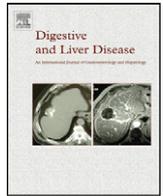




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Alimentary Tract

Irritable bowel syndrome in the elderly: An overlooked problem?

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ABSTRACT

Background: In secondary care, irritable bowel syndrome (IBS) is frequently associated with non-colonic symptoms including lethargy, backache and chest pains which can result in inappropriate referral to different specialities with the condition remaining unrecognised. This could also be a problem in the elderly where comorbidity is common, especially as irritable bowel syndrome is usually associated with a younger age group.

Methods: A survey of 230 consecutive patients (aged 65–94) attending an elderly care clinic examining referral patterns, irritable bowel syndrome symptoms, duration of disease, non-colonic symptomatology and previous investigation.

Results: 211 of 230 (92%) patients completed the questionnaire with 46 (22%) having symptoms suggestive of irritable bowel syndrome irrespective of presenting complaint. However despite the exclusion of abdominal pathology the diagnosis was only made in one patient. Symptoms significantly more common in irritable bowel syndrome than non-irritable bowel syndrome patients were constant lethargy ($p < 0.001$), headaches ($p = 0.01$), backache ($p = 0.02$), chest pain ($p = 0.03$), and urinary frequency ($p = 0.04$). Independent predictors of irritable bowel syndrome on logistic regression were bloating (OR 13.3; $p < 0.001$), stool urgency (OR 4.0; $p < 0.001$) and headache (OR 2.3; $p = 0.01$).

Conclusions: Irritable bowel syndrome is under-recognised in elderly care despite negative investigation. Making the diagnosis, even in the presence of co-existent disease, could reduce the overall burden of suffering, improve quality of life and prevent repetitive investigations.

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1. Introduction

It is well known that irritable bowel syndrome (IBS) patients commonly consult about their problem between the ages of 30 and 50, although in a large proportion of these individuals, symptoms have been present for many years [1]. However, there is very little information on whether the condition persists into old age, and no data on how it manifests itself in the elderly or its prevalence in elderly care clinics.

The estimated prevalence of IBS in a given population depends on the method of detection with the most well known questionnaires for diagnosing the condition being the Manning, Rome 1, Rome 2 and Rome 3 criteria [2–5]. There have only been very few studies assessing the prevalence of IBS in the elderly in the community and both of these suggest that the problem is just as common as it is in younger individuals [6,7]. However, there are no data on the prevalence of IBS in patients attending 'care of the elderly' clinics

where its presence might have a significant impact on how these patients are managed.

Many elderly patients suffer from multiple diseases, some of which can affect the gastrointestinal system. They are also likely to be taking a wide variety of medications which can also affect bowel function. As a consequence their physicians are much more likely to attribute any gastrointestinal symptoms to an organic or pharmacological cause and are much less likely to consider a functional disorder than they would in younger individuals. In addition investigation needs to be extensive which is in contrast to the approach in younger patients where it is currently recommended that it should be kept to a minimum. However, once other gastrointestinal pathology has been ruled out it is reasonable to consider the diagnosis of IBS.

IBS patients can suffer from a wide range of non-colonic symptoms [8], which in some instances can be more intrusive and troublesome than their intestinal complaints [9]. It is now being recognised that this can result in such individuals presenting to a variety of different specialities such as gynaecology, urology and even orthopaedics [10–12]. This is important because not only is the underlying cause often overlooked and the investigative burden added to, they can even undergo inappropriate surgical procedures. This issue could be particularly important in elderly care clinics

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where physicians are more likely to be generalists rather than specialists in a particular system.

It was the purpose of this study to assess, for the first time, the prevalence of IBS in patients presenting to geriatric clinics, relating this to presenting complaint, non-colonic symptomatology and final diagnosis.

2. Methods

2.1. Subjects

The South Manchester University Hospital Trust (SMUHT) serves a population of 239,000 caring for 60,000 patients each year, 52.5% of whom are female and 47.5% male. Over one-third of the population served by the hospital are aged over 65 years of which over 95% are Caucasian. Every year approximately 4000 patients above the age of 65 are seen in the outpatient clinics in the SMUHT.

Consecutive patients attending the 'care of the elderly' outpatient clinics at SMUHT were considered for the study. Each patient was given a questionnaire which incorporated questions relating to patient demography (age, sex, marital status, race, and previous occupation), symptom history relating to Rome 3 criteria including abdominal pain, bowel habit and non-colonic symptoms such as urinary symptoms, back pain, chest pain and constant lethargy all of which are more commonly seen with IBS. Details on the duration, severity and frequency of all symptoms were also obtained. Patients were asked about their previous medical history and medication, with additional information such as previous and current investigations extracted by review of medical records. The initial referral letter from the primary care practitioner was also reviewed to ascertain the reason for referral to the hospital. Approval for the study was sought and obtained from the local ethics committee and written informed consent was given by all patients.

2.2. Statistical analysis

An initial univariate analysis was performed. This examined whether there was any association between referral patterns, gastrointestinal symptoms, non-colonic symptoms and other associated conditions. A multivariate analysis was then performed by logistic regression to identify any significant independent predictive factors for IBS using any factors that showed significant association in the initial univariate analysis. The Statistical Package for the Social Sciences edition 11.5, SPSS Inc., Chicago, Illinois, was used for the analyses. Significance was set at the conventional 5% level.

3. Results

211 of 230 (91.7%) patients attending the outpatient clinic returned the completed questionnaire. The demographic details of patients with and without IBS have been listed in Table 1. Based on the questionnaire 46 of 211 (21.8%) patients satisfied the Rome 3 criteria for IBS, of whom there were 30 females and 16 male subjects. (65.2% female and 34.8% male) 14 of the 46 (30.4%) patients had IBS with constipation (IBS-C), 11 (23.9%) had diarrhoea (IBS-D) and 21 (45.7%) had a mixed pattern of bowel habit (IBS-M). 29 of the 46 (63.0%) IBS subjects had suffered with their symptoms for 5 years or more with the remaining 17 (37%) having had symptoms for less than 5 years. 10 of the 46 (21.7%) IBS patients had their bowel symptoms recorded in the referral letter compared with 20 of the 165 (12.1%) subjects who did not have IBS ($p = 0.11$). This was despite 26 of the 46 (56.5%) IBS patients having seen their GP because of bowel symptoms in the past, compared with 49 of the 165 (29.7%) controls ($p = 0.001$). Only one patient in the IBS group was given a final diagnosis of IBS and in the majority of the remainder no specific diagnosis was made (Table 6).

Table 1
Demographic data in patients with and without IBS.

	IBS (n = 46)	Non-IBS (n = 165)	p-Value
Age	79.8 (± 2.2)	78.5 (± 1.7)	0.40
Sex (F:M)	16:30	54:111	0.86
Comorbid conditions			
Cardiac	17	56	0.72
Respiratory	10	43	0.44
Locomotor	9	38	0.69
Cerebrovascular	5	23	0.81
Depression	5	11	0.35
Medications			
Overall per subject	6.3 (± 0.9)	5.6 (± 0.4)	0.14
Adversely affecting GI motility ^a	8/46	44/165	0.25
Prescribed for abdominal/bowel symptoms ^b	23/46	31/165	<0.001

Data expressed as mean ($\pm 95\%$ CI).

^a Includes anti-inflammatories, statins, codeine, antibiotics.

^b Includes laxatives, antispasmodics, antidepressants, loperamide.

Table 2
Reason for referral in patients with and without IBS.

Referral reason	IBS (n = 46)	Non-IBS (n = 165)	p-Value
Abdominal symptoms	8 (17.4%)	11 (6.7%)	0.04
Cardiovascular symptoms	7 (15.2%)	27 (16.4%)	0.85
Neurological symptoms	2 (4.3%)	22 (13.3%)	0.11
Locomotor symptoms	5 (10.8%)	17 (10.3%)	0.78
Respiratory symptoms	9 (19.6%)	36 (21.8%)	0.84
Others	12 (26.1%)	41 (24.8%)	0.85
Not known	3 (6.5%)	11 (6.7%)	0.86

Unsurprisingly IBS patients were more likely to have been referred with abdominal symptoms compared to non-IBS subjects. There was no significant difference in the prevalence of IBS in other referral categories (Table 2). Previous lower gastrointestinal investigations in the form of colonoscopy, sigmoidoscopy, barium enema or CT imaging of the colon had been carried out in 28 (60.9%) of the 46 IBS patients compared with 32 (19.4%) of the 165 subjects in the non-IBS group ($p < 0.001$). Twenty nine of the IBS patients had suffered from their symptoms for longer than 5 years with the majority (20/29) having been previously investigated. Where the duration of IBS symptoms was less than 5 years fewer gastrointestinal investigations had been performed (8/17). The prevalence of organic bowel disease was similar in both IBS groups.

Abdominal bloating and faecal urgency were more common in IBS patients but there were no significant differences between IBS and non-IBS sufferers with respect to other gastrointestinal symptoms such as weight loss, poor appetite and rectal bleeding (Table 3). The non-colonic features such as chest pain, backache, constant lethargy and urinary symptoms were much more prevalent in the group of elderly patients with IBS (Table 4). It is acknowledged that the chance of a statistically significant p -value is increased with the number of outcomes assessed. Thus significant p -values in this study should be interpreted as simply providing some evidence of a possible difference between the IBS group and the control group. A multivariate analysis was therefore undertaken

Table 3
A comparison of abdominal symptoms in patients with and without IBS.

Symptom	IBS (n = 46)	Non-IBS (n = 165)	p-Value
Abdominal pain	46 (100%)	45 (27.3%)	<0.001
Abdominal bloating	43 (93.5%)	84 (50.9%)	<0.001
Faecal urgency	33 (71.7%)	61 (37.0%)	<0.001
Rectal bleeding	9 (19.6%)	18 (12.7%)	0.24
Faecal incontinence	11 (23.9%)	29 (17.6%)	0.22
Weight loss	26 (56.5%)	82 (49.7%)	0.66
Poor appetite	18 (39.1%)	54 (32.7%)	0.55

Table 4
A comparison of non-colonic symptoms between patients with and without IBS.

Symptom	IBS (n = 56)	Non-IBS (n = 155)	p-Value
Constant lethargy	37 (80.4%)	81 (49.1%)	<0.001
Headaches	23 (50.0%)	52 (31.6%)	0.01
Backache	34 (73.9%)	91 (58.7%)	0.02
Chest pain	29 (63.0%)	75 (45.5%)	0.03
Urinary frequency	21 (45.6%)	52 (31.5%)	0.04
Nausea	21 (45.7%)	48 (29.3%)	0.10
Joint and muscle pain	27 (58.7%)	79 (47.9%)	0.12
Heartburn	25 (55.6%)	76 (46.1%)	0.17

Table 5
Significant independent predictors of IBS derived from multiple logistic regression.

	Odds ratio	95% confidence interval
Bloating	13.3 ($p < 0.001$)	4.0, 44.7
Stool urgency	4.0 ($p < 0.001$)	1.8, 8.6
Headache	2.3 ($p = 0.01$)	1.2, 4.6

Table 6
Prevalence of other gastrointestinal diseases/surgery in patients with and without IBS.

Disease/condition	IBS (n = 46)	Non-IBS (n = 165)	p-Value
Gastroenteritis	4 (8.7%)	0 (0%)	0.001
Diverticular disease	6 (13.0%)	6 (3.6%)	0.04
Ulcerative colitis	1 (2.2%)	0 (0%)	0.22
Bowel cancer	3 (6.5%)	4 (2.4%)	0.36

and this showed that bloating, stool urgency, and headache were significant independent predictors of IBS in this elderly population (Table 5).

Diverticular disease and previous gastroenteritis were seen to be significantly associated with IBS in the elderly. The length of time from previous gastroenteritis varied from 4 months to 24 months. In three of the four patients, the IBS symptoms were in existence before the episode of gastroenteritis. No other associations were forthcoming and in particular a previous history of bowel cancer was no more common in patients with symptoms suggestive of IBS (Table 6). All cases of bowel cancer in this study had been previously successfully treated and were not active problems.

The ingestion of drugs, such as analgesics and antidepressants, which may affect gastrointestinal function and possibly result in the production of IBS-like symptoms was no different in patients with and without IBS. However, the consumption of laxatives was significantly greater in the IBS patients (32.1% vs. 16.7% in non-IBS $p = 0.03$) although this was not related to the concomitant use of medications that could lead to constipation.

4. Discussion

This study clearly shows that nearly a quarter of attendees at 'care of the elderly' clinics have symptoms consistent with the diagnosis of IBS irrespective of the reason for referral. Despite this, even after negative investigation, the diagnosis was almost never made and this may be because physicians, other than gastroenterologists, are less likely to "refine" gastrointestinal symptoms into a diagnosis preferring to use the descriptors constipation, diarrhoea or abdominal pain instead. This is important because recognition of IBS, even if other disease is present, may offer an opportunity to reduce the overall suffering of a particular patient.

Bowel problems are common in old age and physicians caring for the elderly are faced with patients who have multiple symptoms and pathology. It may therefore be very difficult to confidently diagnose IBS in such circumstances. It is traditional amongst functional gastrointestinal specialists to recommend that IBS should be a positive diagnosis with the minimum of investigation [13].

Clearly this rule is not realistic in the elderly but the possibility of IBS should be seriously entertained once investigation of bowel symptoms has proved negative and features compatible with the diagnosis persist. In this cohort of IBS subjects, although the majority had undergone previous lower gastrointestinal investigations in the form of a colonoscopy, barium enema or sigmoidoscopy, it is possible that other organic pathology may have co-existed. However, this is unlikely as 63% of patients had suffered from their IBS type symptoms for over 5 years, suggesting that the length of history might be an extremely useful indicator of this diagnosis whereas symptoms of short duration should be taken much more seriously. It is traditional to regard symptoms such as weight loss, and poor appetite as 'red flag' symptoms that warrant further investigation in patients suspected of having IBS. It is therefore of interest that these features were no more prevalent in elderly patients with or without IBS. Rectal bleeding was not any more common in IBS but it is well known that rectal bleeding is very common in IBS in general [14] although it should always be investigated. It is reassuring that the prevalence of previous colon cancer was no higher in the IBS than the non-IBS group although the figures are far too small to draw any firm conclusions about a lack of predisposition to colon cancer in IBS. The higher prevalence of diverticular disease observed in the IBS patients in this study is probably a reflection of an increased rate of detection of this problem as a consequence of investigation for bowel symptoms in these individuals. Furthermore diverticular disease appears to be more common in patients with IBS and there is considerable controversy over whether, in its uncomplicated form, it actually causes symptoms at all [17].

It is commonly recommended that subjects with bowel dysfunction should increase their fibre intake, particularly in the form of cereals. Unfortunately this approach can considerably exacerbate the symptoms of IBS particularly in the secondary care setting [15,16] and is another reason why it is important to identify these individuals so that they can be appropriately advised, especially as elderly patients often increase their fibre intake in order to try and improve their bowel habit. It may also help to reduce the high prevalence of faecal urgency and incontinence which were so prevalent in these elderly IBS sufferers and can often be improved by restricting fibre. Furthermore, patients with IBS also tend to tolerate some medications such as non-steroidals, antibiotics and statins, less well [17]. These drugs are frequently used in the elderly and thus prior knowledge that a patient has IBS might allow an adverse reaction problem to be anticipated or circumvented.

The non-colonic symptoms of IBS are well described [18] and include features such as constant lethargy, backache, urinary symptoms, non-cardiac chest pain and fibromyalgia. They significantly add to the burden of this illness which has been shown to relentlessly erode quality of life [19], to the extent that those attending referral centres have worse quality of life than individuals with chronic renal disease or diabetes [20]. Although not life threatening, non-colonic symptoms can be extremely worrying for the patient as they often fear more serious pathology is being missed. If not recognised for what they are, they frequently lead to inappropriate investigation and referral [10–12] and on occasions, unnecessary surgical intervention and a poor outcome [12]. It has also been shown that these symptoms are of diagnostic value with the more that are present, the more likely the diagnosis is to be IBS [17]. This study has shown that elderly IBS patients are also frequently troubled by constant lethargy, backache, chest pain, headaches, and urinary symptoms. Rather than being indicative of serious pathology, especially in the presence of negative investigation, they may just be confirming that the patient does indeed have IBS. In this study the combination of abdominal and non-colonic symptomatology did indicate the presence of IBS, with bloating, stool urgency, headache and backache being independent predictors.

Abdominal bloating or distension is a common feature of IBS, which is often rated by the patient as their worst symptom [21,22] and on occasions can lead to an increase in abdominal girth of up to 12 cm over the course of the day [23]. It also has considerable diagnostic value because when present and exhibiting daily fluctuation, it strongly suggests a functional rather than an organic cause for the patient's symptoms. Our results suggest that bloating and distension were equally common in these elderly patients with symptoms of IBS and consequently distension could lead to more serious abdominal pathology being suspected. Therefore, more awareness of the fact that the distension could be functional in origin might prevent unnecessary repeated investigation of other potential causes, such as ascites.

A limitation of this study, which is common to all research on IBS, is that there is no diagnostic test for the condition. Thus it could be argued that the symptoms of IBS detected in this cohort of patients might be due to other factors especially the use of concomitant medications or it may be related to an ageing bowel in some way. However, examination of the consumption of drugs, especially those which could interfere with gastrointestinal function, revealed no differences between those with and without IBS and there was also no significant age difference between the two groups. In addition this study was subject to the recall biases associated with questionnaire surveys. Another potential problem is that not all patients had histological examination of the colon so the possibility that some patients might have had microscopic colitis cannot be excluded in those with diarrhoea. Microscopic colitis usually presents with watery diarrhoea which is unusual in diarrhoea predominant IBS where stools are usually semi-formed or loose rather than watery. Thus in the latter situation it would be advisable that biopsy is specifically requested as not all endoscopists will routinely take biopsies if the colon appears normal especially in the elderly.

It is well known that care of the elderly is placing an ever increasing pressure on health care resources and the burden of chronic lower gastrointestinal conditions such as constipation, diverticular disease and IBS is often greater than in the younger population. There has been relatively little research on the ageing gut although there is some evidence that the neural content of the myenteric plexus decreases with age. Furthermore studies in ageing animals suggest that neural injury may be a consequence of apoptosis, defective mitochondrial metabolism or an inadequate response to neurotrophins or their impaired production [24].

IBS is very costly to manage especially if it remains undiagnosed [25] and it should also be appreciated that there is nothing to stop IBS co-existing with other conditions where it can add to the patients' overall symptom burden. Thus if guidelines towards confidently identifying IBS in the elderly could be devised, it would not only have distinct economic advantages, but might enable us to substantially improve the quality of life of sufferers.

Conflicts of interest

None declared.

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Contributors: Dr. A. Agrawal helped with data collection, analysis and writing the initial draft of the paper. Dr. M.H. Khan helped with the data collection of the study.

Professor P.J. Whorwell conceived the idea of the study and helped with the planning, design and writing of the final draft of the paper. Professor Whorwell and Dr. Agrawal accept full responsibility for the work and/or the conduct of the study, had access to the data, and controlled the decision to publish. Dr. Khan has seen the final version of the paper and is happy with its' contents.

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