

## Frequency of Irritable Bowel Syndrome in Medical Students

Safae Roudi<sup>1\*</sup>, Z. Benjelloun<sup>1</sup>, A. Ait Errami<sup>1</sup>, S. Oubaha<sup>2</sup>, Z. Samlani<sup>1</sup>, K. Krati<sup>1</sup>

<sup>1</sup>Departement of Hepato-Gastro-Enterology, Arrazi Hospital, Mohammed VI University Hospital Center, Marrakech 40000, Morocco

<sup>2</sup>Departement of Physiology, Faculty of Medicine, Cadi Ayyad University, Marrakech 40000, Morocco

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\*Corresponding author: Safae Roudi

Departement of Hepato-Gastro-Enterology, Arrazi Hospital, Mohammed VI University Hospital Center, Marrakech 40000, Morocco

### Abstract

### Original Research Article

**Introduction:** Irritable bowel syndrome (IBS) represents a real public health problem. It is a very common gastrointestinal disorder which has significant impact on the quality of life of patients. The aim of this study is to determine the frequency of irritable bowel syndrome according to the criteria of Rome III and to identify the determining factors. **Methods:** We carried out a prospective cross-sectional observational study with a descriptive aim among students of the Faculty of Medicine and Pharmacy of Marrakech. Forty eight students were collected in our study. **Results:** The prevalence of IBS is estimated at 23.07%. The average age was 22.5 years with ages ranging from 19 to 26 years. A clear predominance of females was noted with a sex ratio of 0.5 (32 females / 16 males). According to the criteria of Rome III, the subtype with predominant constipation presents 60% (N = 21), the subtype with predominant diarrhea presents 54.28% (N = 19), and the mixed form presents 14.25% (N = 5). The most common association was abdominal pain with constipation. Most of the students had intermittent minimal chronic pain, mostly epigastric, accentuated by stress and calmed by stool emission. In association with digestive signs, asthenia was present in 97.14% of patients. The majority of cases had an incorrect lifestyle: 62.5% had an unbalanced diet, and 87.5% did not practice regular physical activity. **Conclusion:** Irritable bowel syndrome is relatively frequent in the active population. Our study objectified that IBS represents a significant percentage within our target population. They are determined principally by stress especially during exams, gender, genetic profile and unhealthy lifestyle.

**Keywords:** Irritable bowel syndrome (IBS), chronic pain, asthenia, digestive endoscopy.

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## INTRODUCTION

Irritable bowel syndrome represents a real public health problem. It is a very common biopsychological gastrointestinal disorder which has an important impact on the quality of life of patients [1, 2]. It is characterized by abdominal discomfort or pain with the absence of any organic disease.

Although its etiology is still unclear, several physical and psychological factors are known for contributing to the pathogenesis of IBS such as stress, anxiety and abnormal attitudes towards the disease, which worsen patients conditions [3, 4]. Prevalent estimates vary internationally [5, 6]. Certain epidemiological studies carried out by questionnaire suggest a prevalence ranging from 10 to 25% [7-9].

The diagnosis of IBS is based on clinical criteria which has evolved over the years: the Manning criteria (1978), the Kruiss criteria (1984) and the Rome I, II and III criteria [10, 11].

Therapeutic management is multidisciplinary justifying the significant economic impact of this condition. The direct and indirect cost of care generated is over eight trillion dollars per year [12, 13].

Medical students are believed to experience more stress than other groups in the population due to the stressful academic environment.

The objective of our study is to determine the frequency of Irritable bowel syndrome in medical students according to the Rome III criteria and to identify the determining factors.

## MATERIAL AND METHODS

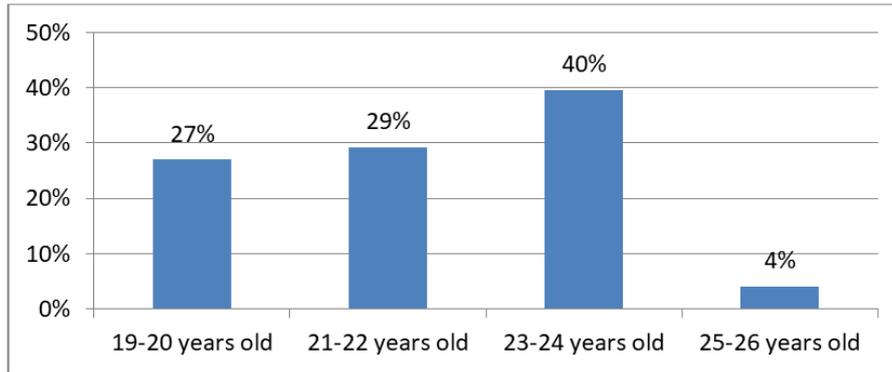
This is a prospective transversal observational descriptive study done at the Faculty of Medicine and Pharmacy of Marrakech, targeting forty eight medical students aged between 19 and 30 years old responding to the ROME III criteria.

To approach our study, we used an exploitation sheet that contains the following variables: epidemiological (identity, age, gender, marital status, origin, economic level, medical, surgical and family history), clinical (abdominal pain, vomiting, bloating, intestinal transit disorders such as diarrhea or constipation, appearance of stool, dyspepsia, extra-digestive signs), paraclinical (digestive endoscopy, imaging), therapeutic means (Anti spasmodic, anti diarrhetic, inhibitors of proton pump) and quality of life according to the MOS SF-36 Health Survey.

The anonymity and confidentiality of information was respected.

**RESULTS**

We collected 219 medical students in our study. The average age of our students was 22.5 years old with extremes ranging from 19 to 26 years old. The diagram below shows the distribution of cases according to age groups with a peak frequency between 21 and 24 years (Figure 1).



**Figure 1: Distribution of cases by age group**

The Sex ratio (men / women) was 0.5 with a clear predominance of women (67%). Sociologically The majority of our students had an average economic level (62%), single (89%) and lived in collocation in 73% of cases.

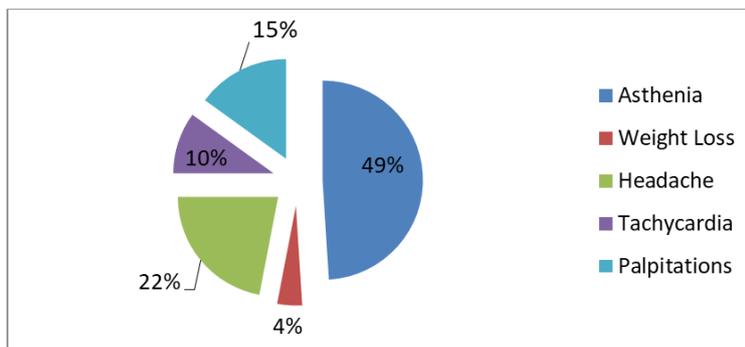
Clinically The most frequently found symptoms were abdominal pain in 100% of cases followed by abdominal bloating (64%) and then intestinal transit disorders (72.9%) (Table I).

**Table 1: Distribution according to clinical symptoms**

Symptoms	Number of cases	Percentage
Abdominal pain	48	100%
Abdominal bloating	31	64%
Vomiting	10	20%
Nausea	27	56%
Intestinal transit disorder	34	72,9%
Dyspepsia	25	52%
<b>Total</b>	<b>48</b>	<b>100%</b>

As for extra digestive signs, the most frequent extra digestive sign is asthenia with a percentage of 49% followed by headaches and palpitations

respectively in 22% and 15% of cases as shown in Figure 2.



**Figure 2: Distribution according to extra digestive signs**

Most of the students had an unhealthy lifestyle: 30 cases or 62.5% prefer fast food, 42 cases

had irregular physical activity or 87.5% and 10 cases had toxic habits or 20.8% (Table 2).

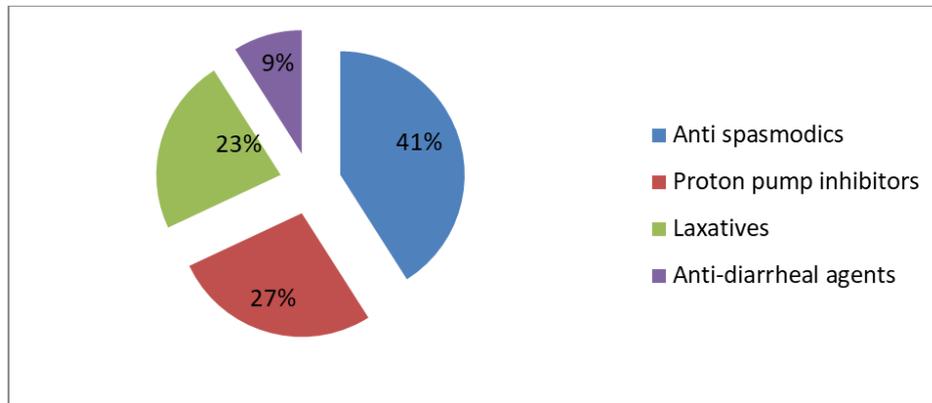
**Table 2: Distribution of cases by lifestyle**

Hygiene and dietary measures	Number of cases	Percentage
Feeding	Various 18	37,5%
	Fast food 30	62,5%
Physical activity	Regular 6	12,5%
	Irregular 42	87,5%
Toxic Habits	Tobacco 9	90%
	Alcohol 8	80%

For the psychological profile, in our study, stress was present in 81.25% of students and most often concomitant with exams period followed by sleep disorders with a percentage of 53.4%. When it comes to the quality of life, scores of SF-36 are more reduced than those observed in the general reference population (French population).

53.84% of the students consulted a medical specialist, of which 79.1% of the students did not carry out additional examinations.

81.25% of the students received symptomatic treatment by self-medication of which the types are described below in figure 3.



**Figure 3: Distribution of patients according to the type of treatment received by self-medication**

**DISCUSSION**

Irritable bowel syndrome (IBS) refers to all the chronic gastro intestinal signs and symptoms for which no lesional, infectious or metabolic abnormality is demonstrated by the usual examinations, generally combining intestinal transit disorders, abdominal pain and abdominal bloating. Several names have been proposed, including those for functional colopathy, obsessive neurosis, and hyperactive colon. The diagnosis of IBS is based on clinical criteria which have evolved over the years: the Manning criteria (1978), the Kruiss criteria (1984) then the Rome I, II and III criteria.

The Rome III criteria, published in 2006, suggests that the individual should have recurring episodes of abdominal pain or discomfort for at least three days per month during the past three months, in addition to two or more of these characteristics following: [14]

- Relief through defecation
- Occurrence associated with a change in the frequency of stool emission

- Occurrence associated with a change in stool consistency

Initially considered to be a purely motor disorder, IBS has become a multifactorial disorder, the pathophysiology of which involves several mechanisms: alteration of digestive motor function, visceral hypersensitivity, mental disorders, an inflammatory component and neurotransmitter imbalances [15, 16].

Epidemiologically, most studies examining the prevalence of IBD are community surveys, with the majority conducted in Europe, Southeast Asia and North America [17]. The prevalence of IBS in the community is between 10% and 25% [18, 19]. Variation by geographic area has been noted, lowest in South Asia (7.0%) and highest in South America (21.0%). In Morocco, no data is available due to a lack of epidemiological studies of the general population.

In our study, the frequency of IBS among the students of the medical faculty of Marrakech was 23.07%. Our prevalence estimate was comparable to

that of a study conducted among students at the University of Lebanon [20] which was 20.5%. However, it remains lower than that observed among medical students at Prince Abdulaziz University (Jeddah) and Pakistan, which were around 31.8% [21] and 28.3% [10], respectively.

The average age of our participants was 22.5 years with a peak in frequency between 21-24 years. This is comparable with what was found in studies carried out among students of the University of Lebanon [21] and the Faculty of Medicine of Karachi in Pakistan [10] who were respectively in the range of 22.7 years and 22 years old. Regarding gender, most studies carried out in Western countries have shown that IBS affects women more than men [22].

Due to its unknown pathophysiology, several studies have been carried out to reveal the predictive factors of irritable bowel syndrome. In our series, the statistical analysis carried out, showed that there is a significant association between the IBS and a set of factors which seem to be determining and which are: female gender, the presence of familial history of TFI in the target population, and psychological stress. According to a study carried out at the University of Bristol in England, several factors have been found to be responsible for the onset or even worsening of IBS [23]. They are represented mainly by: female gender, hormonal factors, genetic differences, psychosocial factors linked to stress and mental well-being.

The most frequently found clinical signs were abdominal pain (100%), bloating (64%) and constipation (72.9%). Coffin *et al.*, [24] reported that abdominal pain was related in 19% of patients with meals and stress in 26%, and that bloating is also linked to meals in 39.6% of patients.

In our study, stress, anxiety and sleep disorders were present in 43%, 23%, and 26% of our students, respectively, this is comparable to a study conducted among medical students and interns in Saudi Arabia which has shown that emotional stress is one of the predictors of IBS in students anxiety (40.1%) [10].

In the majority of cases of irritable bowel syndrome, no further examination is necessary.

Since there is no consensus on the causes of IBD, we can not apply one specific treatment that could be applicable worldwide which is explained by the interrelation between the symptoms of IBD and factors such as diet, stress, psychological factors. It is important to pay particular attention to all risk factors, by adopting all measures likely to reduce or even eliminate the triggering factors. Therapeutic means can be medicinal (anti spasmodics, anticholinergics, laxatives, antidiarrheal agents, anti flatulents, anti-depressants, anxiolytics..) or (lifestyle, acupuncture,

phytotherapy). Long-lasting healing is unusual. The best therapy remains listening to the patient and renewed discussion during consultations, in order to understand and better control the cause-effect relationship between symptoms and risk factors.

## CONCLUSION

Irritable bowel syndrome (IBS) is relatively common in the active population. The exact frequency of this syndrome, however is difficult to establish.

Although IBS is not life-threatening, it is a chronic, relapsing disease that is often associated with impaired quality of life.

Although these disorders are chronic and not severe, patients should be carefully examined clinically, as organic disease can occur by mere coincidence.

The medical professionals must improve the care of people suffering from IBS by providing more information about the disease, by answering patients questions, by showing empathy and support, by better listening, and by having more positive conversations.

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