

# Management of Irritable Bowel Syndrome in the Elderly

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## ABSTRAK

*Sindrom usus iritabel (irritable bowel syndrome/IBS) merupakan salah satu kelainan gastrointestinal fungsional yang paling sering dijumpai pada lansia. IBS ditandai dengan adanya sakit perut disertai dengan perubahan kebiasaan buang air besar tanpa adanya patologi organik yang spesifik. Diagnosis IBS umumnya ditegakkan berdasarkan kriteria klinis. Saat ini, kriteria Roma III merupakan kriteria terpilih untuk mendefinisikan IBS. Namun, penuaan itu sendiri merupakan salah satu dari gejala alarm pada diagnosis IBS yang memerlukan pengawasan lebih lanjut. Oleh karena itu, eksklusi terhadap keberadaan penyakit organik, dengan menggunakan pendekatan-pendekatan tertentu, merupakan sebuah hal yang sangat penting untuk diterapkan pada pasien lansia. Umumnya, terapi IBS pada lansia tidak berbeda dengan populasi yang lebih muda. Tetapi, dibutuhkan perhatian dan pertimbangan yang lebih besar sebelum memberikan terapi dengan obat-obatan dikarenakan adanya perubahan pada rasio resiko-manfaat pada lansia. Sejumlah studi telah menunjukkan bahwa terdapat hubungan yang kuat antara IBS dengan kondisi psikiatri. Maka, tatalaksana psikologis juga harus diberikan di dalam manajemen IBS pada lansia.*

**Kata kunci:** sindrom usus iritabel, lansia, manajemen.

## ABSTRACT

*Irritable bowel syndrome (IBS) is one of the most commonly encountered functional gastrointestinal disorders in the elderly. IBS is characterized by abdominal pain and altered bowel habits in the absence of specific organic pathology. The diagnosis of IBS usually depends primarily on established clinical criteria. Currently, Rome III criteria are the criteria of choice for defining IBS. However, aging itself is categorized as one of the alarm symptoms in the diagnosis of IBS that may warrant further investigation. Therefore, exclusion of organic diseases, using several investigations, is of paramount importance in the older patients. In general, the treatment of IBS in the elderly is not different from the younger populations. However, greater caution needs to be considered before treating with drugs because of the altered risk-benefit profile in the elderly. Several studies have shown a strong relationship of IBS with psychiatric conditions. Thus, psychological treatments should also be considered in the management of IBS in the elderly.*

**Key words:** irritable bowel syndrome, elderly, management.

## INTRODUCTION

Irritable Bowel Syndrome (IBS) is frequently occurred in the clinical practice. IBS is considered as a functional disorder, since the presence of IBS is not associated with any organic abnormalities, either structural or biochemical. IBS can be assessed by symptom-based diagnostic criteria, which is known as the Rome criteria. Currently, Rome III diagnostic criteria has been used widely in establishing the diagnosis of IBS. In the absence of any alarm symptoms, including weight loss, as well as gastrointestinal bleeding, the criteria are highly predictive in defining IBS.<sup>1</sup>

The age at onset of IBS is varied. An onset after the age of 65 years (elderly) is extremely rare, as in most cases, the incidence increases during adolescence and young adulthood. However, since aging is associated with an increased risk of having any organic abnormalities, the management of IBS in the elderly is more difficult and complicated, when compared to the management of IBS in the younger populations. This review article focuses on the approach and treatment of IBS in the elderly.<sup>1</sup>

## EPIDEMIOLOGY

Recent epidemiologic studies suggest that the prevalence of IBS in the elderly is similar to that in younger persons. Other studies have suggested that the prevalence of IBS in older persons is approximately about 10%-20%, predominantly occurred in women, with a ratio of 2 : 1. However, studies conducted in India have shown a different fact, that IBS is particularly frequent in men. The reasons of these contrary results are still unknown.<sup>1,2</sup>

## PATHOPHYSIOLOGY

A number of mechanisms have been proposed in explaining the pathophysiology of IBS. However, the exact mechanism is still unknown. Some recent studies have demonstrated that IBS is likely caused by an interaction of multi-factorial etiologies. It should be noted that the pathophysiology of IBS, which was proposed by recent studies, is conducted in young-adult populations. Thus, further studies are needed to confirm whether these theories can also be applied

in the elderly population.<sup>3</sup>

### Altered-gut Motility

As IBS is characterized by an altered bowel habit, abnormal colonic motility has been proposed to be the cause in the pathophysiology of IBS. Colonic motility, including high amplitude propagating contractions (HAPCs), and colonic transit were suggested to be increased in IBS patients who have diarrhea. In the contrary, in IBS patients with constipation, reduced colonic motility, fewer HAPCs, and delayed colonic transit has been proposed to be the likely cause.

Furthermore, some recent studies have demonstrated that 5-HT (serotonin) concentration, which is known as a mediator in initiating colonic motility, was found to be increased in IBS patients with diarrhea. The 5-HT concentration was also found to be reduced in IBS patients with constipation. These findings may also strengthen the concept that altered bowel motility is involved in the pathophysiology of IBS.<sup>4</sup>

### Visceral Hypersensitivity

As impaired in the pain perception is commonly occurred in most patients with IBS, visceral hypersensitivity has also been proposed to be the cause in the pathophysiology of IBS. Several studies have suggested that chronic pain in IBS is occurred through central and peripheral mechanisms.<sup>4</sup>

Tissue injury and inflammation will release a number of immune and inflammatory mediators. As this process started, the nerve terminals, particularly the peripheral nociceptor terminal, are exposed to these mediators. Thus, a peripheral sensitization may be occurred, and resulted in primary hyperalgesia (a condition where the nerves are more sensitive to the pain stimuli) and allodynia (a condition where the nerves interpretates non-painful stimuli as painful stimuli). Finally, as a result of a repeated and continuous stimulation to the nerves, particularly the sigmoid splanchnic afferents, secondary hyperalgesia and allodynia may occurred and lead to the development of central sensitization.<sup>4</sup>

### Psychosocial Factors

Several studies have demonstrated that psychological disorders, including anxiety and depression, is strongly associated with

IBS. Epidemiological studies have shown that psychological impairment is occurred in approximately 50% of patients with IBS. Furthermore, psychosocial factors, such as stressful live events and personality type, have been proposed to affect the symptoms of IBS. Finally, it could be concluded that psychosocial factors might be involved in the pathophysiology of IBS.<sup>4</sup>

### Brain-gut Axis

Currently, brain-gut axis is considered as a potential cause in the pathophysiology of IBS. It has been postulated that in patients with IBS, colonic motor response to a stress hormone stimulation, particularly corticotropin-releasing factor, is increased. As a result, gastrointestinal response to stress stimulation is increased. From these findings, it could be concluded that there is a strong relationship between gastrointestinal response and stress stimulation. Therefore, psychological treatment should always be involved in the treatment of IBS in the elderly.<sup>2</sup>

### Post-infective IBS

Infectious diseases, particularly in the gastrointestinal tract, may play a role in the pathophysiology of IBS. Epidemiological studies have shown that IBS symptoms are occurred in approximately 25% of people after having an acute gastrointestinal infection. Post-infectious IBS is considered as non specific to any type of organism, as it may occurred in patients after having salmonella, shigella, or campylobacter infection. Several studies have reported that the post-infective IBS could not be recognized easily, as the macroscopic findings were normal. However, several abnormalities can be detected in microscopic examination in the biopsies of the gut.<sup>4,5</sup>

### Microbial Flora of the Gastrointestinal Tract

In healthy persons, Bifidobacteria and Lactobacilli are considered as the dominant gastrointestinal (GI) microorganisms. Several studies have demonstrated that these bacteria may give a beneficial effect to the health of the host, particularly in the GI tract, as they have been shown to promote the release of anti-inflammatory cytokines and inhibit the release of pro-inflammatory cytokines.<sup>6</sup>

However, the composition of these bacteria in the GI system could be altered by antibiotic usage, as the antibiotic may affect the life of all GI microorganisms, either pathogenic or non-pathogenic bacteria. Some recent studies have demonstrated that the composition of bacteria in the GI system in patients with IBS is differ from healthy subjects. Thus, altered GI flora is considered to be strongly associated with the development of IBS symptoms.<sup>6</sup>

### DIAGNOSIS

IBS is characterized by the presence of persistent symptoms, such as chronic abdominal pain or discomfort, and altered bowel habit, for at least six months, in the absence of any organic abnormalities, either structural or metabolic. Currently, Rome III criteria has been widely used in assessing IBS. Furthermore, it has been considered as the criteria of choice in defining IBS. However, the criteria for defining IBS in the elderly is not different from the younger populations.<sup>3,7</sup>

**Table 1.** Rome III criteria for defining irritable bowel syndrome (IBS)

Recurrent abdominal pain or discomfort for at least 3 days per month in the last 3 months associated with 2 or more of the following:

- Improvement with defecation
- Onset associated with a change in frequency of stool
- Onset associated with a change in form (appearance) of stool

Cited from: Minocha A<sup>3</sup> and Longstreth GF<sup>7</sup>

### IBS Sub-classification

According to the Rome III criteria, IBS patients can be classified into three subgroups, based on the bowel pattern:<sup>7,8</sup>

1. IBS with diarrhea (IBS-D) : The patients are categorized into this group if they have loose stools in >25% of the time and hard stools in <25% of the time.
2. IBS with constipation (IBS-C) : The patients are categorized into this group if they have hard stools in >25% of the time and loose stools in <25% of the time.

3. IBS with mixed bowel habits or cyclic pattern (IBS-M) : The patients are categorized into this group if they have both hard and loose stools in >25% of the time.

### History

IBS patients should be assessed comprehensively. The primary presenting symptoms should be reviewed carefully, as these symptoms are considered as the main key in establishing the diagnosis of IBS. Other factors, including predisposing factors, and other associated symptoms, either gastrointestinal or extra-gastrointestinal, should also be sought carefully. Furthermore, it is also necessary to recognize the alarm symptoms early, as older persons have higher risks to develop serious disorders, including malignancy. As psychosocial disorders may also play a role in the development of IBS, the underlying psychosocial factors should be sought carefully, and treated, if present. Principally, all IBS patients should be asked about the following:<sup>4,8</sup>

1. The pattern of abdominal pain or discomfort. Typically, IBS is characterized by a chronic and recurrent abdominal pain or discomfort. Most patients had also previous episodes of abdominal pain or discomfort. Furthermore, IBS is strongly suggested if the symptoms improved after the patient having defecation.<sup>4,8</sup>
2. Nature of the associated bowel disturbance: constipation, diarrhea or alternation. It is necessary to categorize IBS patients based on the bowel pattern. The term “diarrhea” and “constipation” can be assessed easily using the Bristol Stool Chart. However, occasionally, a group of patients could not be categorized into any subtypes, as these patients may experience both loose and hard stools together within a short period. Thus, these patients could be categorized as having “mixed” bowel habit.<sup>4,8</sup>
3. Other symptoms. Other gastrointestinal symptoms may commonly occurred in patients with IBS, including bloating, straining, incomplete evacuation, urgency, incontinence, and passage of mucus per rectum. Furthermore, several extra-gastrointestinal symptoms may also occurred

concomitantly in patients with IBS, and should be recognized early, as failure to recognize this may increase the cost of treatment due to unnecessary investigation.<sup>4,8</sup>

### Alarm Symptoms

The presence of alarm symptoms, such as rectal bleeding, anemia, unintended weight loss, fever accompanying lower abdominal pain, and abnormal physical examination, should be sought carefully, as older persons have higher risks to develop serious disorders. Furthermore, a family history of serious diseases, including colon cancer or IBD, should also be sought carefully. However, aging itself is considered as one of the alarm symptoms. Therefore, careful investigations should be performed, to exclude organic disorders, before the diagnosis of IBS in the elderly was established.<sup>4</sup>

### Psychological Features

IBS patients usually have psychological abnormalities, including anxiety, depression, and somatization. Psychological factors should be taken into consideration in the management of IBS, as the persistence of IBS symptoms is strongly associated with the impairment of psychological factors. Furthermore, psychological disorders may also reduce the quality of life in patients with IBS. Thus, the presence of psychological disorders should be sought carefully, and treated, if present.<sup>4,8</sup>

### Physical Examination

Physical examination should be performed completely, as it is needed to recognize possible organic disorders early. However, physical abnormalities are usually absent in IBS patients. Physical examination should be initiated by general examination, as it is necessary to exclude the presence of organic diseases early. After that, the abdominal examination should be performed completely. It should be noted to review the patient’s pain carefully, including the location of pain, and the type of pain, either diffuse or localized, as the pain description may play an important role in establishing the diagnosis of IBS. Pain in IBS is usually visceral in origin, thus the presence of a well-localized pain suggest other diagnoses.<sup>4,8</sup>

Perianal region examination, including

digital rectal examination, should always be performed in establishing the diagnosis of IBS, particularly in patients with special conditions, such as diarrhea, or rectal bleeding. Further investigation, including endoscopic examination, should be taken into consideration in patients with diarrhea or rectal bleeding, as it is needed to exclude the presence of serious organic disorders, such as colitis, hemorrhoid, colon or rectal cancer. However, aging itself is considered as one of the alarm symptoms, which need further evaluation, including endoscopic examination. Therefore, endoscopic examination should always be performed in elder patients with IBS.<sup>4,8</sup>

### **CLINICAL FEATURES UNIQUE TO THE ELDERLY**

The presence of IBS in the elderly is also not easy to be recognized, as the presence of systemic disorders such as diabetes mellitus and polipharmacy, may cause alterations in pain perception. As a result, the clinical manifestation of IBS in the elderly is usually non-specific. Unlike the younger population, the changes in bowel pattern in the elderly, including constipation, diarrhea, or alternating diarrhea and constipation, are frequently intermittent, although constipation is predominantly ocured in the elderly. Furthermore, as there are several alterations in pain perception in the elderly, the abdominal pain is not easy to localized. However, in most patients, the pain is usually localized in the mid and lower region of abdomen, and resolved after having defecation or flatus.<sup>3</sup>

Aging is associated with an increased risk of having several disorders, including bowel distention and borborygmi. The presence of these disorders may complicate the management of IBS in the elderly. Furthermore, older persons, particularly women, usually have an increased prevalence of perineal descent, which is strongly associated with difficulty in evacuation. In addition, the presence of geriatric problems, such as rectal urgency, fecal incontinence, and urinary problems, should also be taken into consideration in the management of IBS in the elderly. Therefore, the management of IBS in the elderly is more complicated, when compared to the younger populations.<sup>3</sup>

### **ASSOCIATED CONDITIONS**

Some recent studies have demonstrated that IBS is strongly associated with several comorbidities which may occurred concomitantly, including Gastroesophageal Reflux Disease (GERD), non-obstructive dysphagia, non-cardiac chest pain, and functional dyspepsia. Patients may also experience increased gas and bloating, eventhough the volume of colonic gas is normal. Furthermore, IBS is also associated with several extra-gastrointestinal problems, including asthma, polyuria, sexual dysfunction, and dyspareunia. Chronic functional pain disorders, such as fibromyalgia, chronic fatigue syndrome, and migraine, may also occurred in patients with IBS. Recent epidemiological studies have demonstrated that the prevalence of abdominal, pelvic, and back surgery is also increased in patients with IBS.<sup>3,4</sup>

### **DIFFERENTIAL DIAGNOSIS**

Several organic disorders, including mesenteric ischemia, thyroid dysfunction, diabetes mellitus, depression and autonomic neuropathy, may give similiar symptoms to IBS. Thus, exclusion of these organic disorders is important before the diagnosis of IBS is established. The presence of organic disorders, should be taken into consideration, especially if the patients experience some clues which suggest organic disorders, such as recent onset and progressive symptoms, fever, vomiting, nocturnal pain or defecation, hematochezia, and unintentional weight loss. In elder men, chronic prostatitis should also be considered as one of the alternative diagnoses, as it may also give similiar symptoms to IBS, such as intermittent diarrhea, passage of mucus, and abdominal pain, as well as difficulty in evacuation.<sup>3</sup>

Laboratory tests play an important role in assessing the diagnosis of GERD, as the presence of any abnormalities in the laboratory results, including anemia, leukocytosis, abnormal liver enzymes, abnormal thyroid function tests, coagulopathy, and positive occult blood test in the stool examination, may suggest alternative diagnoses, and warrant further investigations.<sup>3</sup>

## TREATMENT STRATEGY

IBS is strongly associated with a wide spectrum of symptoms of varying frequencies and degrees of severity. It has been postulated that numerous factors may play a role in the pathophysiology of IBS, including abnormal motility, visceral hypersensitivity, and dysfunction of brain-gut regulatory system. Thus, there is no single or ideal medication in the treatment of IBS. IBS should be treated comprehensively, with an emphasis on the predominant symptom.<sup>10</sup>

Based on the clinical manifestation, patients with IBS can be categorized into three groups, such as those with mild, moderate or severe symptoms. The clinical profiles of each group can be seen in **Table 2**.<sup>10</sup>

**Table 2.** Spectrum of clinical features among patients with IBS

Clinical features	Mild IBS	Moderate IBS	Severe IBS
Estimated prevalence	70 %	25 %	5 %
Correlation with gut physiology	+++	++	+
Symptoms	0	+	+++
Psychosocial difficulty	0	+	+++
Health care use	+	++	+++

0 = Generally Absent; + = Mild; ++ = Moderate; +++ = Marked. (Cited from: Drossman DA<sup>10</sup>)

Some recent studies have suggested that the clinical symptoms of IBS are strongly correlated with the underlying pathophysiology. As mild IBS is primarily related to abnormal motility and/or visceral hypersensitivity, these symptoms can be treated by medications which improve the gut motility. Most patients with more severe symptoms of IBS usually have psychological disorder. It has been suggested that the dysfunction of brain-gut regulatory system may play a role in the development of these symptoms. Therefore, psychological treatment, including anti-depressant medication and behavioral therapy, should be involved in the management of these patients.<sup>10</sup>

In assessing the elderly with IBS, it is important to classify older persons into three

groups, based on the age, such as young-old, old-old, and frail-old. This classification is needed in the management of older persons with IBS, since each group has different problems from the other groups. The bowel pattern of the young-old patients is the same as the younger population. Thus, the treatment of IBS for young-old patients is similar to the younger population.<sup>3</sup>

In the contrary, as aging process, significant changes in bowel pattern could be seen in older age, such as in the old-old and frail-old patients. Several factors may also contribute to the changes in the bowel pattern, including systemic diseases, and medications used by the elderly. Furthermore, unlike the younger population, in the frail-old patients, the risks of many medications or interventions may outweigh the benefits. Thus, the treatment plan should be arranged individually, based on the patients' condition.<sup>3,10</sup>

### Non-pharmacologic Therapies

In some patients, particularly those with mild IBS, non-pharmacological therapies, which is given alone, is adequate in improving the symptoms. In addition, it could also be given in combination with pharmacologic therapy, to achieve an optimal result of treatment.<sup>10</sup>

**Physician-patient Relationship.** An effective physician-patient relationship is important in the treatment of IBS. Furthermore, as psychosocial stressors may promote the symptoms of IBS, it is important to search for the underlying stressor and correct it, if present.<sup>10</sup>

**Dietary Modifications.** Some recent studies reported that the symptoms of IBS may be created as a generalized response to eating. Therefore, in patients with IBS, it is recommended to eat small meals more frequently, as it may cause less stress on the GI tract and reduce the symptoms of IBS. Current studies have demonstrated that there is no specific diet which may promote or reduce the symptoms of IBS. However, in IBS patients with lactose intolerance, several dietary substances should be avoided, as they can aggravate the IBS symptoms.<sup>10</sup>

As fibre and fluid intake is associated with improvement of IBS symptoms, it is recommended to increase fibre (20-30 g/day)

and fluid intake as an initial therapy for IBS patients. The consumption of high fiber may result in softer and bulkier stool, which is easier to defecate. Since fiber supplementation may increase colonic transit times in patients with IBS, it is effective for IBS-C, but not for IBS-D. At the initial of the therapy, fiber supplementation should be given at small doses. The dose can be increased gradually. The fiber supplementation should be followed by an adequate fluid intake, as lack of fluid intake is associated with a number of adverse effects, including dehydration and stool impaction.<sup>2,11</sup>

Since older persons usually have disordered bowel function, a toilet training should be performed, particularly for those who are constipated. Older persons should be trained to have defecation in a good posture. The toileting position should be modified to facilitate defecation, such as bending forward while seated on the toilet seat, or using a foot rest to raise the foot levels while having defecation.<sup>3</sup>

### Medications

Since there is an altered risk-benefit profile in the elderly, drug safety should be taken into consideration in the management of IBS in the elderly. In addition, as aging is strongly associated to the presence of several geriatric problems, such as confusion, falls, urinary problem, as well as cardiac arrhythmias, the drug dose should be adjusted based on the patient's condition individually. Furthermore, cognitive impairment is a common problem in the elderly. Therefore, several efforts should be made to overcome this problem, such as making a written instruction, to increase the patient's compliance.<sup>3</sup>

Like the younger population, the medication is mainly directed to manage the predominant symptom, including constipation, diarrhea, and abdominal pain.<sup>3</sup> A number of agents have been widely used to improve the symptoms of IBS, such as:

### Pain

1. Analgesic. In some patients, analgesic is needed to reduce the pain. At the initial of therapy, paracetamol is preferred to nonsteroidal anti-inflammatory drugs (NSAID). Opiates is not recommended to be

used in the elderly, as its use is associated with several adverse effects, such as dependence and addiction, which may be dangerous to the elderly. Furthermore, since NSAID and opiates may cause adverse effects on the gastrointestinal tract, these drugs should be used cautiously for those with prior history of gastrointestinal disorder.<sup>8</sup>

2. Antispasmodics. Since the symptoms of IBS may be created as a generalized response to eating, some patients might suffer from IBS symptoms, as a result of increased colonic motility in response to food or fluid intake. These symptoms could be reduced by the use of antispasmodic medications, which are best taken 30 minutes before meals. However, several randomized controlled trials have shown that these agents are useful in reducing pain, but not for reducing diarrhea or constipation. Like other anti-cholinergic drugs, antispasmodic agents may also cause several adverse effects, including blurred vision, dry mouth, fatigue, and urinary hesitancy. These agents should not be used in patients with narrow-angle glaucoma, or urinary retention.<sup>1,2,8,11</sup>

3. Tricyclic antidepressants (TCA). TCA can also be used in the treatment of IBS, as it may reduce the symptoms of abdominal pain or discomfort. The required dose is lower than that used to treat patients with depression. It was suggested that the benefit of TCA in reducing pain was unrelated to its anti-depressant effect. Several studies have suggested that TCA may reduce the pain sensitivity of peripheral nerves, thereby reducing the pain sensation. However, the exact mechanism of action is still unknown.<sup>1,2,8,11,12</sup>

Since pain is commonly occurred in patients with moderate to severe IBS, TCA is recommended to be used for these patients. However, the use of TCA is associated with an increased risk of having constipation. Thus, this agent should be used cautiously in patients with IBS-C. Like other antidepressants, TCA may also possess anti-cholinergic adverse effects which may be dangerous for older persons, such

as cardiac arrhythmias, confusion, blurred vision, dry mouth, and urinary retention. Thus, these agents should be given at a low dose, at the initial of the therapy. TCA is contraindicated for those with prior history of having cardiovascular disorder, autonomic dysfunction, or cognitive impairment.<sup>11,12</sup>

4. Selective serotonin reuptake inhibitors (SSRIs). Several randomized controlled trials have demonstrated that SSRIs, such as paroxetine, fluoxetine, and citalopram, could also be used in the management of IBS, as these agents may cause an improvement in the symptoms of IBS, including bloating, abdominal pain, and psychological stress. Furthermore, these agents may cause less adverse effects, when compared to TCA. However, some recent studies have found that different SSRIs may cause different effect to the patient's body weight, either weight gain or weight loss. This factor should be taken into consideration, when prescribing SSRIs to older patients with IBS.<sup>1,2,8</sup>
5. Bifidobacterium infantis 35624. Currently, probiotics is commonly used in the treatment of gastrointestinal disorder, including IBS. Some recent studies have suggested that Bifidobacterium infantis 35624 is effective in reducing the symptoms of IBS, such as abdominal pain, bloating, as well as bowel movement disorder, regardless of the predominant bowel habit.<sup>6,8,13-15</sup>

### Constipation

1. Laxatives. Since fiber, when used alone, is not effective in the treatment of moderate to severe constipation, the use of laxatives should be taken into consideration in this situation. Two groups of laxatives, such as osmotic laxatives (e.g. polyethylene glycol, lactulose and magnesium-containing products), and stimulant laxatives (e.g. bisacodyl and senna), are commonly used in patients with IBS-C.<sup>2,11</sup> Several studies have suggested that most osmotic laxatives are effective in reducing the symptom of constipation in IBS-C. In addition, the incidence of tachyphylaxis is rare. However, the use of some medications in this class, such as lactulose, might cause

several gastrointestinal disorders, including bloating, abdominal pain, diarrhea, as well as dehydration. It should also be noted to use magnesium-containing laxatives cautiously in frail older persons, particularly for those with an elevation of serum creatinin.<sup>2,11</sup>

Stimulant laxatives are also effective in reducing the symptom of constipation in patients with IBS-C. However, the use of these agents is associated with an increased risk of having serious adverse effects, including tachyphylaxis and dependency. Furthermore, several animal studies have demonstrated that stimulant laxatives may cause damages to the enteric neurons, including swelling and fragmentation. Therefore, these agents are not recommended to be used for long term use. Several studies have shown that although laxatives is effective in reducing the symptom of constipation, they only provide little benefit in reducing abdominal pain.<sup>2</sup>

2. Tegaserod. Since serotonin (5-HT) may play an important role in the gastrointestinal motility, serotonergic agents have been used widely in the treatment of several gastrointestinal disorders, including IBS. Tegaserod, the partial 5-HT<sub>4</sub> agonist, is commonly used in reducing the symptom of constipation in IBS, since it may increase the colonic contractility. Unlike laxatives, several randomized controlled trials have demonstrated that the use of tegaserod is associated with an overall relief of IBS symptoms, such as pain and constipation.<sup>1,2</sup> Since IBS is associated with an alternation of bowel motility pattern, several studies have also examined the use of this agent in patients with IBS-D. It was reported that no complications or adverse effects occurred within the use of this agent in IBS-D patients. However, tegaserod was withdrawn from the market in 2006 because of cardiovascular adverse effects in the elderly.<sup>1,2</sup>
3. Lubiprostone. Lubiprostone, a locally acting chloride channel activator, is another novel drug which is commonly used in reducing the symptom of constipation in patients with IBS-C. It should be noted



that this agent might cause several adverse effects, including nausea, diarrhea, as well as abdominal discomfort. Therefore, lubiprostone is recommended to be used in patients with severe constipation in whom other therapies have failed. However, further studies are needed to confirm the efficacy and safety of lubiprostone in treatment of IBS-C in the elderly.<sup>1,16</sup>

4. *Bifidobacterium lactis* DN-173 010. *Bifidobacterium lactis* DN-173 010 is another probiotic product which is commonly used in the treatment of IBS-C. Several randomized controlled trials have demonstrated that *B.lactis* DN-173 010 is effective in reducing the symptom of constipation and improving the stool frequency, as it might increase colonic motility and reduce colonic transit times.<sup>8,13,17</sup>

#### Diarrhea

1. Loperamide. Loperamide may play a role in reducing the gut motility by binding to specific opiate receptors in the enteric nervous system. Several studies have suggested that loperamide can be used for long term use, since it does not have an anticholinergic component. However, although loperamide is effective in reducing the symptom of diarrhea and improving stool consistency, several randomized controlled trials have demonstrated that it is no more effective in reducing abdominal pain, when compared to the placebo. Furthermore, since impaction is commonly occurred in the elderly, it is important to exclude the presence this disorder before assessing that the patient is suffered from diarrhea and giving anti-diarrheal medications.<sup>2,8,11</sup>
2. Alosetron. As mentioned before, currently, serotonergic agents are commonly used in the treatment of several gastrointestinal disorders, including IBS. Several studies have demonstrated that alosetron, a selective 5-HT<sub>3</sub> antagonist, is effective in the treatment of severe IBS-D in whom other approaches have been unsuccessful. Alosetron might block the serotonin receptor, thereby reducing visceral pain sensation and colonic motility. Therefore, alosetron is effective in reducing global symptoms of IBS, including abdominal pain.<sup>1,8</sup> However, the use of alosetron is strongly associated with an increased risk of having constipation. Furthermore, several studies have reported the incidence of ischemic colitis within the use of this agent in the elderly. Thus, alosetron is only recommended for older patients with IBS-D who have symptoms >6 months and showed a lack of response to the treatment with other anti-diarrheal medications.<sup>1,8</sup>

#### PSYCHOLOGICAL TREATMENTS

Since IBS is strongly associated with psychological disorders, psychological treatments are recommended for IBS patients in such conditions, such as moderate to severe symptoms of IBS, when other therapies have been failed, or when stress or psychological factor is highly likely contributing to the development of the gastrointestinal symptoms.<sup>4,10</sup>

Currently, 4 major types of psychological treatments are commonly used in the treatment of IBS:

1. Cognitive-Behavioral Treatment (CBT) is a technique where the patients are trained to correct maladaptive thoughts by using diaries and doing exercises with the therapist. The aim of this treatment is to achieve an adequate control over the symptoms of IBS.
2. Psychodynamic or interpersonal psychotherapy is a technique where the patients are trained to search for any difficulties in their interpersonal relationships which may promote or worsen the gastrointestinal symptoms.
3. Hypnosis is a technique where positive insights are delivered from the therapist to the patients in the form of hypnotic suggestions. This technique is used to normalize the bowel movement, thereby reducing gastrointestinal symptoms.
4. Stress management/relaxation training is a technique to stabilize the patients' autonomic activity and muscle tension by using imaging and relaxation methods.

All of these psychotherapy techniques, when used alone or in combination, are effective in reducing the symptoms of IBS.<sup>4,9,10</sup>

Several studies reported that CBT is the most commonly used in the treatment of IBS. CBT is also reported as the best studied psychological treatment for IBS. However, some recent studies have demonstrated that CBT, when used alone, is not effective to reduce the symptoms if the patients had severe depression. Therefore, in patients with severe depression, CBT should be given in combination with other form of therapies, such as anti-depressant medications.<sup>1,11</sup>

### CONCLUSION

IBS is one of the most common gastrointestinal problems in the elderly. Diagnosis of IBS in the elderly is not different from the younger populations. However, aging itself is categorized as one of the alarm symptoms in the diagnosis of IBS. Therefore, exclusion of organic diseases, using several investigations, is of paramount important in the older patients. Overall, the treatment of IBS in the elderly should be arranged the same way as younger patients. However, greater caution needs to be considered before prescribing because of the altered risk-benefit profile in the elderly.

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