Chapter 5
IBS Patient's Guide

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Abstract In this chapter, we will discuss the role of intestinal microbiota, lifestyle and eating habits in IBS patients. Before pharmacological treatment patients should consider changing lifestyle and diet, as they may be potential triggers for IBS symptoms. We will indicate which daily products are proper and which should be avoided by IBS patients because of exacerbation of disease symptoms. We will shortly describe how to lead healthy life and what the impact of physical activity on IBS symptoms is. We will explain that control, but not treatment, is the key management concept in IBS patients. Finally, we will define psychological aspects of IBS development and how important is to maintain psychological homeostasis. The continuous control of the doctor and regular good contact between the doctor and the patient play an important role in the disease remission.

Keywords Diet · Fodmap · Lifestyle · Intestinal microbiota · Physical activity

Abbreviations

FODMAP	Fermentable oligosaccharides, disaccharides, monosaccharides, and polyol
GI	Gastrointestinal
IBS	Irritable bowel syndrome
IBS-C	Constipation-predominant-irritable bowel syndrome
IBS-D	Diarrhea predominant-irritable bowel syndrome
SIBO	Small intestinal bacterial overgrowth

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5.1 Intestinal Microflora

In the GI tract, we have more bacteria than cells in our entire body. Up to 1000 different microorganisms colonize the intestinal tract making about 2 kg of the body weight [1]. *Firmicutes* and *Bacteroidetes* are the major beneficial bacteria found in the GI tract of healthy people. Intestinal microbiome is specific for each individual and influenced by the genetic and environmental factors. The type and number of microbiota are also depended on—among others—age, gender and geographical origin.

Intestinal microbiota play many important roles in human health. They participate in food digestion, drug metabolism, detoxification and vitamin production. Intestinal microbiota regulate gut permeability and motility. Moreover, they have an impact on the integrity of the GI mucosa, immunomodulation (through prevention of pathogen colonization) and visceral sensitivity [2].

The changes in the intestinal microbiome are combined with the development of post-infectious IBS subtype. *Campylobacter*, *Escherichia coli*, *Salmonella*, *Shigella* and *Yersinia* are bacterial species involved in the development of infectious enterocolitis or gastroenteritis [3]. The prevalence of IBS after bacterial infection is 6–7 times higher than in patients without an infection episode [4]. The severity of infection increases the risk of disease development, for example diarrhea which lasts more than 7 or 21 day is associated with 2- or 3-fold higher risk of IBS development, respectively. Furthermore, the risk of IBS development is elevated for at least two years after infection.

Little is known about small intestine microbiome and its involvement in the course of IBS, mainly due to unavailability of small intestine tissues for basic research [5]. The small intestine contains a much lower density of bacteria than the colon in healthy subjects. Consequently, the small intestinal bacterial overgrowth (SIBO) may have an impact on IBS development and disease syndrome exacerbation. SIBO is a disorder of excessive growth of bacteria in the jejunum, which are typical in the colon. SIBO causes malabsorption and digestion problems. Patients with SIBO may have an increased amount of gases inside the intestine, what may result in abdominal pain, bloating and altered bowel function [6]. Chung et al. [7] found that IBS patients had higher abundance of *Veillonellaceae* and *Prevotellaceae*, but lower abundance of *Mycobacteriaceae* and *Neisseriaceae* in the small intestine. The ratio of *Firmicutes* to *Actinobacter* in IBS-A patients was approx. 9-fold (17.42/2.0 %) higher than in controls. Moreover, the ratio of *Firmicutes* to *Bacteroidetes* in the stool of IBS-D patients was 3-fold higher than healthy volunteers. In contrary, in a Swedish study no difference in small intestinal microbiota between IBS patients and healthy subjects was evidenced [8].

Further research is still needed to include or exclude the role of altered small intestinal microbiome in IBS. The differences in small intestinal microbiota found in many studies may result from geographical origin or the diagnostic tests used. Unfortunately, small intestinal microbiota can be measured only indirectly—by glucose hydrogen and lactulose hydrogen breath tests [9]. Currently available

diagnostic tools should be improved and more standardized (for example: differences occur in the content of microbiota in the ileal effluent even in the same patient during the day) or novel assays should be engineered.

More is known about microbiota in the colon, where the studies are mainly based on the analysis of fecal samples. Luminal bacteria participate in digestion and modulation of the host immune system through their metabolites. *Bifidobacteria* and *Lactobacilli* are the major beneficial microbiota in the colon and in IBS patients a decreased number of these bacteria in comparison to healthy volunteers has been noted [10]. The decrease in *Bifidobacteria* and *Lactobacilli* impairs the GI homeostasis and may cause the mucosal inflammation in the GI tract [11]. There is also a difference in the abundance of *Enterobacteriaceae* species in fecal samples from IBS patients. For example, the populations of *Eubacterium—Clostridium coccoides* group, *Coprococcus, Collinsella, and Coprobacillus* species are altered in IBS patients [12]. The strains of *Veillonella* spp. are significantly increased in IBS-C patients [13].

There is a growing evidence that altered microbiome in the intestinal mucosa may also be implicated in IBS development. Mucosal bacterial make up differs from that of the fecal microbiome. The major role of the intestinal mucosa is to maintain a non-inflammatory state despite the presence of numerous microbiota in the intestines. In the colonic mucosa, the bacterial composition in IBS patients varies from healthy controls, for example an increased number of invasive bacteria, e.g. *Pseudomonas aeruginosa* and *Campylobacter jejuni* was noted.

Food intake also changes the composition of intestinal microbiota [14]. For example, the protein and animal fat consumption have been associated with the domination of *Bacteroides* enterotype, while a high carbohydrate intake was combined with the increase of *Prevotella* enterotype [15].

The other way to modulate gut microbiota is application of probiotics, prebiotics, synbiotics and antibiotics. All these are potential therapeutic options in IBS.

Probiotics are live microorganisms intended to provide health benefit for the host [16]. Probiotics include *Bifidobacterium* and *Lactobacillus*, lactic acid bacteria (*Lactococcus*, *Streptococcus*), organisms of the genera *Bacillus*, *Bacteroides* and *Enterococcus* [17]. The use of probiotics such as *Bifidobacterium* spp. and *Lactobacillus* spp. has been shown to have a positive effect on IBS symptoms [18]. Probiotics stimulate goblet cells to mucus production, what reduces visceral hypersensitivity, enhances the intestinal barrier function and normalizes bowel movements [19]. It was showed that probiotics exert beneficial effects to the host; however, they can act as a double-edged sword with both negative and positive effects. Therefore, precaution is necessary before the probiotic administration and during their long term usage the patient should be under control of the doctor [20].

Prebiotics are typically non-digestible carbohydrates, for example oligosaccharides: inulin, fructo-oligosaccharides, galacto-oligosaccharides and lactulose, which are fermented by bacteria with potential benefit to the host. Prebiotics affect mainly *Lactobacilli* and *Bifidobacteria*, because of selective stimulation of their growth [17]. Consumption of a certain prebiotic, trans-galactooligosaccharide for 4 weeks improved IBS symptoms and increased fecal *Bifidobacterium* spp. and

Eubacterium rectal/Clostridium coccoides ratio. Moreover, this prebiotic decreased the proportion of the *Clostridium perfringens–hystolyticum* and *Bacteroides/Prevotella* spp [21.] Prebiotics are present in leeks, asparagus, garlic, artichoke, onions, wheat, bananas, oats, and soy beans [22]. The consumption of prebiotics increases tolerance for high FODMAP food and adding regular exercise improves the beneficial effects of such diet [23].

Synbiotics are a mixture of selected probiotic strains and compatible prebiotics. For example, a synbiotic containing *Lactobacillus paracasei* and a prebiotic mixture improved the number of bowel movements, abdominal pain and IBS score in IBS-D patients. Well-being was also improved [24]. Another symbiotic mixture, containing lyophilised bacteria (*Lactobacilli*, *Bifidobacteria* and *Streptococcus thermophilus*) and inulin has shown a beneficial effect in alleviation of flatulence severity in IBS patients, but it failed to achieve an improvement in abdominal bloating [25].

Antibiotics are used in IBS therapy to treat imbalanced intestinal microbiota. Neomycin and rifaximin were broadly tested in clinical trials in IBS therapy. Neomycin was more effective than placebo in reducing IBS symptoms, but its action was combined with numerous side effects. There was a significant reduction in abdominal pain, dysfunctional defecation, bloating and abdominal discomfort in those IBS patients who received rifaximin compared to placebo. However, repeated administration of antibiotics in IBS therapy still remains controversial and should be under continuous control of the doctor.

Fecal microbial transplantation (FMT) is a novel approach to modulation of the gut microbiota, particularly in dysbiosis [26]. The role of FMT is reintroduction and re-establishment of a stable community of microbiota from a healthy donor to IBS patient. The scientific data about FMT are confusing, therefore it is not a standard anti-IBS therapy and it still needs to be improved.

5.2 Diet and Lifestyle

5.2.1 Diet

Diet is important in our daily life, we should choose appropriate food products consciously, because of their continuous impact on our health. Starting the day with big healthy breakfast, which should the most important meal gives a lot of energy for the whole day. We should also take care about lunch—forget about processed food and snacks. Dinner should be eaten not just before going to bed, but reasonably early (at least 3 h earlier). Finally, we should use to drink two liters of water per day. We know it all, but reality is different. Remember, not only food consumption, but also irregular and improper eating habits represent an important issue in our diet. Eating is not only about satisfying hunger—meals should not be eaten in a hurry—but constitute a part of the day (consumption with friends or family, not alone or in front of TV).

Diet has still not been proven as a cause of IBS or implicated in disease development. However, there are many clinical studies indicating that adequate diet may have an impact on attenuation of IBS symptoms—mainly abdominal pain, disturbances in GI motility and flatulence, which are significantly involved in decreased quality of life in IBS patients [27]. IBS patients had significantly more irregular meal habits and skipped meals (which caused a loss in gastro-colonic reflex and restrains defecation) than healthy individuals [28, 29].

It was found that IBS patients complained after certain food products; GI disturbances were reported within 15 min in 28 % and within 3 h in 93 % of patients [30]. Moreover, it was also revealed that 60 % of IBS patients exclude some food from diet, because of more severe disease symptoms [31]. Nanda et al. found that onions, garlic, paprika, beans, peas and chocolate are the most common food products incriminated by IBS patients [32, 33]. Also, an acute chili ingestion aggravated abdominal pain and burning symptoms of IBS [34]. Furthermore, rice and wheat have been combined to bloating and diarrhea [30]. In contrary, higher consumption of canned food, processed meat, confectionary, chocolate and herbal tea was noted in IBS patients. It was also revealed that mean intake of protein and salt was higher in IBS patients than the recommendations [35]. Interestingly, women reported more intolerable food items than men [36]. Women with IBS ate less fish, fruit, milk, and green-yellow vegetables than men with IBS and healthy individuals [29]. All these data strongly support the hypothesis that better understanding of food intake and dietary management may constitute a tool for controlling IBS course [37].

A first step to improve IBS symptoms using non-pharmacological tools is the avoidance of fat and highly processed food. Fast food, potato chips, popcorn and fried foods may interfere with the intestinal movements and may result in symptoms such as constipation and diarrhea. After high fat meal IBS patients more frequently complain about fullness, bloating and nausea than healthy people.

Next step is the reduction of alcohol and caffeine consumption, because they were found to have an impact on abdominal pain or discomfort, bloating or change in bowel habit for at least 6 months [38].

The traditional American and European diet is not rich in fiber, therefore many physicians advise fiber supplements for abdominal pain reduction and altered GI motility in IBS patients. Fiber is any food which is not absorbed and broken down through the GI tract. There are two types of fiber: soluble (present in whole grains, wheat born) and insoluble depending on their interaction with water, and further classified into highly, intermediate, minimally or non-fermentable fiber (present in dried beans, peas).

Fiber starts to be digested in the large intestine to short-chain fatty acids (SCFA) and gases. Probably through SCFA production fiber increases the luminal osmotic load, attracting water, and has an impact on the microbiome resulting in an increased biomass [39]. Consumption of food containing fiber causes changes in colonic pH, an increase in stool bulk, acceleration of the whole GI transit and decrease of intracolonic pressure [40]. Reduced amount of pressure that bowel uses to move intestinal content may also cause alleviation of abdominal pain. Fiber

consumption is recommended mainly in IBS-C patients, but it can be also helpful in IBS-D patients to firm up loose stools.

Eating of 20–30 g of fiber per day is sufficient and is defined as high fiber diet. To increase the content of fiber in diet, a lot of fruit (banana, blueberry, figs, kiwi, mango, orange, cherry) should be eaten. Another suggestion is to add dried peas, beans, whole grains to starters, soups and main dishes. High fiber should be associated with increased drinking of water or other healthy drinks (smoothie, fresh juices).

For IBS patients, it is recommended to try diet rich in fiber food, but carefully. If too much and too often fiber food would be added to their diet, it can escalate symptoms of the disease. Flatulence, bloating and abdominal pain are the most frequent IBS symptoms, which can be affected by high fiber diet [40, 41]. Flatulence is an individual feature and it should be carefully observed by the patient if gas production increases after certain food. There are fruits and vegetables rich in fiber, which increase production of gases, therefore should be avoided by IBS patients (most common listed in Table 5.1). In contrary, meat, fowl, fish, rice are the products with high content of fiber, but which do not cause excess production of gas.

A new trend in diet in IBS patients is reduced consumption of fermentable oligosaccharides, disaccharides, monosaccharides, and polyol (FODMAP) [42]. FODMAP food include products with high amount of fructose (pears, apples), oligosaccharides including fructans (wheat and onion), galacto-oligosaccharides (legumes: kidney beans and chickpeas) and sugar polyols such as sorbitol, xylitol or mannitol (artificial sweeteners) [43, 44]. Almost all of the highly processed food (main dishes, fast food and sauces) contain FODMAP.

FODMAPs are present in grains, some dairy products - milk, sour cream (with lower content of fat), kefir, yogurt, butter, some cheeses. Onions, garlic, asparagus, beets, leeks, broccoli, cauliflower, Brussels sprouts, chicory, fennel are rich in FODMAPs. Peaches, avocados, nectarines, plums, cherries, watermelon, melon, blackberries, lychee, mango, guava, papaya, avocado contain FODMAPs in high concentrations. Moreover, honey and liqueur wines also include FODMAPs.

Lethargy, increased GI symptoms (bloating, abdominal pain, passage of wind and dissatisfaction with stool consistency) and higher levels of breath hydrogen are produced on high FODMAP diet [45].

Table 5.1 Fruits and vegetables with high fiber content

Gas-producing food with high fiber content		Less gas-producing food with high fiber content	
Vegetable	Fruit	Vegetable	Fruit
Broccoli	Apple	Apricot	Carrots
Brussels sprout	Grape	Pineapple	Corn
Cauliflower	Banana	Berries	Green
Cabbage	Raisin	Orange	Tomato
Cucumber	Prunes	Peach	Spinach

A low FODMAP diet could help decrease the distention caused by both the osmotic effect of FODMAPs and gas production resulting from its fermentation in the colon [46]. Moreover, lowering FODMAP consumption clearly reduced the relative abundance of all intestinal bacteria [27]. Of course, it is impossible to rule out FODMAPs from diet, but all these benefits indicate that it should be under consideration of IBS patients to minimize the FODMAPs consumption. Citrus fruit (oranges, lemons, limes, grapes) and forest fruit (cranberries, blueberries, raspberries and strawberries) are suitable for IBS patients on low FODMAPs diet. Vegetables which can be consumed are potatoes, peppers, carrots, cucumbers, zucchini, tomatoes, radishes, sweet potatoes, bamboo sprouts, olives, Chinese cabbage, and lettuce. Thyme, rosemary, basil, ginger, mint and oregano are herbs and spices which should enrich main dishes. Fruit and vegetables with high and low FODMAP content are listed in Table 5.2.

Gluten-free food should be introduced to the diet instead of wheat products. Wheat could be successfully replaced by spelt, which is known to contain fewer galactans and fructans than wheat and therefore not to produce frequent IBS symptoms [47]. It was evidenced that gluten-free diet improved IBS symptoms [48]. Patients with IBS-D, who received gluten-free diet (bread and muffin without gluten) reported a significant improvement in the following symptoms: pain, bloating, stool consistency, and tiredness as compared to IBS-D patients who ingested gluten (bread and muffin, 16 g gluten per day) [49].

IBS patients often complain due to lactase deficiency. Lactase is an enzyme involved in digestion of lactose—sugar in milk. The most common symptoms of this ailment include cramping abdominal pain, bloating, flatulence, diarrhea and nausea. IBS patients with lactase intolerance should avoid high-lactose food: dairy products: milk, sour cream, cheese (also cottage cheese, ricotta, spread cheese) and ice cream. However, they should remember that dairy products are a big source of calcium, potassium, magnesium, vitamin A, vitamin B2, vitamin B12 and other microelements and therefore they risk the development of these nutrient deficiencies. Vitamins and microelements should be replaced in other food products or supplemented [50].

Fructose malabsorption should be considered in the handling of patients with IBS complaints. Fructose reduced diet should result in lower fructose intake (less than 2 g per meal) and allow IBS symptoms improvement [51].

Table 5.2 Fruit and vegetables with high and low FODMAP content

High FODMAP content		Low FODMAP content	
Vegetable	Fruit	Vegetable	Fruit
Asparagus	Apple	Carrot	Banana
Garlic	Pear	Celery	Raspberry
Cabbage	Mango	Lettuce	Strawberry
Onion	Watermelon	Corn	Orange
Pea	Nashi pear	Tomato	Grape

Box 5.1 Diet recommendations
What to avoid:

- overeating
- high-fiber food
- high-FODMAP food
- dairy products
- artificial sweeteners
- fried and processed food
- chocolate
- carbonated beverages
- alcohol
- caffeine
- white bread
- red meat
- spicy food
- onion

Recommendations:

- increase fluid intake
- drink warm or hot drinks
- drink small amounts of alcohol (only during dinner)
- drink a lot of herbal tea
- eat slowly and regularly
- eat low-FODMAP food
- eat low- to medium-fiber food
- forget about processed food
- eat dinner 3 h before sleep

5.2.2 Obesity

The correlation between IBS development and obesity is not clear and not confirmed in big scale clinical trials. Data are conflicting—in one study an association between low body mass index and IBS has been found [52], while in another study it was evidenced that most IBS patients are normal-weight or overweight [53]. High-fat diet has been shown to have an impact on the intestinal microbiota and thus may contribute to more severe IBS symptoms in obese patients.

5.2.3 Alcohol Consumption

The consumption of alcohol, mainly wine and beer, was also described as a factor involved in the exacerbation of disease symptoms, and therefore it should be avoided [54]. Finally, alcohol drinks with carbonated beverages (sweetened with mannitol or sorbitol) should also be excluded from diet, because they facilitate gas production [33].

5.2.4 Social Life

IBS is a chronic and relapsing disorder and its symptoms decrease patients' quality of life. Disease symptoms often complicate outgoing lifestyle of patients; patients often avoid friend appointments—especially in the restaurants. This uncertainty of when and where disease symptoms may occur can cause fear when patient is away from home. Moreover, they feel psychical discomfort because of lack of easy access to toilet during friend meetings [55].

5.2.5 Physical Activity

Active lifestyle and physical activity should be pivotal from early years to adult. People who practice sports are more conscientious as compared to inactive ones. Moreover, systemic trainings can help to maintain regular life style. There is an increased risk of IBS development in physically inactive people. It was noted that physically active IBS patients reported not so severe disease symptoms as compared with physically inactive patients [56]. For example, active women were less likely to report a feeling of incomplete evacuation than inactive ones. Moreover, daily exercise can help to maintain good intestinal function, prevent bloating and are effective in relieving constipation [57]. Finally, daily exercise can improve mood and symptoms of fatigue, which are also more frequently noted in IBS patients [58].

Yoga is recommended in IBS patients, because it combines physical postures, breathing exercises and meditation or relaxation. Yoga can have beneficial effects on the emotional and the physical symptoms of IBS, thus can help to cope with stress. However, yoga is safe only when practiced appropriately.

Not all the patients are satisfied after training—in some IBS patients strenuous exercise may act on the intestines as a stressor. Therefore it should be taken into consideration whether increased physical activity will help to alleviate or exacerbate IBS symptoms [59].

5.2.6 *Sleep Disturbances*

Sleep is a time needed for regeneration after day full of work; sleep and dream disturbances influence IBS symptoms [60]. For example, the history of being psychologically abused and less than 6 h of sleep are combined with more severe disease course and fear of symptoms exacerbation. The time of sleep for IBS patients should be longer than 6 h. Patients should also take care about quality of their dream, for example last caffeine beverage should be drunk 4 h before bed time. Moreover, an important issue is the maintenance of bed time frame (both in the evening and in the morning). Bed should be used only for sleeping or sexual activity, not for eating, watching TV or book reading. One of the possible solutions to improve quality of sleep is relaxation exercise or yoga. In IBS patients regular napping periods during the afternoon should be avoided since lethargy further aggravates IBS symptoms.

In conclusion, regular exercise, smoking cessation, abstinence from alcohol, and maintenance of regular eating habits can be easily achieved by IBS patients in daily life without their doctor's assistance and should be the first approach in IBS management.

5.3 Psychological Aspects and Treatment

The term "brain-gut axis" refers to the bi-directional communication between the gut (enteric nervous system) and the central nervous system. Brain-gut axis plays a crucial role in gut function modulation in health and disease (Fig. 5.1). The human *psyche* is affected by many factors, including personality features, altered health beliefs, coping skills and psychological factors. They all have impact on the motor, sensory, secretory and immune functions of the GI tract through the brain-gut axis [61].

Anger proneness and expression style may be associated with pro-inflammatory processes and visceral hypersensitivity that contribute to IBS signs and symptoms [62]. Patients with IBS had significantly higher levels of trait anger than healthy subjects [63]. The trait anger represents a stable dispositional feature and includes a general predisposition to become angry.

IBS symptoms have impact on daily function, thoughts, feelings and behaviors because of the impression that disease symptoms can be aggravated anytime. Moreover, IBS patients indicate that they lost sense of freedom, social contacts, but gained feelings of fearfulness and embarrassment due to frequent visits in the toilet [62].

Patients with IBS are more likely to be psychiatrically ill (panic, anxiety, mood disorders, depression and post-traumatic stress disorder) than the general population [35]. On the contrary, people who are more prone to fear, anxiety and affective disorders more frequently suffer from IBS symptoms [64]. Depression constitutes

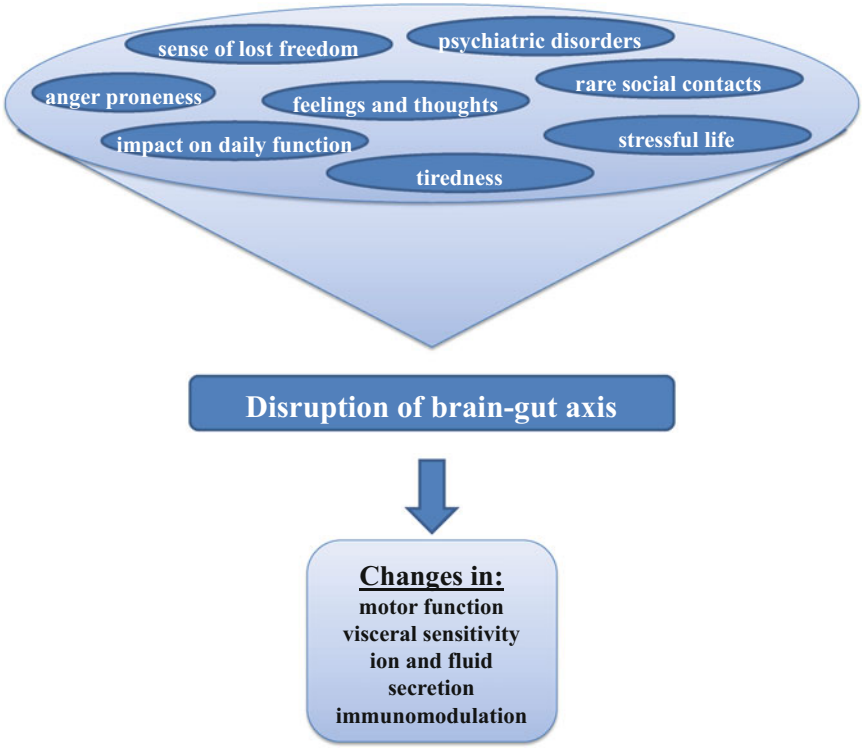

Fig.5.1 Brain-gut axis

risk factor for the development of IBS and is the most common psychiatric disorder diagnosed in IBS patients [65].

Social problems, tiredness, dizziness, excitedness, and excessive use of health care services (including alternative medicine) occur more frequently in IBS patients as compared to healthy individuals [66]. Moreover, worrisome and stressful life events have been reported to be associated with more severe IBS symptoms [67]. The major life events (divorce, unemployment, death of a relative) or social events (social changes, revolution) influence IBS [61]. There is apparent correlation between stress loading and exacerbation of GI symptoms in IBS patients [68]: when psychosocial stress was loaded on IBS patients in an examination room, GI transit was accelerated, as determined by measurement of colonic manometry [69].

Currently available therapeutics used in IBS therapy that target psychological disturbances include anxiolytic agents and antidepressants [70]. The mechanism of antidepressants action involves their participation in pain modulation (peripheral analgesic effect), improved quality of sleep, and regulation of GI motility [71].

Non-pharmacological forms of psychological treatments used in IBS therapy include psychotherapy (cognitive-behavioral therapy), relaxation therapy and hypnotherapy [72]. Gut-directed hypnotherapy improves IBS symptoms, mainly

abdominal pain, and quality of life [73]. The mechanism through which hypnotherapy alleviates IBS symptoms is still unclear, but it was postulated that rectal sensitivity to distension is decreased. The major limitation of hypnotherapy is low number of qualified therapists and high costs of visits [74].

The choice of treatment depends on the patient requirements, available resources, and the experience of the doctor.

5.4 Co-operation Between the Doctor and the Patient

Only one third of IBS patients search for advice from a family physician or an internist. Most of IBS patients do not consider their symptoms serious enough to consult the doctor and try to lead own control of the disease and therapy. They often receive medical information from the Internet, brochures and books and from a nurse. Only when IBS symptoms are exacerbated, they look for help from the gastroenterologist.

Patients with IBS often think that they are insufficiently informed in relation to risk of serious GI diseases and the role of diet in the course of IBS [75]. They have a feeling that doctors do not listen to them or do not understand their illness experience. Moreover, IBS patients feel only partially satisfied with their information about disease as compared to patients with diabetes mellitus, hypertension or heart disease [76]. Consequently, a detailed and comprehensive explanation of the disease should be the first step in communication with IBS patient. Education is a very important part of IBS treatment—for example, it was evidenced that IBS patients who participated in psychoeducational program reported improvement in symptoms severity and quality of life [77].

After diagnosis, IBS patients should realize that IBS is a chronic incurable disorder and being under continuous control of the doctor is extremely important (even in relapsing periods of IBS), not only when they have symptoms exacerbations and need a quick help.

Doctor consultation should be the first line of choice in the management of IBS, mainly because of health professional's knowledge, experience and ability to notice other characteristics that IBS patient exhibit, e.g. anxiety or depression. Regular appointments with a doctor is a key to effective therapy in IBS. The information obtained during examination is on both sides—patient's and doctor's [78]. The patient should ask the doctor about all deliberations according to proper lifestyle without any embarrassment. The doctor should ask about disease symptoms and their severity, including frequency of defecations, relief after defecation, abnormal stool, blood in stool and presence of nausea or flatulence (Table 5.3).

Doctor can ask about a brief dietary history, any associated factors (like daily obligations, stressors, sleep disturbances, used drugs). It can help to identify dietary and/or other factors that may have an impact on disease course.

Doctor should be focused on patient concerns and expectations of therapy. Doctor should observe or ask about warning symptoms, such as unexplained weight

Table 5.3 Questions which need to be answered during the visit

Issues addressed during appointment	
Doctor's side	Patient's side
Do you feel satisfied with current drugs and treatment or you want to discuss it?	Could I have other GI disorders?
Were there any stressful situations since your last visit?	Do I lead a proper life style? Do you recommend any changes?
What about severity of symptoms? Improvement of exacerbation?	Can physical activity help in symptoms improvement?
Brief dietary history	Are there any other possible therapies?
Do you have problems with sleep?	What about traditional medicine?
Psychological aspects of IBS	Do I need psychiatric consultation?
Do you use regularly any other drugs?	Which food should I avoid?

loss, progressive or unrelenting pain, GI bleeding, longitudinal diarrhea during consultation. In particular, any patient older than 50 years of age should undergo a detailed examination to confirm the absence of a colon cancer.

The preservation of warmth and empathy between doctors and their patients will make an important contribution to improved quality of life of patients instead of a brief doctor visit (only for prescription). It has been also demonstrated that patients who see the same doctor during consecutive consultations are less anxious and simultaneously more satisfied with their treatment process.

Patient knows everything about his/her body, therefore can determine if the current therapy brings satisfying benefits. If they do not feel any improvement in health, possibilities of alternative treatments should be broadly discussed—including changing lifestyle, conventional treatments (e.g. suppositories, creams, heat pad) and alternative modalities (e.g. hypnotherapy, acupuncture, homeopathy).

Doctors should remind their patients that they should not forget to lead a normal social life and try not to think negatively about the disease. The doctor should ask about daily life—sport activities, sleep quality, stressful events. Moreover, the doctor should ensure the patient that social contacts are pivotal—patients should benefit from being with family and friends—not staying at home. Finally, IBS patients should take short holidays few times a year. Being outgoing and active seems to bring a lot of benefits for them.

As mentioned above, IBS is combined with brain-gut disturbances, and psychiatric diseases are more frequently noted in IBS patients. The doctor should observe IBS patient and react when any additional help from a psychiatrist is needed. Many doctors refer IBS patients to psychological and psychiatric clinics, but they sometimes do not realize that it may paradoxically further escalate patient's confusion and frustration. Sometimes it is better to just listen to the patient's needs.

In conclusion, most IBS patients benefit from a therapeutic relationship with the doctors. An experimentally applied supportive patient-doctor relationship significantly improved symptoms and quality of life in IBS [79]. The establishment of a positive patient-doctor relationship reduces the number of appointments (which

should stay regular) and improves long-term therapy, although it has not been confirmed in any clinical trials, mainly because of the nature of the intervention [80, 81].

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