biochemical abnormalities.¹⁰ Those attributed to the mid- or lower gastrointestinal tract include IBS, functional constipation, and functional diarrhoea.¹¹ Consensus-derived criteria for these conditions, the 'Rome criteria',¹² are outlined in Box 1.

Statistical analysis. The data, entered onto a specifically designed database with built-in validation measures, was analysed using SPSS software. The quality of data entry was assessed by re-entry of 5% of subjects' responses. Overall age- and sex-adjusted one-year prevalence rates of symptoms and consultation, standardised by the direct method to the mid-1995 estimated resident population of the Newcastle and North Tyneside Health Authority, are reported. Ninety-five per cent confidence intervals (CIs) for the prevalence rates were calculated by the exact method¹³ from the number of responders for each symptom based on the binomial distribution. Non-participation bias was assessed by means of chi-squared and chi-squared for trend analysis. Where age was found to be a confounding factor, Mantel-Haenszel summary chi-squared analysis was used to adjust for age.

Ethical approval. The Joint Ethics Committee of the Newcastle and North Tyneside Health Authority granted ethical approval.

Results

Participation rates

Of the 842 subjects identified, 596 (71%) agreed to an interview (Table 1). There is a fall in participation rate with age group (χ^2 for trend = 18.2, df = 1, $P < 0.001$) but no difference with sex.

The general practice notes of 825 subjects (98%) were reviewed allowing further assessment of non-participation. Non-participants' overall consultation rates did not differ significantly

from participants' in the preceding year, except in the 85-years-and-over group where there was a significantly higher consultation rate in non-participants ($\chi^2 = 4.45$, df = 1, $P = 0.04$). However, general practitioner (GP) and hospital consultation rates for a lower gastrointestinal symptom in the preceding year or gastrointestinal-related hospital admissions did not differ between participants and non-participants as assessed by GP records. Furthermore, no significant difference was found between participants and non-participants with respect to previous and current gastrointestinal diagnoses, investigations, and surgery.

Symptom prevalence

The age- and sex-adjusted prevalence rates for lower gastrointestinal symptoms and symptom complexes are shown in Table 2. Overall, 76% (95% CI = 72% to 79%) of subjects reported at least one gastrointestinal symptom on a regular basis (i.e. occurring one-quarter of the time or more often) in the preceding year, while 57% (95% CI = 53% to 61%) reported at least one lower gastrointestinal symptom in the past year.

Twenty-five per cent of subjects reported abdominal pain over the preceding year but only 20% reported frequent abdominal pain (i.e. more than six episodes). This did not vary significantly with age or sex. Of those with frequent pain, 24% rated pain as severe or worse (i.e. affecting daily activities) and in 43% it occurred more often than weekly. Most of the abdominal pain was chronic, with only 16% having developed frequent pain as a new symptom in the previous year. Thirty-eight per cent had experienced symptoms for more than 10 years.

Eighty-four per cent considered their bowel habit to be normal. Furthermore, 96% reported their actual bowel frequency as falling within the usually defined limits of three or fewer motions per day to three or more per week. Bowel frequency did not differ according to age group. Fourteen per cent subjectively reported their usual bowel habit as constipation. This increased with age group, from 11% in the 65 to 74 years group to 21% in those aged 85 years and over (χ^2 for trend = 7.39, df = 1, $P = 0.007$). Twenty-four per cent fulfilled criteria for functional constipation (Box 1) but there was no significant age gradient. Twenty-five per cent had used laxatives in the last year, although only 16% reported using laxatives at least once a week.

Less than 1% described their usual bowel habit as diarrhoea but 10% fulfilled criteria for functional diarrhoea (Box 1). Six per cent admitted having soiled themselves in the preceding year but only 1% reported this as occurring more than monthly.

Eight per cent fulfilled the Rome criteria for IBS (Box 1). No significant differences were seen according to age group or sex.

Consultation behaviour

Thirty-eight per cent of all subjects (95% CI = 34% to 41%) had consulted their GP at some time with a lower gastrointestinal symptom, although only 15% had done so in the preceding year. Of those reporting lower gastrointestinal symptoms at interview,

Table 1. Number of participants and percentage response rate by age and sex.

	65-74 years	75-84 years	85 years and over	Total
Males	136 (75.6)	108 (74.5)	22 (59.5)	266 (73.5)
Females	147 (77.4)	115 (67.6)	68 (56.7)	330 (68.8)
Total	283 (76.5)	223 (70.8)	90 (57.3)	596 (70.8)

Table 2. Age- and sex-adjusted one-year symptom prevalence for over-65-year-olds with 95% confidence intervals.

Symptom	Prevalence (%)	95% CI
Abdominal pain in past year	25.2	21.8–28.9
Abdominal pain six or more times in the past year	19.5	16.5–22.6
Bowel habit		
Fewer than three motions per week	4.4	2.9–6.4
More than three motions per day	0.1	0.0–0.9
Self-reported normal bowel habit	83.7	81.0–87.0
Change in bowel habit in last year	8.5	6.3–11.0
Constipation		
Self-reported constipation	13.8	11.1–16.7
Often strain with motion	25.2	21.9–29.0
Stools often hard	21.6	18.4–25.1
Feeling of incomplete faecal evacuation	31.5	28.2–36.0
Functional constipation	24.4	21.0–27.9
Laxatives used in past year	24.6	21.6–28.6
Laxative use weekly or greater	15.9	13.5–19.7
Diarrhoea		
Self-reported diarrhoea	0.7	0.2–1.7
Stools often loose	10.1	7.8–12.8
Urgency of motion often	23.2	20.2–27.0
Functional diarrhoea	10.0	7.8–12.8
Irritable bowel syndrome		
Abdominal pain better with opening bowels	10.9	8.5–13.8
Bowels more frequent with abdominal pain	6.2	4.4–8.4
Looser motions with abdominal pain	7.2	5.3–9.7
Abdominal distension often	12.1	9.6–15.3
Per rectum mucus	3.9	2.5–5.7
IBS Rome criteria	8.3	6.1–10.7
Faecal incontinence		
Soiled self in past year	5.6	4.0–7.9
Soil self more than once a month	1.0	0.4–2.2
Rectal bleeding		
Ever	14.5	11.7–17.4
First noticed in past year	2.2	1.2–3.7

Irritable bowel syndrome

At least three months of continuous or recurrent symptoms.

A. Abdominal pain or discomfort which is:

- relieved by defaecation; and/or
- associated with a change in frequency of stool; and/or
- associated with a change in stool consistency.

B. Plus two or more of the following:

- altered bowel frequency of more than three bowel movements a day or less than three bowel movements a week;
- altered stool form (lumpy/hard/watery);
- altered passage of stool (straining, urgency or feeling of incomplete evacuation);
- passage of mucus; and
- bloating or feeling of abdominal distension.

Functional constipation

Two or more, for at least three months, of:

- straining at defaecation at least one-quarter of the time;
- lumpy and/or hard stools at least one-quarter of the time;
- sensation of incomplete evacuation at least one-quarter of the time; and
- two or fewer bowel movements in a week.

Functional diarrhoea

One of the following for at least three months:

- unformed stool more than three-quarters of time; and
- three or more stools per day more than half the time.

Box 1. Rome criteria for functional bowel disorders.

only 24% (95% CI = 19% to 28%) had been to see their GP with symptoms during the past year. The consultation rate was highest among those who fulfilled the Rome criteria for IBS (54%) and a change in bowel habit (51%). Analysis according to age group and sex revealed no significant differences in consultation behaviour.

Consultation rates increased with the severity (χ^2 for trend = 8.86, df = 1, $P = 0.003$) and frequency (χ^2 for trend = 9.57, df = 1, $P = 0.002$) of abdominal pain. Patients who reported newly developed abdominal pain in the last year were more likely to consult their GP than those with chronic pain (48% versus 27%, $\chi^2 = 4.06$, df = 1, $P = 0.05$). In comparison, subjects reporting new rectal bleeding in the last year were no more likely to consult than those with bleeding for over a year (31% versus 34%). Sixteen per cent had attended hospital with lower gastrointestinal symptoms but only 2% were within the last year, and while 11% had been admitted to hospital with lower gastrointestinal problems, again only 2% were in the last year. With respect to lower gastrointestinal tract investigations, 13% of all subjects had had a barium enema and 8% had received a colonoscopy.

Discussion

This study describes the prevalence of lower gastrointestinal symptoms and the consultation behaviour in an elderly British community population. The subjects were derived from a random sample of a single general practice, with an overall participation rate of 70%, taken from the interview stage of a questionnaire validation study. There is a potential selection bias, in that patients who suffer from gastrointestinal symptoms may be

more likely to participate in such a study. However, we have shown that despite a fall in participation rate in the older age groups, there was no difference in consultation behaviour for lower gastrointestinal symptoms between participants and non-participants. There was also no difference in the proportion of questionnaire responders and interview participants who consulted their GP for lower gastrointestinal symptoms in the past year (16%).

This study provides the first reliable estimate of lower gastrointestinal symptom prevalence in an older, community dwelling British population. It supports work reported from an American population that gastrointestinal symptoms are common in the elderly.⁶ Fifty-seven per cent of our sample reported at least one lower gastrointestinal symptom in the last year. The impact of many of these symptoms is difficult to gauge. However, 5% reported having frequent abdominal pain severe enough to affect their daily activities. The high proportion of subjects with lower gastrointestinal symptoms suggests that many are not due to organic diseases. Symptom complexes in keeping with functional bowel disorders appear common in the elderly, with 24% suffering functional constipation and 8% suffering IBS.

Lower gastrointestinal symptoms comprise a significant workload in general practice, with 15% of subjects consulting each year. However, this is only one-quarter of those with such symptoms and others have reported higher consultation rates for IBS (33% to 55%), including younger populations.^{4,5,18} Consultation has been reported to rise with age,⁵ with severity of pain being the most important predictor of consultation.^{18,19} Of concern, only 31% of patients suffering new rectal bleeding consulted. However, the numbers are small and the confidence intervals wide, and Crosland and Jones reported a consultation rate of 56% in those aged over 65 years suffering rectal bleeding in the previous year.²⁰

Interpretation of consultation behaviour requires caution. This is a cross-sectional study and therefore involves prevalent cases. Many subjects had their symptoms for some time and may therefore accept them as part of everyday life; for example, 38% of those with abdominal pain had experienced it for more than 10 years. However, despite the chronic nature of many symptoms, consultation rates remain high with implications for service delivery.

Change in bowel habit, abdominal pain, and rectal bleeding are the primary symptom for approximately three-quarters of patients presenting with colorectal carcinoma.⁸ However, consultation in those patients reporting these as a new symptom in the past year was relatively low: 52%, 49%, and 31% respectively. Thus, for the clinically significant symptom of a change in bowel habit, at least 4% of the sample experienced this, yet had not consulted their GP about it. Also of note is that only 2% of the total sample were seen in an outpatient clinic with lower gastrointestinal symptoms in the following year. Therefore, at least a further 2% consulted their GP with a change in bowel habit but were not referred for investigations. While the clinical circumstances surrounding each patient are not known, if this finding was replicated throughout Newcastle and North Tyneside, with approximately 80 000 patients aged over 65 years, then an additional 1600 outpatients referrals, and hence lower gastrointestinal investigations, may be required each year.

The pre-test probability of patients with this symptom or any combination of lower gastrointestinal symptoms having serious organic colonic disease is not known. Based on cancer registrations for England and Wales,²¹ the approximate incidence rate for colorectal carcinomas in those aged over 65 years in Newcastle and North Tyneside is 260/100 000 per year. It there-

fore seems likely that the predictive value of such symptoms, with the possible exception of rectal bleeding, will be low and referral has to be on clinical intuition.

Conclusion

Lower gastrointestinal symptoms and symptom complexes are common in older people in a British community, with most patients not presenting to their GP. Many of these symptoms might be explained by 'benign' functional bowel disorders. The clinician's dilemma remains the identification of those with serious underlying organic disease, such as colorectal carcinoma. Longitudinal studies of incident symptoms in elderly community populations are required to understand the natural history and prognosis of lower gastrointestinal symptoms and the consultation behaviour of individuals with such symptoms.

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