VARIOUS RISK FACTORS FOR IRRITABLE BOWEL SYNDROME

Mazhar Mehtab Alam, Muhammad Altaf Hussain, Ahmed Muqeem

Combined Military Hospital Okara

ABSTRACT

Objectives: To assess the frequency of various known risk factors in patients with irritable bowel syndrome (IBS).

Study Design: Descriptive study

Place and Duration of Study: Combined Military Hospital Okara on 60 patients (convenience sampling over a period of 01 year) who had been diagnosed with irritable bowel syndrome (IBS) and paid regular follow-up visits to the medical OPD.

Patients and Methods: Each patient in the study was investigated for the presence of various risk factors of IBS i.e. their age, sex, weight, socioeconomics, state of education, any coexistent ailment (DM, HTN etc) and any history of enteritis and food intolerance. The frequency of each risk factor in this sample of patients was then analyzed.

Results: Two third of the patients were within the age bracket of 20-30 years showing a male predominance. Body mass index and educational status had no effect on the frequency of the disease. Neither could any co-existing ailment or food intolerance be linked with the disease. Relatively high socioeconomic status and a history of enteritis prior to developing IBS did show a positive co-relation with IBS.

Conclusion: IBS is more common in young adult males. The disease shows a positive co-relation with a history of prior acute enteritis. It has a slight predilection for high socioeconomic status but its frequency is not related to food intolerance, any co-existing disease or BMI.

Key words: Enteritis, Irritable bowel syndrome, risk factors.

INTRODUCTION

Irritable bowel syndrome (IBS) also known as "spastic colon," "nervous colon," and "unstable colon" is a gastrointestinal syndrome characterized by persistent or recurrent symptoms of abdominal pain and altered bowel habits in the absence of any organic cause. It is the most commonly diagnosed gastrointestinal condition. IBS is a worldwide disorder with similar prevalence rates reported in a variety of industrialized and non-industrialized countries[1]. Approximately 10 to 20 percent of the general adult population report symptoms consistent with IBS[2,3]. It accounts for a significant number of visits to primary care physicians and comprises 25 to 50 percent of all referrals to gastroenterologists[4]. The IBS is the second highest cause of work absenteeism after the common cold[5] and consumes significant health care resources.

As patients can present with a wide array of symptoms which include both gastrointestinal and extra-intestinal complaints, its diagnosis is often missed or delayed leading to patient's inconvenience.

The IBS is often considered a functional disorder because no structural, biochemical or infectious etiology has yet been found[4].

Purpose of Study

The objective was to assess the frequency of various known risk factors for IBS (namely age, gender, weight, socioeconomic status and education of the patient, any co-existing ailment and any history of enteritis or food intolerance) in a patient sample.

Recognizing the risk factors with a strong co-relation with IBS and identifying them in patients coming to the doctor with GI complaints would ultimately greatly assist in the diagnosis of IBS, sparing time and money which so very often goes into excluding organic disease in these patients.

PATIENTS AND METHOD

This was a descriptive study carried out in Combined Military Hospital Okara on 60

Correspondence: Maj Mazhar Mehtab Alam, Medical Specialist, CMH Okara Cantt.
Email: mazhar26@hotmail.com

known patients of IBS who visited the medical OPD for follow-up of their ailment over a period of one year from February 2009 to January 2010 (convenience sampling). Each patient was studied and investigated for the presence of various risk factors of IBS i.e. their age, gender, weight (measured in BMI), socioeconomics (based on their ranks as all individuals were related to the army), state of education, any coexistent ailment and any history of enteritis and food intolerance (based on patients' recall).

Data collected was analyzed using SPSS version 11 and the frequency of each risk factor in the sample was assessed.

Inclusion Criteria

Patients diagnosed with IBS by a gastroenterologist and reporting to CMH Okara for follow-ups were included in the study after reconfirming their complaints, history and investigations. Naïve cases were also detected using the Rome III diagnostic criteria supported by necessary investigations.

Rome III criteria requires the individual to be suffering from recurrent abdominal discomfort at least 3 days per month in the last 3 months associated with two or more of the following: 1) Improvement of symptoms with defecation, 2) Change in stool frequency, 3) Altered stool appearance.

Exclusion Criteria

Patients with visible or occult blood in stools, weight loss, fever, nocturnal symptoms of pain or diarrhea, ongoing psychiatric ailment, on medicine with known GI side effects and with a family history of colon cancer were excluded from the study. Patients whose symptoms started after age 50 were also not included.

Investigations Done on the Patients:

Complete blood picture, erythrocyte sedimentation rate and stool examination for occult blood, leukocytes and parasites was done in all the patients. In patients with diarrhea as the predominant symptom, thyroid function studies were also done. Colonoscopy was reserved for patients over the age of 40 to exclude a neoplasm and in younger patients

with persistent diarrhea to exclude inflammatory bowel disease. In the study sample, 6 patients underwent colonoscopy. Two of these were referred to CMH Lahore while the other 4 had already been worked up in a tertiary care hospital before presenting to this setup.

RESULTS

Sixty patients of IBS were selected at the medical OPD in CMH Okara over a period of one year (convenience sampling). Data regarding risk factors to be studied was recorded from each patient by a self-administered questionnaire especially designed for the purpose.

Age distribution in the sample showed that the disease was more frequent in young adulthood. 50% of the patients were between 24 to 30 years of age, the average age of the sample being 29.6years.

There was an obvious male predominance in the sample with only 27% females.

The weight of the individuals was interpreted as body mass index (BMI). Majority of the individuals were having a normal BMI i.e. between 18.5 and 24.9 with an overall mean of 21.9 (Table-1)

The level of education in the patients was assessed by dividing them into three groups based on Matriculation (Figure 1). Only 03 of patients had achieved a qualification beyond a bachelor's degree.

As the study was carried out in a military setup, socioeconomic status was correlated with the rank of the patient or his/ her care-taker. Out of the sample, 3 (5%) belonged to officers' group and 15 (25%) were from JCO's (junior commissioned officers) families. The remaining 42 (70%) were in the ORs (other ranks) category

Six individuals (10%) in this study were having a co-existing ailment which was hypertension (n=4) and diabetes mellitus (n=2). They were being adequately controlled on medication. Apart from these 06, no other individual had any ongoing ailment or any significant past medical history. Neither were any of the patients taking any sort of medication regularly other than that for IBS.

Out of the 60 patients, 05 (8%) gave a history suggestive of lactose intolerance and 01 said that he develops pain and loose motions on ingesting dry fruit as peanuts, walnuts etc.

Eighteen patients recalled developing acute diarrheal symptoms shortly before they started experiencing the persistent symptoms suggestive of IBS. Another 10 of the IBS patients said that they already had mild GI symptoms which exaggerated after an acute attack of enteritis and hence forced them to seek doctor's advice (Figure 2).

Table-1 Body Mass Index (BMI) of the patients (n=60)

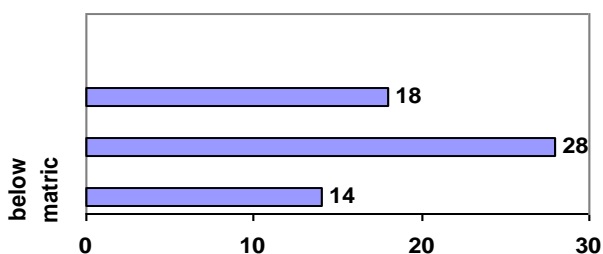| BMI	Interpretation	No of patients	Percentage
<18.5	Underweight	02	03%
18.5 – 24.9	Normal	52	87%
25.0 – 29.9	Overweight	06	10%
30.0 – 39.9	Obese	0	0%

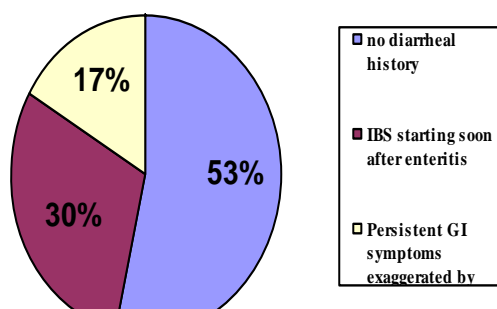**Figure 1: State of Education in the patients (n=60)**

Figure 2 History of Acute Enteritis prior to developing symptoms of IBS

DISCUSSION

Findings of the study regarding frequency of each risk factor were compared with other international studies and the implications and limitations of these findings highlighted.

The age distribution in the study was such that 39 patients (65%) were between 20 to 30 years of age hence showing a clear relationship between young age and IBS. Epidemiological studies in various communities throughout the world have analyzed the age distribution of the disease in different populations. Only a few show IBS to be more prevalent in adolescents[6]. Most studies on various populations as Asians[7] and North Americans[8] have shown that the prevalence of IBS varies minimally with age.

Of the 60 patients who were conveniently sampled, 44 (73%) were males and only 16 (27%) females. Many international research works in this regard have shown that females are more prone to IBS with a sex ratio of approximately 2:1[9]. This discrepancy between this study and other international studies may be explained by the fact that in our society, females (especially of low socioeconomic group) tend to come less frequently to doctors and many a time resort to alternative medicine (hakeems etc) for chronic GI symptoms.

The average BMI of the sample was 21.9. This is almost equal to the average BMI studied for Pakistanis[10,11]. Hence the study did not show any mentionable relationship between the disease and weight/BMI.

The impact of socioeconomic status on frequency of IBS could be easily assessed in the sample as all the individuals were related directly or indirectly to the army and their rank and subsequent pay scale was a good indicator of their socioeconomic status. Keeping in mind the approximate ratio or officers, JCOs and ORs in the army, the sample indicated a positive relationship between the disease and a relatively higher socioeconomic status. International studies in this regard have not been able to clearly relate socioeconomic status with IBS. A few studies have shown that childhood affluence does predispose to IBS[12]. A study on Australian adults found low socioeconomic status to be a definitive risk factor for upper and lower gastrointestinal symptoms[13].

Majority of the patients in the sample had a low educational status. Research work elsewhere on the risk factors of IBS has failed to make a relationship between the educational status and prevalence of IBS. The co-relation

between less education and IBS that has come up in this study may be explained on the fact that literacy rate is overall low in Pakistan.

Apart from a few studies showing asthmatics to be having slightly increased risk of IBS as compared to the general population[14], no other research work, including this one has shown a relationship between a particular organic disease and IBS.

IBS has been associated with use of analgesics[15] and hence a false predilection of IBS with diseases requiring extensive or prolonged use of analgesics may be seen in practice.

Research carried out internationally to assess the relation of food and IBS has not been convincing. Lactose intolerance and IBS have been found to be unrelated in various studies[16]. Same is the case for this study which did not link any specific food intake and IBS. Some studies have found a relation between food and symptoms in patients with IBS, stating that effective dietary manipulation may be a key factor in reducing symptoms of IBS[17].

Many studies have been done in trying to establish the post infectious etiology of IBS. Some have shown that bacillary[18] and salmonella dysentery increase the risk of developing IBS. The role of blastocystis hominis infection has also been studied in the etiology of IBS in Pakistan[19]. Various studies have found that up to 25% of IBS patients give history of infectious enteritis just prior to onset of symptoms[20].

This study has also demonstrated enteritis to be a strong risk factor for developing IBS because history of enteritis was present in 47% of the sample. The findings in this regard may have been slightly biased as the patients had to recall any episode of acute diarrheal illness before the onset of symptoms of IBS.

CONCLUSION

Irritable Bowel Syndrome is commoner in young adult males and shows a positive co-relation with a history of prior acute enteritis. The disease has a slight predilection for higher socioeconomic status but its frequency is not

related to food intolerance, educational status, any co-existing disease or BMI.

The observation made in the study that 30% of the patients gave a definitive history of acute enteritis preceding irritable bowel symptoms demands further research into the link between IBS and enteritis. This may ultimately give an insight into the pathogenesis of this very common disease and influence its management.

REFERENCES

1. Eugene Braunwald, Kurt J, Jean D, Joseph B, Dennis L, Dan L, et al. Harrison's principles of internal medicine – 17th edition.

2. Talley, Zinsmeister, Van Dyke. Epidemiology of colonic symptoms and the irritable bowel syndrome. Gastroenterology 1991; 101:927.

3. Jones, R, Lydeard, S. Irritable bowel syndrome in the general population. BMJ 1992; 304:87.

4. Everhart, Renault. Irritable bowel syndrome in office based practice in the United States. Gastroenterology 1991; 100:998.

5. Schuster, MM. Diagnostic evaluation of the irritable bowel syndrome. Gastroenterol Clin North Am 1991; 20:269.

6. Reshetnikov OV, Kurilovich SA, Denisova DV, Zav'ialova LG, Svetlova IO, Tereshonok IN,et al. Prevalence and risk factors of the development of irritable bowel syndrome in adolescents: a population study.Ter Arkh. 2001; 73: 24-9.

7. Gwee KA, Wee S, Wong ML, Png DJ. The prevalence, symptom characteristics, and impact of irritable bowel syndrome in an asian urban community. Am J Gastroenterol. 2004; 99:924-31

8. Saito YA, Schoenfeld P, Locke GR 3rd. The epidemiology of irritable bowel syndrome in North America: a systematic review. Am J Gastroenterol. 2002; 97:1910-5

9. Muller SA, Bollani S, Brummer RJ, Coremans G, Dapoigny M, Marshall JK, et al. Epidemiological aspects of irritable bowel syndrome in Europe and North America. Digestion. 2001;64:200-4

10. Akhtar P, Aslam M, Orfi SD. Evaluation of BMI for a reference Pakistani man and woman.Heath Phys.2001; 80:274-7

11. Nanan DJ. The obesity pandemic-implications for Pakistan. JPak Med Assoc.2002Aug;52:342-6

12. Howell S, Talley NJ, Quine S, Poulton R.The irritable bowel syndrome has origins in the childhood socioeconomic environment. Am J Gastroenterol. 2004; 99(8):1572-8.

13. Bytzer P, Howell S, Leemon M, Young LJ, Jones MP, Talley NJ. Low socioeconomic class is a risk factor for upper and lower gastrointestinal symptoms: a population based study in 15 000 Australian adults. Gut. 2001; 49:66-72

14. Northcutt, AR, Kong, S. Risk of IBS among asthma patients. Slightly increased risk as compared to general of population. Pharmacoepidemiol Drug Saf.2002: 11:31-5.

15. Locke GR 3rd, Zinsmeister AR, Talley NJ, Fett SL, Melton LJ. Risk factors for irritable bowel syndrome: role of analgesics and food sensitivities. : Am J Gastroenterol. 2000; 95:157-65

16. Fumagalli, Muller-Lissner, SA,I, Bardhan, KD, et al. Lactose malabsorption in a population with IBS,prevalence and symptoms,a case control study. Scand J Gastroenteral.2004; 39:645-9

17. Zar S, Kumar D, Kumar D. Role of food hypersensitivity in IBS.Minerva Med.2002; 93:403-12

18. Wang LH, Fang XC, Pan GZ.Bacillary dysentery as a causative factor of irritable bowel syndrome and its pathogenesis. Gut. 2004; 53:1096-101.

19. Yakoob J, Jafri W, Jafri N, Khan R, Islam M, Beg MA, Zaman V. Irritable bowel syndrome: in search of an etiology: role of Blastocystis hominis. Am J Trop Med Hyg. 2004; 70:383-5.

20. Parry SD, Stansfield R, Jelley D, Gregory W, Phillips E, BartonJR,etal. Is irritable bowel syndrome more common in patients presenting with bacterial gastroenteritis? A community-based, case-control study. Am J Gastroenterol. 2003; 98:327-31.