



Review Article

New insights into the pathogenesis and treatment of irritable bowel syndrome



Joanna Oświęcimska^{a,*}, Agnieszka Szymłak^b, Wojciech Rocznik^c,
Katarzyna Girczys-Połedniok^d, Jarosław Kwiecień^a

^a Chair and Department of Paediatrics, School of Medicine with Division of Dentistry in Zabrze, Medical University of Silesia in Katowice, Poland

^b Department of Paediatric Endocrinology, Prof. Stanisław Szyszko Independent Public University Hospital No 1 in Zabrze, Medical University of Silesia in Katowice, Poland

^c Institute of Medicine, Jan Grodek State Vocational School in Sanok, Poland

^d Chair and Department of Psychiatry, School of Medicine with Division of Dentistry in Zabrze, Medical University of Silesia in Katowice, Poland

ARTICLE INFO

Article history:

Received 27 April 2016

Accepted 12 November 2016

Available online

Keywords:

Irritable bowel syndrome

Diagnosis

Pathogenesis

Treatment

Gut-brain axis

ABSTRACT

Irritable bowel syndrome (IBS) is one of the most common functional gastrointestinal disorders (FGID), characterized by abdominal pain and a change in stool form that cannot be explained by structural abnormalities. Its prevalence ranges from 9 to 23% of the worldwide population. The pathophysiology of IBS is diverse and not well understood. Biopsychosocial concept assumes that the disease is a product of psychosocial factors and altered at multiple levels of gut physiology interactions. Some aetiological factors have been identified, yet. One of the most important is the disruption of brain-gut mutual communication that leads to visceral hypersensitivity. Also genetic and epigenetic factors are involved. Chronic stress may predispose to IBS as well as exacerbate its symptoms. Both quantitative and qualitative disorders of the gut microbiota are observed. There is also a relationship between the IBS symptoms and the intake of a specific type of food products. In the diarrhoea type of IBS the role of previous gastrointestinal infection is demonstrated. Recent studies have suggested that visceral hypersensitivity in patients with IBS may be secondary to the activation of the immune cells and low-grade inflammation. Clinical symptoms of IBS include abdominal pain and change in bowel habits as well as somatic and psychiatric comorbidities. IBS is diagnosed on the basis of Rome Diagnostic Criteria. Recently, their newest version (Rome IV) has been presented. The aim of this review is to summarize the past decade progress in IBS diagnosis, main pathophysiological aspects and therapeutic management strategy.

© 2016 Medical University of Białystok. Published by Elsevier Sp. z o.o. All rights reserved.

Contents

1. Introduction	18
2. Review	18
2.1. Clinical symptoms and criteria of IBS diagnosis	18
2.2. Pathogenesis of irritable bowel syndrome	20
2.2.1. Brain-gut axis	20
2.2.2. Intestinal barrier	21
2.2.3. Effect of psychosomatic disorders	21
2.2.4. Genetic predisposition	21
2.2.5. Stress	22
2.2.6. The role of the gut microbiota in IBS	22
2.2.7. Diet	23
2.2.8. Infections	23

* Corresponding author at: Chair and Department of Paediatrics, ul. 3 Maja 13/15, 41-800 Zabrze, Poland. Fax: +48 32 3704292.
E-mail address: smina@poczta.onet.pl (J. Oświęcimska).

2.2.9.	Low-grade inflammation	24
2.3.	Pharmacological treatment of IBS	24
2.3.1.	Antispasmodic agents	24
2.3.2.	Antibiotic therapy	25
2.3.3.	Loperamide	25
2.3.4.	Probiotics and prebiotics	25
2.3.5.	Antidepressants	26
2.3.6.	Laxatives	26
2.3.7.	5-HT ₄ receptor agonists	26
2.3.8.	5-HT ₃ receptor antagonists	26
2.3.9.	Mesalazine	26
2.3.10.	Peppermint oil	26
2.3.11.	New incoming drugs	26
2.4.	Nonpharmacological methods	26
2.4.1.	Diet	26
2.4.2.	Psychotherapy	27
2.4.3.	Other treatments	27
3.	Conclusion	27
	References	27

1. Introduction

Irritable bowel syndrome (IBS) is one of the most common functional bowel disorders characterized by recurrent abdominal pain and change in bowel habits (constipation or/and diarrhoea). The symptoms occur at least 1 day per week in the last 3 months and should be associated with 2 or more of the following criteria: (1) related to defecation; (2) a change in the frequency of defecation; (3) a change of stool appearance [1].

The stool is assessed following the Bristol Stool Form Scale (BSFS), showing its 7 types: types 1 and 2 as constipation, 3 and 4 – normally formed stool of a healthy person, whereas types 5–7 correspond to diarrhoea [2].

According to the character of patient's stools assessed using BSFS, four types of IBS having comparable prevalence rates can be distinguished: IBS-D (*diarrhoea-predominant*), IBS-C (*constipation-predominant*), IBS-M (*mixed, i.e. alternating diarrhoea and constipation*) and IBS-U (*unsubtyped*) [2,3]. The IBS-C may be diagnosed if more than 25% of bowel movements is type 1 or 2 and less than 25% – type 6 or 7. IBS-D criteria require more than 25% of bowel movements type 6 or 7 and less than 25% – type 1 or 2. Patients with IBS-M should demonstrate mixed bowel habits with more than 25% of bowel movements type 1 or 2 and more than 25% – type 6 or 7. IBS-U is diagnosed when patient bowel habits cannot be categorized to any of 3 groups above [1]. It is, however, worthy of note that in approximately 75% of patients, the type of IBS may undergo some changes in a relatively short time [3].

IBS is widespread in developed countries, although its prevalence increases worldwide and it is estimated at 9–23% in the overall population [4]. The morbidity rate in the adult population is 200/100,000 people/year [5]. In European countries and in the USA, the prevalence rate of IBS is 7–30% of the population [6], with women being more frequently affected (2:1) [4,7,8]. Most patients at the time of diagnosis are under 50 [3]. The prevalence of IBS in a group of children aged 4–18 years is 8.8% [9]. Despite high prevalence of IBS, its aetiology and pathogenesis have not been fully explained, and the diagnostics may be difficult in some cases.

The disease was first described in 1849, but the first holistic concept of mind and body integration and its' inseparability was proposed by Plato, Aristotle and Hippocrates. The first physician who suggested emotional changes could lead to medical disease development was Claudius Galen. In 20th century an experiment performed by Tom Almy indeed confirmed correlations between mood and gastric motility [4,10].

For a long time IBS was classified as a psychiatric disorder due to a very high incidence of psychological distress or disturbances in these patients. In the 1980s the first diagnostic criteria of IBS were published by a group of experts working on functional gastrointestinal disorders (FGID) [10]. Currently, the disease is diagnosed according to IV Rome Criteria [1].

In this review we summarize the diagnosis, main pathophysiological aspects and therapeutic management strategy of IBS.

2. Review

2.1. Clinical symptoms and criteria of IBS diagnosis

Diagnostic principles of gastrointestinal tract dysfunctions are defined in Rome IV Diagnostic Criteria published in 2016. According to them, IBS can be diagnosed when a patient complains of recurrent abdominal pain associated with 2 or more of the following criteria: (1) related to defecation; (2) associated with a change in the frequency of defecation; (3) associated with a change of stool appearance (Table 1). There are some differences in diagnostic criteria of IBS in adults, children and adolescents [1] (Table 1).

There are some main differences between Rome Criteria III from 2006 and IV from 2016. Firstly, the term 'discomfort' was removed because it is not easy to distinguish pain from discomfort. Furthermore, this term has been differently understood in several languages. Symptoms should appear at least 4 days per month not 1 day per week as it was before. Changes in stool consistency are no longer linked to pain onset, but only associated with pain presence. Moreover, the pain relief after defecation is replaced by pain related to defecation. The patients with constipation and abdominal pain should be treated for constipation only. If constipation treatment reduces the severity of symptoms, the functional constipation should be diagnosed [1,11].

Gastrointestinal functional disorders diagnosis according to Rome III Criteria was difficult and time-consuming in some patients because of necessity to exclude organic disorders. The current criteria allow the clinician to limit the number of diagnostic tests, and replace previously used term "no evidence for organic disease" with "after appropriate medical evaluation the symptoms cannot be attributed to another medical condition". However, this attitude is challenging and still needs to be tested in prospective clinical studies evaluating the risk of organic disease omission [1,11].

There are limitations for Rome Criteria use in clinical practice. These criteria may exclude the patients, who can be successfully treated but do not fulfil the criteria. The exclusion may be due to

Download English Version:

<https://daneshyari.com/en/article/8368463>

Download Persian Version:

<https://daneshyari.com/article/8368463>

[Daneshyari.com](https://daneshyari.com)