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Alimentary tract and pancreas

Non-colonic features of irritable bowel syndrome

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SUMMARY In 100 patients with irritable bowel syndrome a wide variety of non-gastrointestinal symptoms were significantly more common than in a group of 100 age, sex, and social class matched controls. Nocturia, frequency and urgency of micturition, incomplete bladder emptying, back pain, an unpleasant taste in the mouth, a constant feeling of tiredness and in women dyspareunia were particularly prominent ($p<0{\cdot}0001$). With reference to non-colonic gastrointestinal symptoms nausea, vomiting, dysphagia and early satiety were very common ($p<0{\cdot}0001$). This symptom diversity was observed irrespective of whether the patient had a psychiatric disorder or not. Patients smoked more than controls ($p=0{\cdot}02$) drank more caffeine containing drinks ($p=0{\cdot}03$) and 26% had taken at least one week off work in the previous 12 months. Thirty three per cent of patients had a family history of irritable bowel syndrome. Cognisance of these diverse symptoms may prevent referral to the wrong medical specialty and inappropriate investigation. They may also be indicative of a much more diffuse disorder of smooth muscle than has previously been appreciated.

Patients with irritable bowel syndrome often complain of a wide variety of symptoms[1–6] some of which, such as frequency of micturition, may not necessarily be of gut origin. In addition, non-colonic gastrointestinal symptoms such as heartburn and dyspepsia[2 4] are reported as being more frequent in irritable bowel syndrome. A number of these symptoms, however, are quite common in a 'normal' population and as their prevalence in an appropriately matched normal control group has not been assessed, their significance remains questionable.

Evidence suggesting small bowel[7] and oesophageal[8] involvement has led to the concept that irritable bowel syndrome is not a disorder confined to the colon. This could explain why some patients complain of dysphagia and dyspepsia which may, if the colonic complaints are less marked, lead to an erroneous diagnosis. Misdiagnosis can also result from the variable site of the colonic pain which is not necessarily confined to the abdomen.[9] Peptic ulceration, gall stones and appendicitis are sometimes implicated occasionally leading to inappropriate surgery.[9–11]

It was the purpose of this study to reassess these features of irritable bowel syndrome and to record some hitherto undescribed symptoms comparing their prevalence in irritable bowel syndrome and age, sex, and social class matched controls.

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Methods

PATIENTS

One hundred consecutive outpatients attending for review and fulfilling our criteria for irritable bowel syndrome were studied. The group contained 90 women and 10 men, age range 18–64 years. The numbers in each social class[12] were I:5, II:38, III:49, IV:7, V:1. All subjects had to have abdominal pain, abdominal distension, and an abnormal bowel habit in association with normal haematology, serum biochemistry, rectal histology, and colonoscopy or contrast radiology. Patients were classified according to whether they suffered predominantly from diarrhoea (group 1: 10 patients), constipation (group 2: 59 patients) or alternating constipation and diarrhoea (group 3: 31 patients). Patients with painless diarrhoea syndrome[9] were not included in the study. One hundred age, sex, and social class matched controls were randomly recruited from staff registers of local commerce and industry after completing a screening questionnaire to exclude subjects with irritable bowel syndrome. Eleven per cent of the group screened had symptoms of irritable bowel syndrome, which is similar to a previous

estimate of its prevalence in the general population.[13] An extensive questionnaire covering all the data listed inTables 1–7 was completed by each subject in private by the same interviewer. The relative prevalence of symptoms in the two groups were compared using a contingency table (χ^2) analysis. The alcohol consumption was analysed using an unpaired *t* test. The calculations were done using the statistical computing package SPSS. Fifty of the irritable bowel syndrome patients were interviewed separately by a psychiatrist using the clinical interview schedule (CIS)[14] in order to identify those with (scoring 14 or more on the CIS) and without psychiatric disorder. The symptom prevalence in those without psychiatric disorder was then compared with that of the appropriately matched control group. In addition a symptom score was derived by totalling all the symptoms outlined in Tables 1–5 and then comparing the scores for those with and without psychiatric problems.

Results

Tables 1–6 detail the results for patients and controls the numbers in brackets representing the analysis for those patients without psychiatric disorder and their matched controls. A positive symptom response was recorded if it was experienced at least once in two weeks. As can be seen a large proportion of the symptoms are significantly more common in patients than controls. None of these symptoms were found to be significantly more common in any one of the different types of irritable bowel syndrome (groups 1–3). On original referral the provisional diagnosis was peptic ulceration in 20 patients and gall stones in 18 subjects. Although the appendicectomy rate in the irritable bowel syndrome group was 19% this was not significantly different from the 14% rate observed in the control group. Similarly the cholecystectomy rate was not significantly different at 8% and 7% respectively. Table 7 details the remaining questions to which the response was not significantly different between patients and controls. Twenty six per cent of patients had taken at least one week off work in the year up to the time of the study as a result of their symptoms.

When the 38 patients without psychiatric disorder were compared with their matched controls the only major change from the original observations for the whole group of 100 patients was a reduction in psychological symptoms (Tables 1–5). The only other features that became non-significant were dysmenorrhoea, pruritis, smoking, consumption of caffeine containing drinks and gynaecological consultations. With regard to symptom scores the median values for those with and without psychiatric disorder were 16/24 and 12/24 respectively ($p=0{\cdot}05$).

Discussion

This study clearly shows that patients with irritable bowel syndrome experience a wide variety of symptoms which may not necessarily originate from the gastrointestinal tract. It also shows the importance of controlled studies on symptomatology, for instance, heartburn, which is often quoted as a common complaint in irritable bowel syndrome,[2 4] is found in nearly a third of patients but is observed so frequently in controls that it is not a significant finding. Similarly the appendicectomy rate which is reported as high in irritable bowel syndrome subjects, although raised, does not differ significantly from that in controls.

The pathophysiology of irritable bowel syndrome is poorly understood but there is evidence that there is an underlying disorder of gastrointestinal smooth muscle.[2 6 15] The high prevalence of urinary symptoms in these patients suggests that this abnormality may not be confined to the gastrointestinal tract and that 'irritable bladder' forms part of this syndrome. Such a diffuse disorder of smooth muscle may also explain some of the other diverse symptoms from which these patients suffer. An alternative explanation for this diverse symptomatology could be that patients with irritable bowel syndrome have psychiatric problems or tend to be chronic complainers. In order to try and clarify this and other questions on the psychological aspects of irritable

Table 1 *Gastrointestinal symptoms in patients and controls*

Symptoms	*Patients (%)*	*Controls (%)*	*Significance*	
Nausea/vomiting	29 (53)	2 (3)	$p<0{\cdot}0001$	($p<0{\cdot}0001$)
Dysphagia	19 (21)	0 (0)	$p<0{\cdot}0001$	($p=0{\cdot}0009$)
Heartburn	30 (19)	17 (21)	NS	(NS)
Excessive flatus	85 (84)	42 (52)	$p<0{\cdot}0001$	($p=0{\cdot}0006$)
Difficulty finishing meals	60 (47)	8 (8)	$p<0{\cdot}0001$	($p=0{\cdot}0003$)

Patients without psychiatric disorder in brackets.

Table 2 *Gynaecological symptoms in patients and controls*

Symptoms	*Patients (%)*	*Controls (%)*	*Significance*	
Dysmenorrhoea	63 (68)	42 (72)	p=0·02	(NS)
Dyspareunia	41 (42)	5 (0)	p<0·0001	(p<0·0001)
Premenstrual tension	63 (69)	55 (72)	NS	(NS)

Patients without psychiatric disorder in brackets.

Table 3 *Urinary symptoms in patients and controls*

Symptoms	*Patients (%)*	*Controls (%)*	*Significance*	
Frequency	52 (61)	12 (11)	p<0·0001	(p<0·0001)
Urgency	41 (60)	9 (8)	p<0·0001	(p<0·0001)
Nocturia	48 (53)	17 (18)	p<0·0001	(p=0·004)
Hesitancy	36 (32)	6 (5)	p<0·0001	(p=0·007)
Incomplete emptying of bladder	50 (50)	18 (16)	p<0·0001	(p=0·003)

Patients without psychiatric disorder in brackets.

Table 4 *Non-specific symptoms in patients and controls*

Symptoms	*Patients (%)*	*Controls (%)*	*Significance*	
Back pain	68 (61)	28 (11)	p<0·0001	(p<0·0001)
Headaches – more than 1/week	34 (31)	3 (7)	p<0·0001	(p=0·006)
Pruritis	34 (32)	12 (13)	p=0·0004	(NS)
Bad breath/unpleasant taste in mouth	65 (58)	16 (10)	p<0·0001	(p<0·0001)
Poor sleeping	28 (30)	5 (0)	p<0·0001	(p=0·001)
Constant tiredness	70 (63)	20 (13)	p<0·0001	(p<0·0001)

Patients without psychiatric disorder in brackets.

Table 5 *Psychological factors in patients and controls*

Symptoms	*Patients (%)*	*Controls (%)*	*Significance*	
Nervousness/panic attacks	69 (31)	37 (34)	p<0·0001	(NS)
Palpitations	51 (44)	17 (19)	p<0·0001	(p=0·02)
Tremor of hands	37 (28)	12 (15)	p<0·0001	(NS)
Nail biting	28 (18)	20 (13)	NS	(NS)
Fear of serious disease	37 (34)	18 (13)	p=0·004	(p=0·05)

Patients without psychiatric disorder in brackers.

Table 6 *Dietary, smoking and general health aspects*

Features	*Patients (%)*	*Controls (%)*	*Significance*	
Smoking	49 (40)	33 (34)	p=0·02	(NS)
Alcohol – mean units/wk*	5·53±22·02	5·15±7·00	NS†	
Caffeine containing drinks cups/day	42 (50)	26 (34)	p=0·03	(NS)
Weight consciousness	66 (63)	60 (58)	NS	(NS)
Previous use of diet	46 (36)	46 (50)	NS	(NS)
Regular exercise	47 (47)	52 (50)	NS	(NS)
Food intolerance	21 (21)	10 (11)	NS	(NS)
Gynaecological consultation	33 (24)	18 (15)	p=0·02	(NS)
Atopy	21 (20)	25 (22)	NS	(NS)
Family history of IBS	33 (26)	2 (5)	p<0·0001	(p=0·02)

* Reference 20. † *t* test. Patients without psychiatric disorder in brackets.

Table 7 *Non-significant differences between patients and controls not specified in Tables 1–6*

Tendency to:	Stitches on exercise
	Sore mouth
	Mouth ulceration
	Sore throats/colds
	To be accident prone
	Recurrent attacks of gastroenteritis
Whether breast or bottle fed as an infant	
Family history of neoplasia of bowel	
Reading of medical literature	
Previous tonsillectomy	
Marital status	
Number of siblings/order in family	

bowel syndrome[16–19] 50 of the irritable bowel syndrome patients in this study have been the subject of an in depth assessment of motility, psychiatric status, and response to therapy which will be reported in detail elsewhere. The data from this study show that patients with irritable bowel syndrome who have no evidence of psychiatric disorder still complain of a wide variety of different symptoms. This would suggest that psychological factors may not solely account for this observation. Although the higher symptom scores in the psychiatric group indicate a tendency to complain more this does not resolve the question of whether irritable bowel syndrome patients without psychiatric disorder are chronic complainers. It is of some interest, however, that this group of patients complain of no more dysmenorrhoea and premenstrual tension than do controls (Table 2). Whatever the reason for this diverse symptomatology, knowledge of its association with irritable bowel syndrome is critical with regard to management and the prevention of referral to the wrong specialty or inappropriate investigation. It is noteworthy that many of our patients had been previously investigated for back or genitourinary problems with negative results. Of the symptoms listed in the Tables, dysphagia, nausea, early satiety, back pain, an unpleasant taste in the mouth, a constant feeling of tiredness, frequency and urgency of micturition, and in women dyspareunia seem to be most strongly associated with irritable bowel syndrome. Before any diagnostic value can be attributed to these symptoms, however, their prevalence in patients with other types of gastrointestinal disease would have to be assessed in order to evaluate their discriminant value. This study is now in progress.

Lastly the familial incidence of 33% suggests some form of predisposition. It may be that clinical and physiological investigation of both affected and unaffected relatives would shed some light on the pathophysiological mechanisms involved.

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