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Prevalence of irritable bowel syndrome in a Nigerian student population

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Summary

Irritable bowel syndrome (IBS) is a widely recognized disorder accounting for up to 50% of referrals to gastroenterologists in the Western world. Existing literature had suggested that its prevalence is low among native Africans. The objective is to document the prevalence of IBS in this environment. A cross-sectional study of clinical students at the Jos University Medical School and the School of Medical Laboratory Technology in Jos University were cohorted. Questionnaires based on the Rome II criteria were administered to 330 students (221 males and 109 females). Irritable bowel syndrome was present in 86 (26.1%) of the subjects, being present in 58 (26.4%) of the males and 28 (25.7%) of the females respectively (OR 0.97, 95% CI 0.57- 1.63, $p = 0.89$). The mean age of subjects with IBS was 26.3 ± 4.0 years and that of subjects without IBS was 26.5 ± 3.8 years, $p = 0.6$. The majority (54.8%) of the subjects did not consider their symptoms as illness and therefore did not seek any form of care. More males sought medical care compared to females (19.6% vs. 3.6% respectively, $p = 0.02$). Depressive symptoms were present in 21 (24.4%) of subjects with IBS compared to 36 (14.8%) of those without ($p = 0.06$). Irritable bowel syndrome is a common disorder in the student population of a medical school in Northern Nigeria.

Keywords: *Gastrointestinal disorder, prevalence, irritable bowel syndrome.*

Résumé

Le syndrome de l'intestin irritable (IBS) est un désordre largement reconnu qui atteindront 50% de renvois à gastroentérologistes du monde civilisé. La littérature existante avait suggéré que sa prédominance est basse parmi les Africains. Le but de cet étude est de documenter la prédominance de l' IBS dans cet environnement. Une étude sélectionnée d'un groupe des étudiants clinique à l' école de médecine et à l'ecole medicale de la Technologie Laboratoire de l' Université de Jos. La méthode des questionnaires basée sur la critère de Rome II^{ème} était administrée à 330 étudiants (221 homme et 109 femmes). Le syndrome de l'intestin irritable était présent en 86 (26.1%) des sujets, soit en 58 (26.4%) des hommes et 28 (25.7%) des femmes respectivement. (C'est à dire, 0.97, 95% CI 0.57 - 1.63, $p = 0.89$). L'âge moyen de ces sujets avec IBS était $26.3 + 4.0$ ans pendant que les sujets sans

l' IBS était $26.5 + 3.8$ années, $p = 0.6$. Plusieurs (54.8%) des sujets ne considerent pas leurs symptômes comme une maladie et par conséquent n'ont pas cherché aucune forme du traitement. Plus des hommes ont cherché le soin médical que les femmes (19.6% contre 3.6% , $p = 0.02$). Les symptômes Dépressifs étaient présents en 21 (24.4%) dans les sujets avec IBS comparé aux sujets 36 (14.8%) qui n'ont pas ($p = 0.06$). En conclusion, on a decouvert le syndrome de l'intestin irritable d' être un désordre commun dans plusieurs étudiants de l' école de médecine au Nord du Nigéria.

Introduction

Irritable bowel syndrome (IBS) is a disease of unknown aetiology characterized by chronic and recurrent gastrointestinal symptoms. The Rome II criteria, which is now accepted as the state of the art definition for research studies in IBS defines it as a functional bowel disorder in which abdominal pain/discomfort is relieved with defaecation and associated with a change in bowel habit [1].

IBS is widely recognized as one of the most commonly encountered gastrointestinal disorders. It is the most common diagnosis made in primary care setting, accounting for up to 50% of referrals to gastroenterologists in the Western world [2, 3]. The disease has a large economic impact on health care utilization and absenteeism [1]. In the Western world where the disease has been extensively studied, approximately 10-15% of the population have IBS [4]. A prevalence of 9-22% has been reported in several epidemiological studies in the United States [2, 5, 6]. A slightly higher rate of 25% was reported in Japan whereas a very low rate of 3.5% was reported in Iran [7, 8]. Women outnumbered men in both patient and non-patient populations in Western cultures, whereas in India and Sri Lanka men predominated [9]. This difference may reflect cultural differences in health care seeking behaviour rather than actual prevalence. Generally 70% of people who meet the criteria for IBS do not seek medical care [10].

Despite the paucity of data on the prevalence of IBS in the African population, it is stated in literature to be low [11]. However, a study in an African population showed that 43.5% met the criteria for diagnosis of IBS [12]. It is therefore probable that IBS is also common in this African population. This study is designed to elucidate the prevalence of IBS among a population of post-secondary school students in Jos, Nigeria.

Materials and methods

Study design

This is a cross-sectional study of clinical students at the University of Jos Medical School and the School of Medical Laboratory Technology in Jos carried out between January and March 2004. The Ethical Committee of the hospital approved the study.

Data collection

A questionnaire designed to seek information regarding abdominal pain/distension relieved by defaecation was distributed randomly to the subjects after obtaining informed consent. Other information sought included frequency and consistency of stools, straining during bowel motion, feeling of incomplete evacuation and sensation of abdominal fullness/bloating. Information on features of depression was also inquired for using the DSM IV criteria. Questionnaires were self-administered.

IBS was defined according to the Rome II criteria. Character of IBS was classed into constipation predominant, diarrhoea predominant or alternator depending on the predominant gastrointestinal symptoms.

Exclusion

Pregnant women and individuals with previous positive lower gastrointestinal barium studies and/or colonoscopic findings were excluded.

Statistics

Data were analysed using the statistical software EPI info 2002 (revision 2) [13]. Results of continuous variables were expressed in means \pm SD. The student t-test was used to compare means of continuous variables and Chi-Square to compare proportions where appropriate. A P value < 0.05 was considered significant.

Table 1: Frequency of bowel symptoms associated with abdominal pain (Rome II IBS defining criteria) in the study subjects

Character of abdominal pain	Count	Percentage
Relieved with defecation	90	27.3
Associated with change in frequency of stools	71	21.5
Associated with change in consistency of stools	84	25.4
Total	245	74.2

Results

Characteristics of study subjects

A total of 330 students (221 males and 109 females, with a male/female ratio 2:1) on normal Nigerian diet without evidence of organic disease were studied. The mean age of the subjects was 26.5 ± 3.8 years although the males were older than the females (27.3 ± 3.4 vs. 24.8 ± 3.2 years, re-

spectively, $P < 0.001$). Two hundred and ninety seven subjects (90%) were single and 33 (10%) were married. The majority (85.4%) of the subjects were Christians.

Irritable bowel syndrome

Table 1 shows frequency of bowel symptoms associated with abdominal pain (Rome II IBS defining criteria) in the study subjects. IBS was present in 86 (26.1%) of the subjects, being present in 58 (26.4%) of the males and 28 (25.7%) of the females respectively (OR 0.97, 95% CI 0.57-1.63, $P = 0.89$). Figure 1 shows the age and sex distribution of subjects with IBS. The mean age of subjects with IBS was 26.3 ± 4.0 years and that of subjects without IBS was 26.5 ± 3.8 years, $P = 0.6$. IBS was present in 9 (27.4%) of the married subjects and 77 (25.9%) of the singles respectively, OR 1.07, 95% CI 0.48-2.41, $P = 0.97$. IBS was commoner among Muslims compared to Christians, being present in 20 (41.7%) and 66 (23.5%) respectively, OR 0.43, 95% CI 0.23-0.81, $P = 0.01$).

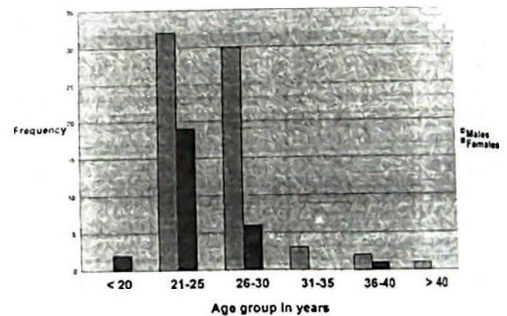


Fig. 1: Age and sex distribution of patients with IBS

The commonest type of bowel disturbance in the affected subjects with IBS is the alternator type (Fig. 2). There was no difference in the distribution of the character of the bowel disturbance between the males and females. The majority (54.8%) of the subjects did not regard

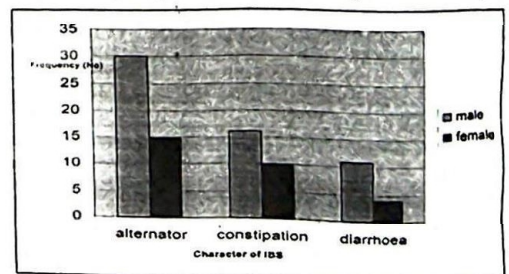


Fig. 2: Character of bowel distribution in IBS
 $\chi^2 = 0.92$, $df = 2$, $P = 0.63$

their symptoms as illness. Dietary modification as means of treatment was used by 3 (3.6%) of the subjects while 27.4% self-medicated and only 14.3% sought orthodox care. More males sought care compared to females, either by

way of self medication (33.9% vs. 14.4%) or orthodox treatment (19.6% vs. 3.6%), $P = 0.02$.

Depressive symptoms were present in 21 (24.4%) of the subjects with IBS compared to 36 (14.8%) of those without (OR 1.87, 95% CI 1.02- 3.42, $P = 0.06$). There was no difference in the prevalence of depressive symptoms between males and females with IBS (22.4% vs. 28.6% respectively, (OR 1.38, 95% CI 1.38- 3.38, $P = 0.7$).

Discussion

The 26.1% prevalence rate of IBS in our study compares with the 10- 25% range reported in the industrialized world [2, 5-7]. It is 3-8 times higher than the reported prevalence in Kenya [14], Singapore [15] and Iran [8]. This may be explained by the fact that we studied a stress prone population. Stress is a major precipitant of IBS [16]. Our finding however contrasts with the 43.5% in a previous study in Western Nigeria among a similar population [12]. This previous study used the Manning criteria which is less stringent than the Rome II criteria and is also known to have low validity in males [1, 11].

Gender was not associated with IBS in our study, the male to female ratio being 1:1. This contrasts the finding in the advanced world where women are three times more affected than men [3, 17]. It is also different from the previous study reported from Nigeria where IBS occurred in 48% of females but only 24% of males [11]. Our finding also differs from the experience in Iran, India and Kenya which all demonstrated a male preponderance of IBS [8, 9, 14].

The majority of subjects in the present study were between 21 – 30 years of age. Existing literature shows that the incidence and prevalence of IBS is highest in the third decade of life with its attendant public health implications [18]. The economic burden of IBS has been recognized [19]. This is due to absenteeism from work and school, leading to loss of productivity. It also has a significant impact on the quality of life of those affected by IBS [20].

The majority of the subjects in our study were Christians. That IBS was commoner in Muslims could largely be attributed to the relatively small number of subjects studied, in the light of the finding in Iran, a predominantly Muslim country with a low prevalence [8].

Even though Locke and colleagues [21] have shown that constipation-predominant and diarrhoea-predominant IBS are equally distributed and "alternators" form a minority of the IBS population, our study demonstrated that IBS with alternating bowel movement was the commonest form (54%). These reports differ from the Olmsted county study that showed equal representation of the three types [5]. This is the first report describing the character of bowel disturbance in subjects with IBS in our environment. The distribution of this may differ between population groups.

Only 14.3% of our subjects with IBS sought medical care as 54.8% of them did not consider their symptoms as illness. This finding corroborates that observed in the

industrialized world where approximately 70% of individuals with IBS do not seek health care [10]. Health seeking behaviour is higher in males than females in our study, a pattern that is similar to that in the Far East [8]. This may reflect cultural behaviour.

There exists a trend between IBS and depression in our study ($p = 0.06$). Twenty one (24.4%) subjects with IBS compared to 36 (14.8%) of those without had depressive symptoms in our study. Existing literature shows that 70–90% of IBS patients have psychiatric co-morbidity, most commonly major depression [22]. Serotonins along with other catecholamines have been shown to be in excess in patients with IBS [23, 24].

In conclusion, IBS is a common disorder in our student population with the "alternator" variant being more predominant. Less than a sixth of the students with IBS seek medical care. More studies, especially community based ones should be embarked upon to describe the magnitude of this problem.

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