Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2017; 5(8A):3005-3009 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2017.v05i08.011

Original Research Article

To Study the Prevalence of Irritable Bowel Syndrome in Punjab

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Abstract: Functional gastrointestinal disorders (FGIDs) are very common worldwide and include IBS which is seen in approximately 15%-20% of the world population. Prevalence of IBS varies and depends on the criteria used. The prevalence of IBS in various Asian countries is 5% - 10%, 7.5% in an urban community in India and 4% in rural community study from north India. IBS can markedly reduce the quality of life and work productivity. There is paucity of studies exploring the prevalence of IBS in our region, so we conducted this study to document the prevalence of IBS in our region. We conducted a study after taking permission from institutional research and ethical committee and Study subjects included a mix of patient's relatives, hospital staff, students and general population. IBS was diagnosed on Rome III criteria. A simple 8 point objective questionnaire based on Rome III IBS module was used and was translated into local language for the benefit of the local population. A total of 2512 subjects completed the study. The prevalence of IBS in our study was 12.6% among the subtypes of IBS, IBS-D constitutes 33.8%, IBS-C was present in 23.7%, IBS-M was present in 30.3% and IBS-U constituted 12.2% of subjects with IBS. In our study the prevalence of IBS was 12.6% in general population and we suggest further studies on a large scale to document prevalence of IBS and its implications in Punjab.
Keywords: Irritable Bowel Syndrome, Prevalence, Punjab, Population

INTRODUCTION

Functional gastrointestinal disorders (FGIDs) are very common worldwide [1] and comprises of about one third of outpatient consultations. FGID including irritable bowel syndrome (IBS) which is seen in approximately 15%-20% of the world population [2]. IBS is a chronic and sometimes disabling FGID characterized by abdominal pain, discomfort and alteration of bowel habits in the absence of any organic disorder and the prevalence of IBS among Western populations vary between 17 and 22% [3,4]. The functional label is traditionally applied when no obvious structural or biochemical abnormalities are detected, but emerging evidence indicates some distinct pathophysiological factors that may be responsible for the symptoms of IBS [4]. The prevalence of IBS varies from 9% to 22% in general population of United States and European countries [1,5]. The prevalence of IBS among Asian communities appears to be on the rise because of rapid socioeconomic development along with transition in the health and environmental situation in Asia [6]. The prevalence of IBS varies and depends on the criteria used [5,7]. Several diagnostic criteria exist and most commonly accepted include the original Manning criteria and the subsequent series of "Rome foundation" defined criteria. A formal definition according to the Rome III criteria is recurrent abdominal pain or discomfort for at least 3 days per

month during the previous 3 months associated with two or more of the following with onset at least 6 months before diagnosis: (1) symptoms improvement with defecation, (2) onset associated with a change in the frequency of stools and (3) onset associated with a change in form or appearance of stools [8]. The prevalence of IBS in the United States is between 7% and 16%, and the condition is most common in women and young people [9].

The prevalence of IBS in various Asian countries is 5% - 10% [10]. Prevalence of IBS was 7.5% in an urban community in India (Manning criteria) [11], and prevalence was 4% in rural community study from north India [11]. In a study conducted by Indian society of gastroenterology task force for IBS the symptoms suggestive of IBS was found in 4.2% of community subjects as this study was entirely symptoms based diagnosis of IBS rather than using any of the Rome criteria or Manning criteria [13].

FGIDs have a negative impact on health-related quality of life and result in high health care expenditures [14]. The symptoms IBS can markedly reduce the quality of life and IBS is the second common cause for absence from school and work and negatively affects quality of life and work productivity. It has been estimated that patients would give up 10 to 15 years of life expectancy for an instant cure of the disease [15,16]. Direct costs associated with IBS in the United States have been estimated, conservatively, at more than $1 billion [17]. Meta-analysis has shown that prevalence does not vary significantly according to the calendar year in which studies are conducted [9].

Aims and Objectives

There is paucity of studies exploring the prevalence of IBS in our region, so we conducted this study to document the prevalence of IBS in our region.

MATERIAL AND METHODS

We conducted a study after taking permission from institutional research and ethical committee with a minimum sample size of 2000 subjects, based on estimated 5% prevalence rate, a precision of 1% and a non–response rate of 10%. Study subjects included a mix of patient's relatives, hospital staff, students and general population.

Inclusion criteria

All subjects above 18 years of age and willing to participate in the study.

Exclusion criteria

Subjects who are known to have inflammatory bowel disease and Celiac disease.

IBS was diagnosed on Rome III criteria [8], according to which, recurrent abdominal pain or discomfort at least 3 days per month in the last 3 months with onset of symptoms at least 6 months back was essential for suspecting IBS. In addition, to diagnose a person as IBS, the pain needed to be associated with at least 2 out of 3 features which included (A) Relief with defecation, (B) Altered stool frequency, (C) Altered stool form. IBS was further sub classified into: Diarrhea predominant IBS (IBS-D) if they had loose, mushy or water stools in the last 3 months; Constipation predominant IBS (IBS-C) if they had hard or lumpy stools in the past 3 months; Mixed IBS (IBS-M) if they had both loose and hard stools in the past 3 months; Unsubtyped IBS (IBS-U) if they did not report either loose or hard stools in the past 3 months.

A simple 8 point objective questionnaire based on Rome III IBS module was used and was translated into local language for the benefit of the local population. Questionnaire is shown in table 1 and data was analyzed on percentage scale.

Table-1: Questionnaire based on Rome III IBS module for diagnosis of IBS

Questions	**Yes**	**No**
Recurrent abdominal pain or discomfort at least 3 days/month in the last 3 months with onset of symptoms at least 6 months back		
If Yes		
(A) Relief with defecation, (B) Altered stool frequency, (C) Altered stool form		
(A) Relief with defecation, (B) Altered stool frequency		
(A) Relief with defecation, (C) Altered stool form		
(B) Altered stool frequency, (C) Altered stool form		

If Yes	
IBS-D: if the person passes watery/mushy/loose stools in the past 3 months	
IBS-C: if the person passes lumpy or hard stools in the past 3 months	
IBS-M: if the person passes both hard and loose stools in the past 3 months	
IBS-U: if neither loose nor hard stools in the past 3 months	

RESULTS

A total of 2512 subjects completed the study. The prevalence of IBS in our study was 12.6% (317/2512). Among the subtypes of IBS, diarrhea predominant IBS constitutes 33.8% (107/317) of subjects, constipation predominant IBS was present in 23.7% (75/317), mixed type of IBS was present in 30.3% (96/317) and unsubtyped IBS constitutes 12.2% (39/317) of subjects with IBS. Results are shown in table 2.

Table-2: Results based on Rome III IBS module for diagnosis of IBS % (n-2512)

Questions	**Yes**	**No**
Recurrent abdominal pain or discomfort at least 3 days/month in the last 3 months with onset of symptoms at least 6 months back	12.6 (317)	87.4 (2195)
If Yes		
(A) Relief with defecation, (B) Altered stool frequency, (C) Altered stool form	40.1 (127)	
(A) Relief with defecation, (B) Altered stool frequency	34.4 (109)	
(A) Relief with defecation, (C) Altered stool form	15.1 (48)	
(B) Altered stool frequency, (C) Altered stool form	10.4 (33)	
If Yes		
IBS-D: if the person passes watery/mushy/loose stools in the past 3 months	33.8 (107)	
IBS-C: if the person passes lumpy or hard stools in the past 3 months	23.7 (75)	
IBS-M: if the person passes both hard and loose stools in the past 3 months	30.3 (96)	
IBS-U: if neither loose nor hard stools in the past 3 months	12.2 (39)	

DISCUSSION

The prevalence of IBS varies across the world, ranging from as high as 10%-20% in the West, [18] to as low as 4.2% in India [13]. The prevalence of IBS in various Asian countries is 5% - 10% [10]. In an urban community study done in India using Manning criteria the prevalence of IBS was 7.5% [11]. The prevalence of IBS from a rural community study from north India based on ROME III criteria is 4% [12]. In a study done by Indian society of gastroenterology task force for IBS the symptoms suggestive of IBS was found in 4.2% of community subjects [13]. The prevalence of IBS has varied from 1% to 45% in various studies, the wide variation is because of the population studied, criteria used for diagnosis and the social and economical factors of the study group [9]. In our study we used Rome III criteria and the prevalence was 12.6% (317/2512) which is high as compared to other Indian studies. One possible explanation for the high prevalence rate could be from the use of different diagnostic tools or criteria for the detection of a variable condition that is solely symptom based. The prevalence of IBS in our study was much higher than that reported from India, but was almost comparable as reported from other Asian countries like Taiwan (22.1% by Rome II criteria) [19], China (11.5% by Manning criteria) [20], Malaysia (15.6% by Rome II criteria) [21], Pakistan (14% by Rome II criteria) [22], and Turkey (10.2% by Rome II criteria) [23]. In our study IBS-D was most common and found in 33.7% (107/317) of the subjects, second common was IBS-M reported by 30.3% (96/317), IBS-C was present in 23.7% (75/317) and least common was IBS-U found in 12.2% (39/317) of subjects. In a prospective rural community based study, IBS-M was the most common form of IBS in India with prevalence of 1.7% closely followed by IBS-D with prevalence of 1.5% and IBS-C was found in 0.3% and this may be due to a higher fiber intake and faster gut transit time among Indians [24]. Predominance of IBS-M among IBS patients has also been reported from the United State. But in our study IBS-D was most common as compared to other studies where IBS-M was more common. In a study the prevalence of subtypes of IBS in males was IBS-M in 1.9% most common, then IBS-D in 1.2%, IBS-C in 0.4% and IBS-U in 0.4% and another study also documented that IBS-M was most

common at IBS-M 1.4% documented the prevalence of IBS-C as 0.2%, IBS-D as 1.3%, and IBS-U as 0.4%. Similarly the prevalence of subtypes of IBS in females was 0.7% IBS-C, 1.2% IBS-D, 2.9% IBS-M and 1.3% IBS-U. Another study showed the prevalence as 0.3% IBS-C, 1.8% IBS-D, 2.0% IBS-M and 0.7% IBS-U [12]. The prevalence of subtypes of IBS in our study was quite high as compared to other Indian studies. In our study all the three symptoms of (A) Relief with defecation, (B) Altered stool frequency, (C) Altered stool form were reported by 40.1% (127/317) of subjects, two symptoms (A) Relief with defecation, (B) Altered stool frequency were reported by 34.4% (109/317), symptoms of (A) Relief with defecation, (C) Altered stool form were reported by 15.1% (48/317) and symptoms (B) Altered stool frequency, (C) Altered stool form were reported by 10.4% (33/317) of subjects.

Limitation of the study was that the data does not represent the community as a whole and the entire socioeconomic spectrum of the society which will have an impact on the disease prevalence. The analysis did not include gender, region, age groups and socioeconomic status of the subjects.

CONCLUSION

In our study the prevalence of IBS was 12.6% in general population and majority presented with all the three symptoms (40.1%) with predominance of IBS-D (33.7%). Inspite of high prevalence of IBS in our study, IBS still remains an under-diagnosed gastrointestinal disorder. This could be due to low health seeking behavior, poor ability of medical fraternity to diagnose IBS. Further studies are needed to study prevalence of IBS and its implications.

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