

A MORE POSITIVE DIAGNOSIS OF IRRITABLE BOWEL SYNDROME IN SAUDI PATIENTS

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The irritable bowel syndrome (IBS) is a common gastrointestinal condition comprising 50%-70% of the gastroenterology clinic load in the West.¹ The prevalence of the condition in Saudi Arabia is unknown, but our impression is that it is equally common. Most physicians make the diagnosis through a negative battery of tests, most of which are costly, time consuming and inconvenient.² A few studies have addressed this problem with some success.³⁻⁵ The authors hoped to develop similar clinical indicators for the positive diagnosis of IBS in a Saudi population.

Materials and Methods

This was a prospective study conducted in the Screening Clinic of King Faisal Specialist Hospital and Research Centre (a tertiary care hospital in Riyadh, Saudi Arabia) for a period of one year. All new self-referral adult patients with a major complaint of abdominal pain persisting for at least three months were enlisted. Patients who had a previous gastrointestinal tract (GIT) diagnosis or any other major disease were excluded. Patients who fulfilled these criteria and gave informed consent were subjected to the study protocol. At initial consultation, the physician completed a two-page form consisting of: 1) demographic information; 2) detailed symptoms related to pain, bowel habits, abdominal distention and miscellaneous symptoms; and 3) clinical examination. The relevant investigations were then ordered. Before investigation results were available, a clinical diagnosis was made on the basis of the patient's response to the questionnaire and the physician's physical examination (clinical diagnosis).⁴

All patients had full standard work-up for abdominal pain, using the endoscopic and radiological investigations of the GIT until a definite diagnosis was made or organic cause was excluded. Stools were examined for ova and parasites on at least three occasions. A diet history was taken by a dietitian.

Results

A total of 56 patients were assessed. Four were found to be ineligible, and there were five patients with incomplete data. The remaining 47 patients (84%) were analyzed. The scope of investigations is as shown in Table 1. By clinical diagnosis, 29 patients were diagnosed as IBS cases, of which only 23 were confirmed, and 15 were diagnosed as non-IBS cases, of which only nine were confirmed (see statistical analysis below).

Fifteen patients (32%) had definitive diagnosis of a non-IBS condition, and 29 (62%) had definitive diagnosis of IBS (by virtue of exclusion of organic cause for their abdominal pain). Three patients had both non-IBS condition and IBS.⁴ The last three were omitted from most of the subsequent analysis. The demographic information of the 44 patients is given in Table 2.

With regards to the site of pain, the abdomen was divided into nine regions.⁶ The most common site of pain was the epigastrium (81%), followed by the periumbilicus (34%). No patient complained of pain in the right iliac fossa. The major distribution of symptoms in IBS and non-IBS patients is shown in Table 3.

Statistical Analysis

Cohen's Kappa to evaluate the relationship between clinical and definitive diagnosis yielded a value of 0.39 (95% confidence interval, 0.09 to 0.69). Thus clinical and definitive diagnosis were very much associated.

After a large analysis which cross-classified all categorical variables (e.g., age, sex and pain sites, etc.) with diagnosis of IBS, seven variables were found to be significantly related ($P < 0.05$) to IBS: 1) age under 35; 2) lack of education; 3) absence of pain relief by food; 4) presence of pain at periumbilicus; 5) presence of pain at epigastrium; 6) normal body mass index (BMI); and 7) absence of significant past medical history. When stepwise regression analysis was carried out, only four variables remained significant for prediction of diagnosis of IBS. These were: 1) age (1=age under 35, 0=age 35 and above); 2) education (0=no education, 1=elementary and above); 3) APF (absence of pain relief by food, 1=yes, 0=no); and 4) PPP (presence of pain at periumbilicus, 0=no, 1=yes).

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TABLE 1. *Investigative results of patients tested for IBS (abnormal/total).*

Investigations	Result
ALT	4/47
AST	2/47
Direct bilirubin	2/47
Albumin	1/47
Hemoglobin	4/47
WBC	6/47
Eosinophils	3/32
ESR	15/42
Urine	5/41
Stool (fecal occult blood, ova/parasites on three occasions)	5/47
Gastroduodenoscopy	7/47
Colonoscopy	0/38
Ultrasound	7/47
Cholecystogram	1/4

TABLE 2. *Demographic information.*

	Age (mean)	Sex (M:F)	Domicile (R:U)	Education elem+	BMI normal
IBS	33.17	9:20	14:15	12/29	12/29
Non-IBS	40.30	3:12	4:11	11/15	0/15

R=rural; U=urban; elem+=elementary or higher; BMI=body mass index.

TABLE 3. *Major symptoms of IBS and non-IBS patients.*

	IBS (%)	Non-IBS (%)
Pain		
Severe	25 (87)	9 (60)
Food relief	6 (21)	9 (60)
Defecation relief	7 (24)	2 (13)
Aggravated by food	23 (79)	14 (93)
Constipation	17 (59)	6 (40)
Constipation and diarrhea	8 (28)	5 (33)
Diarrhea	1 (3)	0
Bowel gas (abdominal distention) - all grades	27 (93)	12 (80)
Bowel gas (abdominal distention) - severe grades	16 (55)	4 (27)
Weight loss	12 (41)	4 (27)
Nausea	22 (76)	3 (20)
Vomiting	8 (28)	5 (33)
Family history of similar disease	6 (21)	4 (27)
Significant past medical history	7 (24)	9 (60)

This discriminated between IBS and non-IBS with a sensitivity of 90% and specificity of 73%. The estimates were multiplied by 10 and the following equation computed scores for given variables:

$$\text{Score} = 40.04 + 44.04 \times \text{PPP} - 23.99 \times \text{APF} - 27.82 \times \text{edu} - 29.93 \times \text{age} \text{ (EQ 1)}.$$

A score greater than 50 means IBS.

Discussion

It is important to have a rapid and safe diagnosis of IBS and avoid a battery of expensive, wasteful and inconvenient investigations. Manning et al.³ are credited with the first attempt in 1978, and Talley⁵ has confirmed the validity of Manning's criteria. Kruis et al.⁴ reported on a score based on a symptom questionnaire and eight basic investigations. Although a good separation between IBS and non-IBS was made with their score, they were criticized for arbitrary weighing for blood in stools and reproducing the definition of IBS in their questionnaire, which resulted in bias towards this diagnosis.⁷

In our study, we took pains to delineate the different sites of pain, utilizing the under-recognized work of Swarbrick et al.⁶ We were rewarded with the findings of two areas in which presence of pain was significantly related to IBS: 1) periumbilicus; and 2) epigastrium. The first remained significant after stepwise logistic regression. Our detailed pain analysis agreed predominantly (8 features out of 11) with the validated questionnaire of Talley et al.⁸ We believe our adoption of Swarbrick's division of abdomen into nine areas gave us a more refined tool to locate pain sites, since "upper abdomen" includes diverse areas of the right and left hypochondria, as well as the epigastrium.

We confirmed the earlier findings that IBS was related to a younger age but we could not confirm its relationship with the female sex.⁸

In our study we found that patients who had no formal education were more likely to suffer from IBS. We are not aware of any previous report indicating an association of education level with IBS, but our results reflect an association between the disease and a low level of education. Nevertheless, we will temper the validity of our results with the known fact that establishing the level of education, especially among women in our population, is not easy.

Absence of significant past medical history was an indicator of IBS. This is comforting because one would be loath to diagnose IBS in patients with other serious diseases.

Our study had certain shortcomings. We found we have not made a single diagnosis of non-ulcer dyspepsia. This may mean that our IBS diagnoses are a mixture of true IBS and non-ulcer dyspepsia, i.e., functional abdominal pain. Nevertheless, this would not detract from our results, because once a physician has made a reasonable exclusion of organic disease, he will gear his management towards relief of the predominant symptom complex. Another shortcoming is the small number of patients, however, we note that Manning et al.³ had studied only 32 IBS patients (we had 29).

We believe this study has confirmed the earlier

reports^{3,4,8} that a relevant questionnaire can be used to give a reasonable chance of diagnosing IBS without resorting to expensive and intrusive investigations.

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