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Position of an expert panel on diagnosis of treatment of irritable bowel syndrome

MATEUSZ BABICKI[1, A, B, D–F], AGNIESZKA MASTALERZ-MIGAS[1, A, B, D–F],
ORCID ID: 0000-0002-7719-6959 ORCID ID: 0000-0001-6600-2760

MAGDALENA STOLARCZYK[2, A, B, D–F], DOROTA WAŚKO-CZOPNIK[3, A, B, D–F], ADAM WICHNIAK[4, A, B, D–F]
ORCID ID: 0000-0001-6648-6830 ORCID ID: 0000-0002-5352-601X

[1] Department of Family Medicine, Wroclaw Medical University, Wroclaw, Poland
[2] District Pharmaceutical Chamber, Warsaw, Poland
[3] Department of Gastroenterology and Hepatology, Wroclaw Medical University, Wroclaw, Poland
[4] 3rd Division of Psychiatry and Sleep Disorders Centre at the Institute of Psychiatry and Neurology, Warsaw, Poland

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Summary Irritable bowel syndrome is a significant health problem that can affect up to 11% of the general population. The problem is far more common among women and young people, especially in their thirties. The aetiology of the disease is not fully understood, but it is now thought that dysregulation of the gut-brain axis may be one of the causes. In addition, psychogenic factors, genetics and dietary habits have been attributed a role in the development of the disease. The diagnosis of the disease is based on the clinical picture and the exclusion of other organic causes that may lead to clinical symptoms. According to the Rome IV criteria, diagnosis of IBS is possible when recurrent abdominal pain is found, occurring at least once a week, for the last 3 months. The pain must be accompanied by at least 2 of the following criteria: it is associated with a bowel movement, with a change in the frequency of bowel movements or with a change in the consistency of the stool. Irritable bowel syndrome is a chronic, recurrent condition, with varying frequency of exacerbations and quiescence, dependent on a number of factors. As no clear aetiology has been established to date, we therefore have no causal treatment and no effective and lasting cure. In this situation, treatment must be comprehensive, involving non-pharmacological management related to changes in lifestyle and eating habits and, in the absence of adequate therapeutic effects, pharmacological treatment. Pharmacological treatment should be symptomatic, targeting the predominant complaints and types of IBS, and we can reach for muscle relaxants, drugs to stimulate intestinal peristalsis, antidepressants, rifaximin, laxatives, antidiarrheals and drugs for bloating, probiotics and herbal medicines, e.g. peppermint oil.
Key words: drug therapy, irritable bowel syndrome, diagnosis.

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Background

Irritable Bowel Syndrome (IBS) is a chronic condition that ranks among the top five functional bowel disorders alongside functional constipation, functional diarrhoea, functional flatulence and unspecified functional bowel disorders. This condition is one of the more common complaints presented by patients to primary care. According to estimates, up to 11% of the general population may suffer from irritable bowel syndrome. In Polish society, its prevalence is estimated at 11–13%. The disease is far more likely to affect young adults (< 50 years of age), with a peak in the 3rd decade of life. It has also been observed that women are twice as likely to suffer from IBS than men [1–3].

The causes of irritable bowel syndrome are not fully understood. It is now estimated that this condition may be due to dysregulation of the gut-brain axis [4]. Furthermore, it is thought that genetic predisposition may predispose one to the development of IBS, and that the presence of IBS in a family member increases the risk of other individuals developing the condition. Disorders of the gut microbiota (e.g. SIBO [bacterial overgrowth syndrome], dysbiosis after antibiotic therapy) have also been shown to predispose one to the development of IBS, along with experiencing a gastrointestinal infection – viral, bacterial or parasitic. Activation of the immune system and a change in intestinal membrane permeability following infection, dysbiosis or even increased stressful situations are also considered as potential causes. Moreover, psychological factors now play a very important role, and stress, anxiety, traumatic experience or even depression can be a predisposing factor in the development of IBS. Dietary habits should also be mentioned among the causes. Studies show that a diet that is low in fat and rich in easily fermentable short-chain carbohydrates may predispose one to an exacerbation of symptoms of the disease. However, it should be remembered that irritable bowel syndrome is a functional disorder, so its cause is not related to organic disorders [5, 6].

Diagnosis and diagnostic criteria

Diagnosis of the disease is made on the basis of the clinical picture and the exclusion of organic causes of the manifested symptoms. According to the Rome IV criteria, diagnosis of IBS is possible when recurrent abdominal pain is found, occurring at least once a week, for the last 3 months. The pain must be accompanied by at least 2 of the following criteria:

1. It is associated with bowel movement.
2. It is associated with a change in the frequency of bowel movements.
3. It is associated with a change in stool consistency [7–9].

In addition, four types of IBS are distinguished according to the predominant clinical picture:

1. IBS with constipation (IBS-C) – > 25% of stools are of type 1 and 2 forms on the Bristol Stool Form Scale, while < 25% are of type 6 and 7.
2. IBS with diarrhoea (IBS-D) – > 25% of stools are of type 6 and 7 form on the Bristol Stool Form Scale, while < 25% are of type 1 and 2.
3. Mixed type of IBS (IBS-M) – > 25% of bowel movements are of type 1 and 2, but also 6 and 7.
4. Unclassified type of IBS (IBS-U) – when < 25% of bowel movements are of type 1 and 2 or 6 and 7 [7–9].

To assess stool form, the Bristol Stool Form Scale is used. Importantly, the assessment is made only for abnormal stools and without prior use of laxatives or antidiarrheals. Normal stools are not assessed [10].

In the diagnostic process of irritable bowel syndrome, a thorough medical history and physical examination are crucial. In the initial stage of diagnosis, a blood count is also recommended. Once the Rome criteria are met and there are no alarming symptoms, the type of IBS should be determined. For the type with diarrhoea, mixed and unclassified types, faecal calprotectin and blood CRP should additionally be determined. US recommendations additionally suggest determination of faecal lactoferrin levels.

An evaluation of the efficacy of the implemented treatment should be carried out in up to 12 weeks, and in the absence of efficacy, a differential diagnosis is recommended, which includes a serological test for visceral disease (anti-tissue transglutaminase (anti-tTG) IgA and total IgA antibodies). In case of a positive result, gastroscopy with duodenal sampling is additionally indicated. Importantly, in US recommendations, differential diagnosis with coeliac disease is recommended at an early stage rather than only after ineffective treatment. This approach seems to be justified in order to detect and treat the visceral disease earlier. In addition, a breath test for SIBO is recommended. Possible tests used in the differential diagnosis include a lactose tolerance test. The Polish Society of Gastroenterology does not recommend parasite tests and microbiological examination of faeces for every patient, but only when alarm symptoms are present. The same is true for colonoscopy. The exact procedure is shown in Figure 1 [3].

Conditions with which irritable bowel syndrome should be differentiated include:

- coeliac disease (visceral disease),
- inflammatory bowel disease (ulcerative colitis, Crohn's disease),
- gastrointestinal cancers,
- parasitic and bacterial intestinal diseases,
- allergy,
- SIBO,

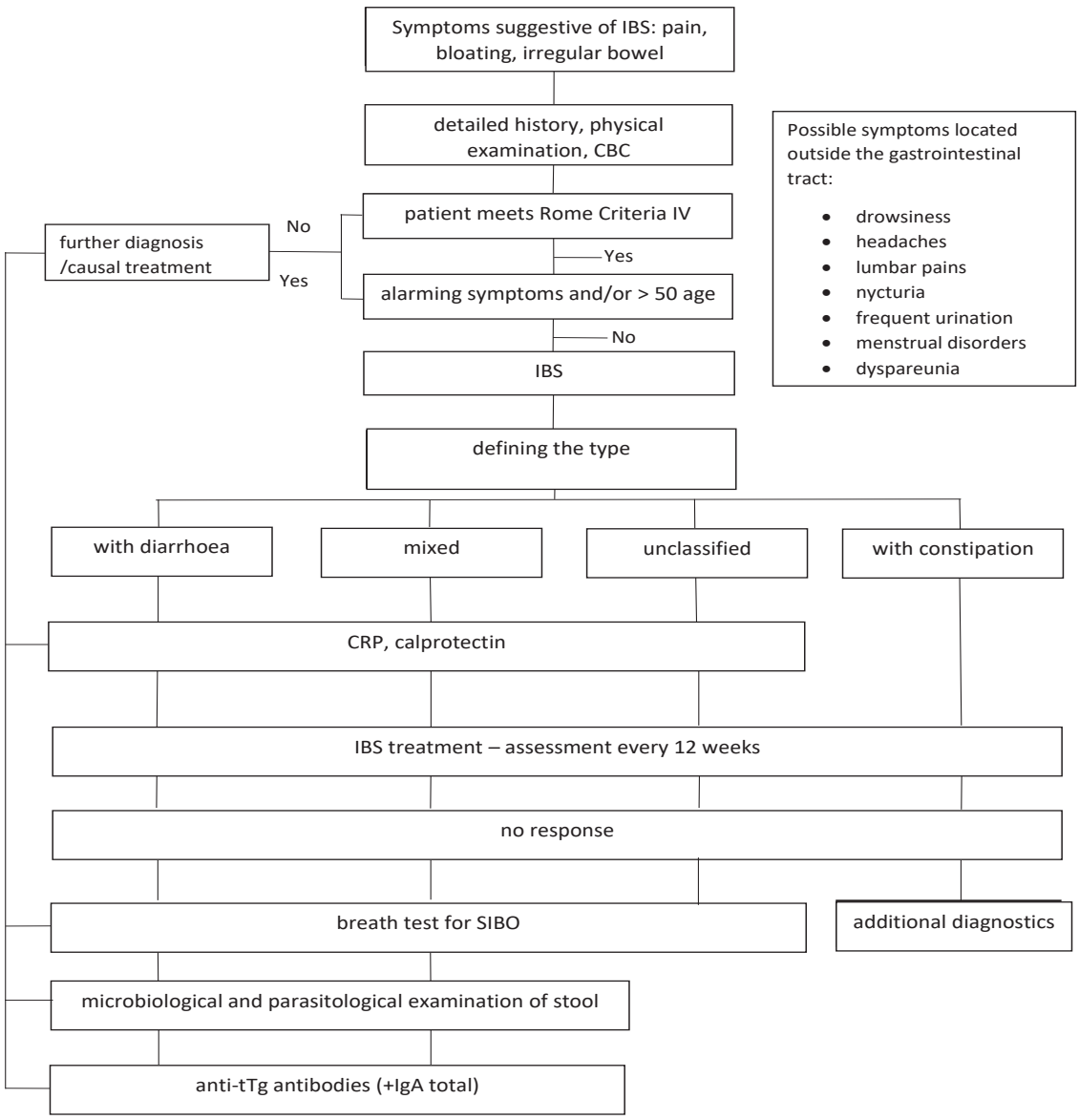

Figure 1. Diagnostic algorithm for irritable bowel syndrome [9]

- diverticular disease,
- metabolic diseases: diabetes mellitus, hyper/hypothyroidism, lactose intolerance.

Clinical manifestation

The clinical manifestation of the disease is diverse. The most common complaints include abdominal pain, which can be located in different parts of the abdomen, usually affecting the lower abdomen. It can be of an acute, spasmodic nature. The pain does not occur at night and does not awaken one from sleep. In addition, it may be accompanied by bloating, a change in the rhythm of bowel movements, rectal tenesmus or the presence of mucus in the stool. Less frequent symptoms also include vomiting, heartburn, urinary urgency, nycturia, headaches or systemic symptoms such as weakness, drowsiness and mood disorders.

The change in bowel movement rhythms, as mentioned earlier, determines the type of disease. The diarrhoea is usually watery or semi-liquid, rarely characterised by increased volume. It most often occurs after meals, stress and mainly in the morning, preceded by a sudden urge to stool.

In the case of constipations, in addition to a reduced frequency of bowel movements, stools with a firm, hard, lumpy consistency are observed. Defecation is accompanied by considerable effort, and a feeling of incomplete defecation remains afterwards.

Although subtypes with predominant clinical manifestations are distinguished, it is important to bear in mind that there the range of predominant symptoms may change often and intermingling of its different types may occur. Irritable bowel syndrome is chronic and recurrent in nature [3, 9, 11–14].

It is also important to be aware of alarming symptoms known as red flags, which may indicate another cause of the condition. Those symptoms include:

- Unintentional weight loss,
- Presence of blood in stool,
- Symptoms at night that awaken the patient,
- Accompanying fever,
- Abnormalities on physical examination: ascites, palpable resistance in the abdomen,
- Anaemia.

In addition, diagnostic and therapeutic vigilance should be exercised in patients > 50 years of age, with a genetic predisposition to gastrointestinal cancers and inflammatory bowel disease [9, 15].

Treatment

Irritable bowel syndrome is a chronic, recurrent condition, with varying frequency of exacerbations and quiescence, dependent on a number of factors. No clear aetiology has been established to date; therefore, we have no causal treatment and no effective and lasting cure. In this situation, treatment must be comprehensive, involving non-pharmacological management related to changes in lifestyle and eating habits and, in the absence of adequate therapeutic effects, pharmacological treatment. At the same time, it is extremely important to build a good relationship with the patient through mutual trust, explaining the nature and course of the disease, which promotes the patient's understanding of potential treatment failures, the need to extend or change therapy, depending on the currently predominant symptoms.

Non-pharmacological management

In the non-pharmacological management of irritable bowel syndrome, a well-chosen diet is very important. A temporary diet low in fermentable simple sugars and polyols (low-FODMAP diet) is recommended to alleviate the discomfort. This diet has several steps. At the very beginning, the intake of FODMAP-rich products should be limited – up to 6 weeks. When complaints are reduced or disappear, products rich in FODMAPs should be gradually included in the diet, e.g. one product per day e.g. for 3 days. At the same time, emerging symptoms should be monitored closely to determine which products induce the occurrence of complaints. The last step of the diet consists of creating an individual diet plan taking into account the patient's needs and possibilities [9, 16–18].

Elimination diets, including gluten-free and lactose-free diets, are not recommended in the course of treatment of IBS without a diagnosis of intolerance to the above ingredients. An important therapeutic element of IBS is a diet rich in soluble fibre, which reduces the severity of the condition. On the other hand, however, it should be borne in mind that the use of insoluble fibre may contribute to the exacerbation of clinical symptoms. Physical activity – regular, moderate physical activity is recommended in the course of IBS, and it may help to reduce clinical symptoms. In addition, physical activity reduces the risk of developing overweight or obesity, which increase the risk of developing clinical symptoms. In the above patients, weight reduction was shown to improve the therapeutic process [3, 9, 18].

Psychotherapy

In addition to dietary recommendations, regular physical activity and adherence to healthy lifestyle principles, including attention to adequate rest and sleep, psychological interventions, both in the form of individual interventions and systematic treatment, i.e. psychotherapy, play an important role in the treatment of IBS. Although psychotherapy is not indicated for every patient with IBS, it should be considered for those with insufficient social support, low self-esteem, difficulty establishing or maintaining interpersonal relationships, with a history of traumatic events or psychiatric disorders [19]. In addition, a number of recommendations, e.g. from NICE (National Institute for Health and Clinical Excellence), identify psychotherapy as the recommended treatment option for patients in whom pharmacological treatment has failed to achieve significant improvement within 12 months and for those with unresponsive IBS [20]. Primary psychological interventions in the treatment of IBS include psychological support and psychoeducation on the relationship between IBS and mental health. Further, more complex interactions include relaxation training, mindfulness training, therapy using patient manuals based on cognitive behavioural therapy (CBT) techniques, which can also be used by primary care physicians, and CBT therapy [21, 22]. Contrary to the sceptical attitude of many IBS patients towards psychotherapy, which is easily changed with properly guided psychoeducation, the addition of CBT to pharmacological treatment of IBS, with mebeverine for example, is a clinically and economically effective treatment option, and the NNT (number needed to treat) rate for psychotherapeutic interventions in IBS is between 2 and 4 [19, 23].

Role of the pharmacist

Pharmacists, working in public pharmacies, play an important role in the care of patients with Irritable Bowel Syndrome. They are often the first healthcare professionals a patient encounters, reports their symptoms to and asks them to recommend an appropriate preparation and treatment. Often, the information the patient receives from the pharmacist determines his or her behaviour and the next steps he or she takes, both pharmacological and non-pharmacological. This is why the role of the pharmacist is so crucial in the care of such a patient and should include:

- taking an initial interview with the patient,
- identifying the symptoms the patient is experiencing – their nature and severity,
- ruling out or confirming warning signs, which should prompt the pharmacist to refer the patient to a doctor immediately,
- establishing the patient's previous management, the medicines or other preparations used and their effectiveness,
- preliminary differentiation of symptoms suggestive of IBS from other complaints,
- dispensing of medicines, food supplements or medical devices that may occasionally help the patient,
- informing on the correct and appropriate use of medicines, food supplements or medical devices,
- referring the patient to a doctor for an accurate diagnosis and to determine the appropriate treatment,
- dispensing of the medicine prescribed by the doctor, together with information on its correct and proper use,
- reminding the patient of the need to introduce non-pharmacological measures into his/her life (weight reduction, physical activity, low-FODMAP diet, identification of intolerable products, psychological support, elimination of stimulants: smoking and alcohol consumption).

In fulfilling these roles, the pharmacist's extensive knowledge, as well as the products (drugs, dietary supplements, medical devices) available over the counter in the pharmacy, containing various substances such as probiotics, herbal medicines (e.g. peppermint oil or plant extracts), anti-diarrhoeals, laxatives and antispasmodics, are helpful.

Pharmacological management

Over-the-counter products

Probiotics

So far, it has been shown that the use of selected probiotic bacterial strains with documented effects can contribute to an improved quality of life in patients with IBS. These strains can reduce the severity of pain, reduce bloating and gas and may also improve the patient's wellbeing and quality of life.

Probiotic bacteria with documented effects include:

- *Bifidobacterium infantis* 35624,
- *Lactobacillus plantarum* 299v,
- *Saccharomyces boulardii,*
- a mixture of several strains, such as: *Streptococcus thermophilus, Bifidobacterium breve, Bifidobacterium longum, Bifidobacterium infantis, Lactobacillus acidophilus, Lactobacillus plantarum, Lactobacillus paracasei, Lactobacillus delbrueckii* spp. *Bulgaricus.*

In recommending probiotics to a patient, attention should be paid to the qualitative and quantitative composition of the product. It is recommended to use strains or mixtures of probiotic bacterial strains that have been tested for efficacy with IBS [3, 9, 18].

Peppermint oil

Peppermint oil is available in the form of capsules. It has been shown to have antispasmodic, antimicrobial, anti-inflammatory, antioxidant, immunomodulatory and anaesthetic effects. Studies indicate that this oil can be used as an antispasmodic in patients with IBS. It is safe, well tolerated and has no adverse effects. It can therefore be recommended to patients complaining of abdominal pain and spasms and flatulence. However, it should not be used in patients with heartburn and reflux. According to the 2018 recommendations of the Polish Society of Gastroenterology, it is recommended to use 180–225 mg of peppermint oil 2 times a day, 30–60 minutes before meals for 2 to 12 weeks [3, 9, 18, 24].

Herbal medicines – containing plant extracts

Preparations containing extracts of herbal raw materials (angelica root, chamomile flower, cumin seed, lemon balm leaves, mint leaves, celandine herb, liquorice root, wild candytuft herb) have antispasmodic effects on the smooth muscles of the digestive system. They have prokinetic, antioxidant and anti-inflammatory effects, reducing bloating, intestinal hypersensitivity and pain. These products can provide relief of symptoms indicative of IBS. However, as indicated by studies, recommendations and meta-analyses, there is no sufficiently strong evidence to indicate significant efficacy of such preparations in IBS [9].

Anti-diarrhoeal drugs

Loperamide is the anti-diarrhoeal drug recommended for emergency use in patients with IBS. It reduces the severity of diarrhoea, but only affects stool frequency and consistency. According to studies, loperamide does not relieve abdominal pain or other symptoms of IBS [3, 9, 18, 25].

Laxatives

In IBS with constipation, the use of macrogols, which, as osmotically active compounds, are not absorbed from the gastrointestinal tract and thus increase the number of bowel movements and reduce constipation, is recommended. However, they do not affect other symptoms of IBS. Macrogols can be used supportively in patients with IBS with constipation [3, 9, 18].

Soluble fibre

According to research, the use of a diet rich in soluble fibre or preparations containing it reduces general symptoms and brings improvement in patients with IBS. There are no clear recommendations on the amount of fibre, but the 2018 recommendations indicate the need for 10–25 g per day [9].

Symptomatic treatment

Pharmacological treatment is symptomatic, depending on the predominant complaints and types of IBS. The drugs used can be divided into several groups, and so we have: spasmolytics, drugs to stimulate intestinal peristalsis, antidepressants, rifaximin, laxatives, anti-diarrhoeals and drugs for bloating [3, 9]. In the type of IBS with pain and constipation, mebeverine, trimebutine, anticholinergic agents and drotaverine are proposed, in the diarrhoeal form – mebeverine, rifaximin, loperamide or cholestyramine (currently not available in Poland), in flatulence, often accompanied by SIBO (small intestinal flora overgrowth syndrome) – rifaximin, simethicone, dimethicone, and in patients with anxiety – anxiolytics, antidepressants, as well as psychotherapy and behavioural techniques [26].

IBS is a functional condition, dependent on abnormal bowel motility, resulting in disorders such as constipation, diarrhoea or flatulence, often with a strong emotional component. Disturbed bowel function can be regulated with the use of prokinetic and antispasmodic drugs, which are recommended in all types of IBS and include mebeverine, alverine, trimebutine or drotaverine and, occasionally, hyoscine [26]. The drugs listed are characterised by different effects on colonic motility. Mebeverine is a musculotropic spasmolytic with a direct and complex mechanism of action on gastrointestinal smooth muscles, acting by decreasing ion channel permeability (blockade of sodium channels and inhibition of intracellular calcium accumulation) and blocking norepinephrine reuptake, resulting in a local anaesthetic effect and an increase in water absorption, a beneficial effect in patients with a tendency to have loose stools [27]. Alverine

Table 1. Available prokinetic drugs according to their mode of action (according to available SmPCs)

The drug compared	Alverine	Mebeverine	Trimebutine	Drotaverine
Effect	• Strong spasmolytic effect (direct effect on smooth muscles and indirect through inhibition of the sympathetic nervous system) • has a strong effect on smooth muscles of blood vessels, gastrointestinal tract and urinary tract • modulates gastrointestinal motor function, irrespective of the functional status of the oesophagus, stomach and intestines.	• Musculotropic spasmolytic (direct effect on smooth muscles of the gastrointestinal tract) • complex mechanism of action by: reduction of ion channel permeability (blocking of sodium channels and inhibition of intracellular calcium accumulation), blocking reuptake of norepinephrine, • local anaesthetic effect and changes in water absorption.	Synthetic agonist of peripheral μ, δ and κ opioid receptors. Mechanism of action – direct effect on the smooth muscles of the gastrointestinal tract, regulation of motor dysfunctions without affecting the CNS. Due to its simultaneous effect on motor excitatory (μ and δ) and inhibitory (κ) receptors, it normalises gastrointestinal peristalsis disorders, depending on the functional status of the oesophagus, stomach and intestines.	An isoquinoline derivative with spasmolytic effects on smooth muscles, following inhibition of phosphodiesterase type 4 (PDE4) activity. Drotaverine is effective in the treatment of smooth muscle spasms of both nervous and muscular origin. Regardless of the type of autonomic innervation, it acts on the smooth muscles of the gastrointestinal tract, biliary tract, urogenital tract and cardiovascular system.

also has strong spasmolytic effects but through direct effects on smooth muscles and indirectly through inhibition of the sympathetic nervous system of the blood vessels, gastrointestinal tract and urinary tract [28]. The commonly used drotaverine has a spasmolytic effect on smooth muscles following inhibition of phosphodiesterase type 4 (PDE4) activity, which leads to their relaxation [29]. Trimebutine has a different mechanism of action. It is a synthetic agonist of peripheral opioid receptors μ, δ and κ. It exhibits direct effects on the smooth muscles of the gastrointestinal tract, regulates motor dysfunction without affecting the CNS, and the simultaneous effect on motor excitatory (μ and δ) and inhibitory (κ) receptors normalises peristalsis disturbances, depending on the functional status of the oesophagus, stomach and intestines [30]. The key characteristics of the drugs in question are summarised in Table 1.

The different targets of the drugs affect their mode of action and thus determine their effectiveness in treating specific symptoms of IBS. Thus, mebeverine has a spasmolytic effect with characteristics of water reabsorption and a local anaesthetic effect on the mucosa, but in some patients, this can promote constipation. Alverine has a strong spasmolytic effect without water reabsorption characteristics, and therefore it does not increase the tendency to constipation, but it lacks the local anaesthetic effect on the mucosa characterising mebeverine. If necessary, it can be used occasionally with other drugs, due to its different target (e.g. with trimebutine, mebeverine). It would seem that the combination of alverine with simethicone, which has an anti-bloating effect, is the perfect combination in the context of treating IBS symptoms, but this composition results in slower absorption of alverine from the gastrointestinal tract, thus – in a weaker final effect. Trimebutine, showing a dual mechanism of action, both stimulating and inhibiting peristalsis, works well in patients with constipation and those with a tendency to excessive intestinal spasms, but it also has the highest number of adverse effects and drug interactions. Drotaverine is indicated for alleviation of smooth muscle spasm; however, it has a supportive, not a therapeutic, effect, and unlike the other drugs, it is not recommended for continuous therapy, only occasionally, also as an add-on therapy to the drugs discussed earlier [18, 31–36].

Rifaximin is a eubiotic that regulates the composition of the intestinal microbiota by a direct mechanism (antimicrobially) and by modulating it, which, in terms of the functioning of the gut-brain axis, may be an important part of therapy. It does not disturb the overall composition of the bacterial flora, but only affects harmful bacteria (*Clostridium, Peptostreptococcaceae* and *Escherichia*). It has anti-inflammatory effects via the pregnane X receptor, immunomodulatory effects (stimulation of anti-inflammatory cytokines, inhibition of pro-inflammatory cytokines), reduces pathological enterocyte permeability and restores intestinal barrier tightness, which plays an important role in the treatment of IBS symptoms, especially with coexisting SIBO [37]. The advantage of rifaximin over other antibiotics is its local action in the gastrointestinal tract (it is not absorbed, acting only at the target site), but recently there have been reports of the lack of efficacy of rifaximin in sequential therapy, which is nevertheless linked to the acquisition of resistance by bacteria and its further consequences [38–40].

Despite the availability of many drugs, it is still difficult to treat IBS effectively. The changing spectrum of patients' complaints hinders effective management, so it is recommended to adjust it based on the current leading symptom (e.g. constipation, diarrhoea, flatulence). The exacerbated emotional and psychological component causes frequent spasmodic reactions, which is why there has recently been a strong emphasis on spasmolytic treatment. A systematic review by Polish authors was published in 2022 evaluating the efficacy of mebeverine as a spasmolytic drug in the treatment of IBS. In conclusion, mebeverine was found to be an effective and safe treatment in a wide range of patients suffering from abdominal pain, discomfort, distention, abnormal bowel movements and diarrhoea who did not meet the full Rome IV criteria for the diagnosis of IBS [34]. Previous systematic reviews on the efficacy and tolerability of mebeverine in the treatment of IBS confirm a beneficial effect, with good drug tolerance with adequate compliance when dosed twice daily [33]. The United European Gastroenterology and European Society for Neurogastroenterology and Motility guidelines for functional bowel disease state that spasmolytic drugs can reduce abdominal pain by reducing smooth muscle spasm with good drug tolerance and few adverse effects [18]. We should remember that pharmacological treatment should always be provided in parallel with non-pharmacological treatment, and in the group of patients who are particularly resistant to this management, it is worth considering psychiatric consultation or implementation of antidepressants and anxiolytics.

It is difficult to establish treatment regimens in the different types of the disease, especially as very often the symptoms change over time, and the patient may progress from the type with diarrhoea to the type with constipation or the undefined type. However, given the fact that we are guided in our treatment by the symptom that is dominant at the moment, it is possible to try to provide a structure to the proposals for the use of the available drugs in the relevant types of IBS [26].

The causes of the type with constipation can be dual – either excessive intestinal spasm blocking peristalsis – in which case a spasmolytic drug should be used (e.g. mebeverine, alver-

Table. 2 Suggestions for the use of drugs depending on the type of IBS	
Actions undertaken depending on type of IBS	**Suggestions for use of medicines**
IBS-C – 1) relax, loosen the bowels if a spasm blocking peristalsis is the cause, 2) stimulate if atonia is the cause (poor bowel function, poor peristalsis)	IBS-C – 1: mebeverine + alverine, drotaverine, occasionally hyoscine
IBS-D – calm, relax, slow down stimulated peristalsis	IBS-D: mebeverine, alverine, trimebutine to a lesser extent (also has a stimulating effect on the intestine, so it can exacerbate symptoms)
IBS-M – all of the above mechanisms	IBS-M: depending on the clinical picture, mebeverine, alverine, trimebutine can be used interchangeably (depending on the cause as in IBS-C, during periods of diarrhoea, as in IBS-D)
IBS-U – Variable cause, so different mechanisms	INS-U: every drug has an application

ine, drotaverine or hyoscine) or, conversely, weakened peristalsis and intestinal atonia; in this case, trimebutine may be useful due to its dual mechanism of action (stimulant and spasmolytic), to which spasmolytic drugs such as alverine, drotaverine or hyoscine may be occasionally added. The type with diarrhoea associated with accelerated intestinal transit usually requires quieting of peristalsis, slowing it down and relaxation of muscles, as well as a reduction in the amount of liquid content, so mebeverine (an additional feature of water reabsorption from the intestinal lumen in addition to relaxation of smooth muscles) should work well in this case and can be combined with other drugs if necessary. In this case, despite its dual mechanism of action (stimulant as well as inhibitory), trimebutine may increase the frequency of bowel movements and cause additional aggravation of complaints, so its use requires an individual decision based on clinical symptoms. The mixed type of IBS is the result of completely disturbed bowel function and an overlap of different abnormalities, so we are guided by the clinical picture, and all drugs can be used interchangeably, depending on the cause, both on the type with diarrhoea and with constipation. A similar situation applies to patients with the undefined type, where the dynamics of changes are quite high and result in frequent visits of the patient with various complaints. Table 2 summarises an example of management suggestions depending on the type of IBS and the mechanism of action of the drugs, which can be a practical guideline when trying to select individual therapy.

Antidepressants and the role of a psychiatrist in the treatment of irritable bowel syndrome

Any patient with chronic conditions should be assessed for mental health disorders. Recommended questionnaires for screening assessment are the Patient Health Questionnaire (PHQ-2) to assess symptoms of depression and the GAD-2 Questionnaire to assess symptoms of anxiety disorders [41, 42]. Such a procedure is indicated in order to exclude whether the patient's reported symptoms are psychosomatic and are not an example of "masked" depression (with vegetative symptoms) or anxiety disorders. On the other hand, such an assessment is purposeful, as anxiety symptoms are present in an average of 39% and depressive symptoms in 28% of IBS patients [43]. They not only exacerbate the symptoms of IBS but also cause additional suffering and a reduced quality of life.

If depressive or anxiety symptoms of mild severity are present, psychotherapy is the treatment of choice. However, in the treatment of moderate to severe depressive episodes or anxiety disorders, pharmacological treatment with antidepressants is additionally indicated. The main group of drugs used to treat depression and anxiety disorders are the serotonin reuptake inhibitors (SSRIs), namely citalopram and escitalopram, fluoxetine, fluvoxamine, paroxetine and sertraline. Unfortunately, drugs in this group can be poorly tolerated by patients with IBS because, through activation of serotonin 5-HT_2 and 5-HT_3 receptors, they cause gastrointestinal side effects in some patients [44]. It is then advisable to use antidepressants from other groups, with less effect on the serotonergic system, e.g. serotonin and norepinephrine reuptake inhibitors (duloxetine and venlafaxine), norepinephrine and dopamine reuptake inhibitors (bupropion), norepinephrine reuptake inhibitors (reboxetine) and, for the most part, the best-tolerated receptor drugs (agomelatine, mianserin and mirtazapine, trazodone, vortioxetine) in IBS patients. The latter group of drugs is also indicated in patients with IBS co-occurring with insomnia. For some patients who poorly tolerate antidepressants, the use of some low-dose antipsychotics, such as sulpidide, is beneficial. Consultation with a psychiatrist is helpful when selecting pharmacological treatment for patients who are unable to tolerate SSRI drugs. In order to convince the patient to have such a consultation, it is worth pointing out that in the case of somatic diseases that are difficult to treat, both gastrointestinal disorders and pain syndromes, for example, it is helpful to include an antidepressant. It is precisely for the purpose of introducing such treatment that the primary care physician may want to consult a psychiatrist.

Difficulties in diagnosing and treating IBS in the primary care physician's office

In their daily practice, general practitioners (GPs) very often encounter many difficulties both in the diagnosis and in the treatment of IBS. Undoubtedly, one of the main problems is the non-specific clinical manifestations of the disease, which can make it difficult to make a proper diagnosis. In addition, there is a lack of appropriate diagnostic tools – specific tests for IBS, or funding for tests recommended in the differential diagnosis (e.g. faecal calprotectin, lactoferrin, etc.) and, finally, the frequent underestimation of clinical symptoms by patients. Insufficient time in the doctor's office to fully discuss all aspects of the disease with the patient is also a problem. When it comes to treatment, doctors are often confronted with patients' reluctance to comply with non-pharmacological recommendations (physical activity, changes in eating habits, etc.) or even pharmacological recommendations. Inadequate self-medication, often used by patients, which often not only does not help but may even harm their health, is also a huge challenge. Finally, the lack of willingness of patients to undergo psychotherapy and possibly implement antidepressants.

Conclusions

In the diagnostic and therapeutic process, a primary care physician plays an invaluable role, and his or her task is not only to make an accurate diagnosis but also to initiate treatment and educate the patient. Unfortunately, in daily practice, primary care physicians may encounter numerous difficulties. In addition, there are no specific tests to diagnose the disease and the fact that the set of tests available in primary care does

not include those recommended for differential diagnosis, such as calprotectin levels, faecal lactoferrin, breath tests or, finally, total IgA and anti-tissue transglutaminase (anti-TG) antibodies. Thirdly, patients show a negative attitude towards therapy, a reluctance to change their eating habits and undertake regular physical activity, as well as their bias towards psychotherapy and the use of antidepressants for bowel disorders.

To summarise, irritable bowel syndrome is a huge health problem for people all over the world, especially young adults. The basis for diagnosis is a medical history and physical examination, and the diagnosis of the disease is made on the basis of the clinical picture and the exclusion of organic disorders. In most cases, a patient with irritable bowel syndrome can be safely and effectively treated by a primary care physician, with the possible support of doctors of other specialities: gastroenterologists, psychiatrists and, in the initial stages, of a pharmacist. Non-pharmacological management, including diet, physical activity and psychotherapy when indicated, is the basis of treatment. Pharmacological treatment should be symptomatic, targeting the predominant complaints and types of IBS, and we can reach for spasmolytics, drugs to stimulate intestinal peristalsis, antidepressants, rifaximin, laxatives, antidiarrheals and drugs for bloating, probiotics and herbal medicines, e.g. peppermint oil.

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Tables: 2
Figures: 1
References: 44

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Address for correspondence:
Mateusz Babicki, MD, PhD
Katedra i Zakład Medycyny Rodzinnej
Uniwersytet Medyczny
ul. Syrokomli 1
51-141 Wrocław
Polska
Tel.: +48 713255126
E-mail: ma.babicki@gmail.com