Irritable Bowel Syndrome: The Most Common Presentation, Severity Ranking and Therapeutic Regimens among Patients Attending Outpatient

Zaid Al-Attar

ABSTRACT

Background: Irritable bowel syndrome (IBS) is one of the most common GI disorders in people under 50 years of age.

Objective: To Formulate an overview about demographics of IBS and patterns of presentation, to determine IBS patients severity ranking, and to recognize the main regimens with their patient satisfaction.

Methods: This is a cross sectional clinical study that is conducted in Outpatient Consultant Internal Medicine Clinic in Al-Kindy Teaching Hospital from 11/12/2017 to 24/12/2017. The patients suffering from IBS are diagnosed by a consultant according to the symptom-based Rome criteria for functional GI disorders, by implementing a questionnaire collecting thorough information. 77 cases of IBS patients were collected (24 male and 53 female).

Results: This study revealed that majority of patients were female (68.8%). Most of the patients were married, employees and housewives, aged between (20-30 yrs). Most patients use anxiolytics, muscle relaxants and proton pump inhibitor. There is a high IBS prevalence among low educational level (high school graduates and non-school graduates). Most patients in our study had constipation.

Aggravating factors Psychological factors (stress) are intrinsically associated with IBS and symptoms in a large percentage of patients. Antispasmodics usage in our study show high effectiveness for IBS patients especially those with crampy abdominal pain and diarrhea.

Conclusions: Diagnosing and managing IBS can be a big challenge since many drugs used to reduce symptoms and severity, but also, they could be unnecessary medication that could aggravate bowel symptoms and have adverse effects on the long term.

Keywords:
IBS, diarrhea, constipation, anxiolytic, antispasmodics.

Corresponding author :
Pharmacology Dept., Al-Kindy College of Medicine, University of Baghdad
zaidattar@kmc.uobaghdad.edu.iq

INTRODUCTION

Irritable bowel syndrome (IBS) is an episodic gastrointestinal (GI) disorder that is affecting a significant proportion of population, with a calculated approximate prevalence of 11.2% [(1)] . IBS has a strong impact on health-related quality of life, with its consequences in reduced work productivity, increased absenteeism and elevated health care use and costs. The cardinal symptoms of IBS include **bloating** and **abdominal pain/discomfort** associated with **changes in bowel habits** [(2).]

Several risk factors for IBS have been identified including:

Female gender, psychological problems, stress, food intolerance, bacterial overgrowth of the small intestine.

Incidence and epidemiology

IBS is common with a prevalence of 14% to 24% in females and 5% to 19% in males. Most individuals meeting diagnostic criteria for IBS will not seek treatment [(3)]. However, it constitutes 12% of visits to primary care physicians and 28% of visits to gastroenterologist. Data documented between 2.4 and 3.5 million yearly visits to physicians by patients with IBS and more than 2.2 million medications prescribed. Rates were highest among those aged 30-50 years [(4)]. Recent epidemiological studies from Middle East countries demonstrated rise in the burden of IBS in the Arab world [(5)]. In Iraq, IBS is one of the most common gastro-intestinal disorders with prevalence estimated between 10% and 20% [(6).]

Pathophysiology:

is complex and found to be due to combination of several factors [(7):]

1. Motor abnormalities

2. Decreased threshold of sensation in various receptors in the gut wall.
3. Viral, bacterial, protozoal, and helminthic infections.
4. Malabsorption.
5. Antibiotic use which may lead to changes in gut microflora.
6. Food sensitivity: such as gluten sensitivity and fructose intolerance.
7. Genetics: Polymorphisms in serotonin transporter gene resulting in altered serotonin re-uptake efficacy affecting peristalsis.
8. Stress, anxiety/depression, and phobias.

Clinical diagnosis

It depends on complete medical history, physical exam and tests to rule out other conditions and specific diagnostic criteria to IBS which is Rome III criteria [8]

Rome criteria III: These criteria state that in order for a diagnosis of IBS to be given, patients must satisfy the following: Recurrent abdominal pain or discomfort at least once/week, on average, in the past 3 months with onset at least 6 months previously of recurrent abdominal pain or discomfort associated with 2 or more of the following:

(1) It is relieved with defecation.
(2) Onset is associated with a change in frequency of stool.
(3) Onset associated with a change in form (appearance) of stool.

Diagnostics tests to exclude other pathologies [9] :

1. Stool microscopy.
2. Blood Tests (CBP, C-reactive protein), and serology tests for celiac disease.
3. Sigmoidoscopy or Colonoscopy
4. Barium Enema
5. Lactose intolerance tests
6. Breath test for bacterial overgrowth

Types of IBS: For the purpose of treatment, IBS can be divided into three types, based on symptoms. From the meta-analysis by Lovell and Ford , IBS with constipation (20%-30% of patients), IBS with diarrhea (20%-30% of patients) or IBS with "mixed" constipation and diarrhea (up to 45% of patients) [1] .

Pharmacologic management:

Treatment of IBS is based on the main symptoms of the disease such as diarrhoea, constipation, abdominal pain or bloating. Determination of disease severity and the patient's major symptoms are deemed as being the main goals of treatment [10] .

The aim of the study:

1. Formulating an overview about demographics of IBS and patterns of presentation.
2. To determine IBS patients severity ranking.
3. Recognizing the main regimens with their patient satisfaction.

METHODS

This is a cross sectional clinical study that is conducted in Outpatient Consultant Internal Medicine Clinic in Al-Kindy Teaching Hospital from 11/12/2017 to 24/12/2017. The study was approved by the scientific unit in Al-Kindy College of Medicine. Patient eligibility criteria included: patients presented with IBS (according to the symptom-based Rome criteria for functional GI disorders), any age, and both genders. Exclusion criteria: Chronic diseases (e.g. diabetes mellitus), drugs, and toxic agents that may mimic IBS symptoms or exacerbate the disorder must be excluded. After obtaining a formal consent, patients suffering from IBS were recruited in this study. Then, a detailed questionnaire (shown below) was implemented to collect thorough information. Data were analyzed and comparisons for findings were made using percentages implementing Excel software.

- **The questionnaire**:

name age sex marital status occupation educational level: Past medical /surgical history Family history Drug history Predominant features: diarrhea, constipation, mixed Aggravating factors Relieving factors Treatment received.

Satisfaction with drug therapy (using IBS severity score: Figure 1) (11) :Includes the following questions with the answers ranking from: None, not very severe, quite severe, severe, very severe (with a relevant score for each question ranging from 0-100).

1. How severe is your pain?
2. If currently in pain, how severe is the abdominal pain?
3. If you currently have abdominal distension, how severe is it?
4. How satisfied are you with your bowel habits?
5. How much IBS affect or interfere with your life in general?

The severity score for patients: 75-174=mild IBS

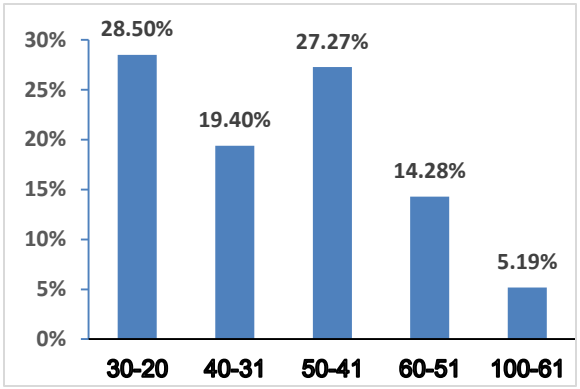
175-299=moderate IBS

300-500=severe IBS

RESULTS

77 cases of IBS patients were collected (24 male and 53 female) with a female predominance (68.8%). The age distribution, the highest prevalence of IBS was recorded in the (20-30) years age group (28.5%) (Figure.1).

Most of the patients were married (71.4%). Our result also showed that (55.84%) of patients had a family history of IBS. Considering past medical history, most patients have negative medical history (49.4%). However, high prevalence of anxiety (40.25%) and depression (24.67%)



were found. Others (other cases of medical history) constitute (11.68%).

Most patients in our study had constipation (40.3%). While mixed and diarrhoea types constitute (36.4%) and (23.4%) respectively.

Figure 4. Shows the percentage of relieving and aggravating factors. Mostly relieved by drug usage (46.75%) followed by diet control (36.36%). IBS is mostly aggravated by stress (90.90%) and diet.

The severity score shows that most patients (53.25%) have moderate severity while the severe and mild types constitute (46.75% and (0%) respectively.

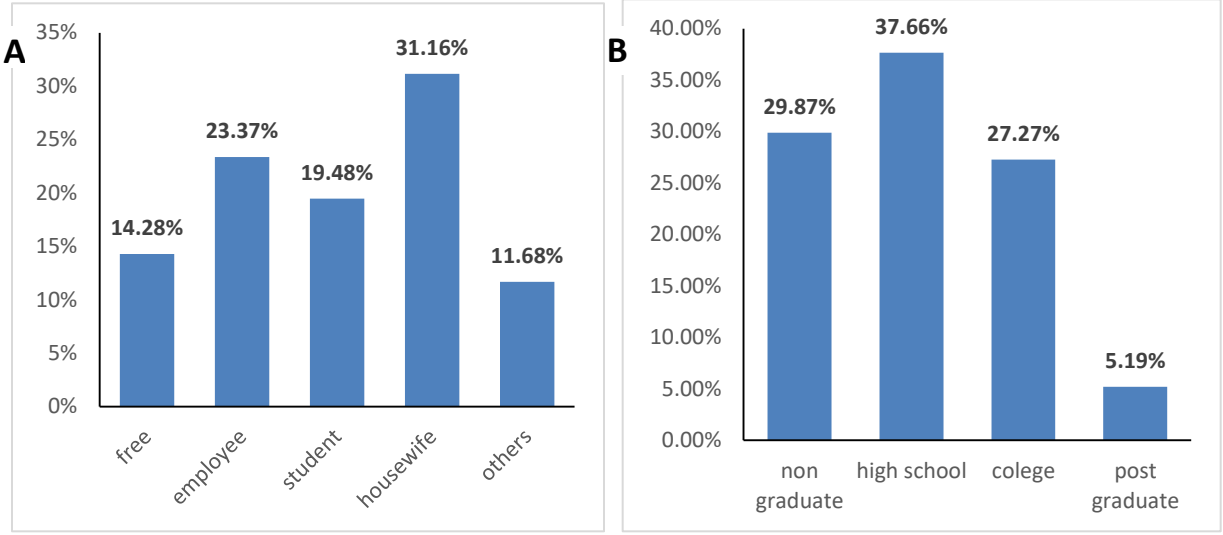


Figure 2: A. IBS prevalence according to work status. B. IBS prevalence according to educational level.

Most patients were housewives and employees (Figure 2: A). There is a high IBS prevalence among low educational level (high school graduates and non-graduates) (Figure 2: B).

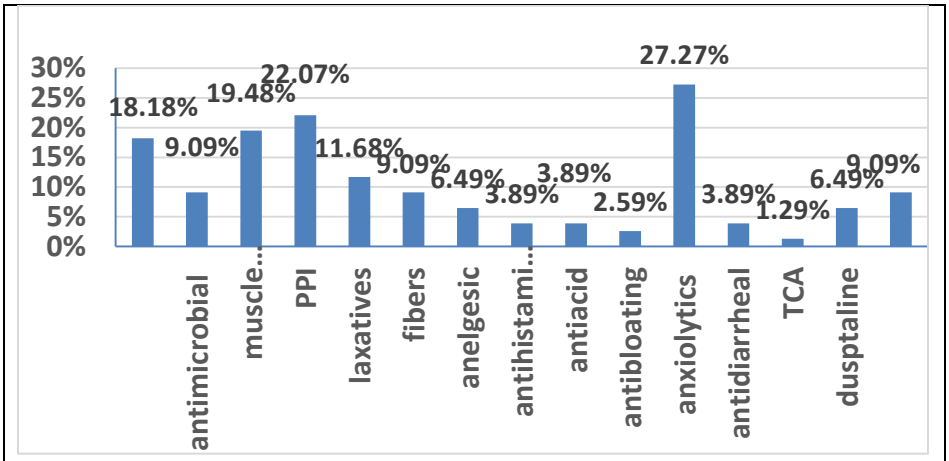


Figure 3: Drugs used by IBS patients.

Treatment (Figure 3): Anxiolytics are most commonly used for IBS attacks (27.27%) followed by proton pump inhibitors (PPI) (22.07%).

Most patients with IBS are satisfied (68.83%) with their current drug therapy.

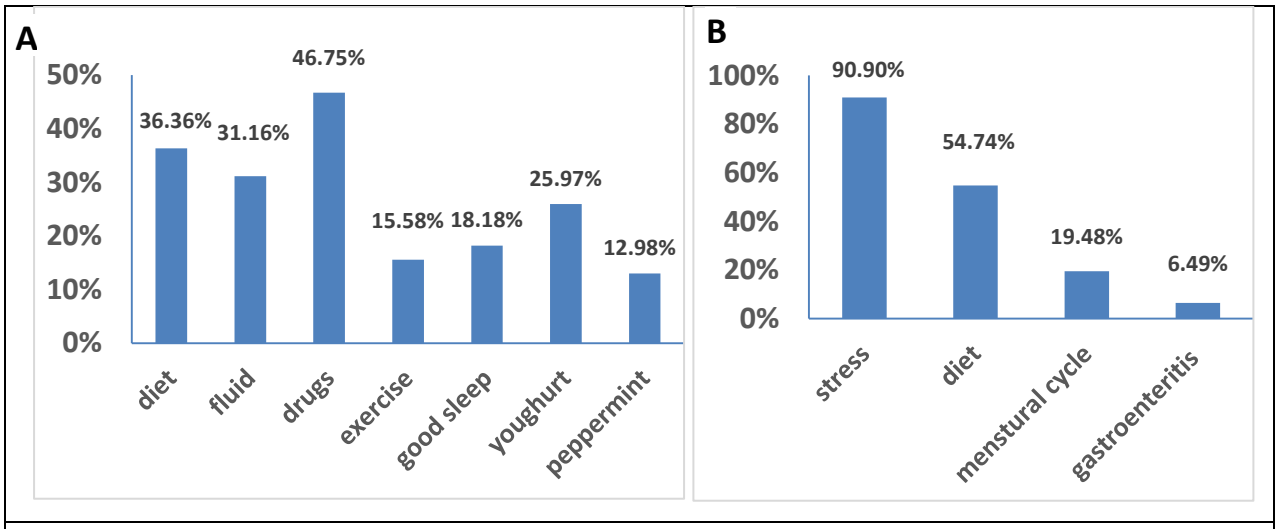


Figure 4: A. IBS relieving factors. B. IBS aggravating factors.

DISCUSSION

Regarding the sex distribution of patients, there was female predominance, this predominance goes with international epidemiological studies [5] .

Several studies have reported that higher prevalence in women is related with biobehavioural stress response, sex-related differences in psychosocial factor, autonomic responses, gender role, hormonal factors because hormones rise and fall throughout the menstrual cycle [12].

Regarding the age distribution, the highest prevalence of IBS was recorded in the (20-30) years age group. This finding is similar to a study from New Zealand which found that 50% of patients with IBS report having first symptoms before age of 35 years, this may be due to high anxiety among this age group, workload, and among females, estrogen therapy before or after menopause also play a role in this age group [13] .

There is a high IBS prevalence among low educational level (high school graduates and non-school graduates). The finding is supported by the theory that lower education level and income is associated with poorer health care outcomes, lower overall quality of life, and increased life stressors, and this is similar to findings from a study in U.S [14] .

In respect to the marital status, most of the patients were married. This is due to recent conflict circumstances in our country and the greater responsibilities of marriage in such difficult lifestyle which may precipitate psychosocial stress that predispose and/or exacerbate IBS. This finding is similar to that of Patrick [15] .

Most patients were housewives and employees. This could be attributed to that an employee with the stress of his work and a housewife with the burden of her home responsibilities, also since it is hard nowadays to find a job, they are under stress because of unemployment stress at home. These results coincide with that of Toner, et al who found that psychosocial stress are important triggers for symptoms of IBS [16] .

Considering past medical history, most of our sample had no medical history and also high percentages of patients with anxiety. These results are in agreement with that of Labus, Jennifer S., et al (17) , who found that anxiety is the key explanatory variable of IBS diagnostic status.

Most patients in our study had constipation. This differs from a study in China in which the most common type was diarrhea 66.3%, then constipation 14.7% [18] .

In our society, the predominance of constipation may be due to: dietary choices such as insufficient dietary fiber, or behavioural causes such as decreased physical activity, inadequate fluid intake, side effects of medications such as tricyclic

antidepressant ,other medical condition such as hypothyroidism and obstruction by colorectal cancer, and also may be due to high weather temperature and dehydration, [19].

Our result also showed that (55.84%) of patients had a family history of IBS and this is supported by a previous study [20].

Aggravating factors: Psychological factors (stress) are intrinsically associated with IBS and symptoms in a large percentage of patients. Two studies have explored the relationship between IBS severity and psychosocial factors. In the study by Dross-man et al this study agrees with ours showing the stress is highly attributed to severity [21].

Relieving factors in the present study, we found that drugs are superior to other remedies because patients seek fastest way for symptomatic relieve. Although a dietary control is also high but still drug is superior because some patients may not follow a balanced IBS suitable diet. Still a great number of patients follow some dietary control due to self-education after repeated attacks of IBS to avoid some kinds of food as spicy, gluten containing and even milk sometimes, also others seek for food with high fibers as vegetables and fruits especially if they have constipation predominant IBS [22].

Treatment: Anxiolytics are most commonly used for IBS attacks (27.27%) followed by proton pump inhibitors (PPI) (22.07%). Proton pump inhibitors (PPI) usage is an example of wrong usage by taking it without a prescription. Patients think that pain of IBS is the same as gastric or duodenal ulcer pain which reflects patients education level that is explored in our study. Some doctors may prescribe it because some IBS patient may have concurrent ulcer so will give it in a combination with other drugs and that's why some patients may be satisfied with PPI or antacids, although some research shows adverse effects in long term usage (increased risk of infection , reduced intestinal absorption of vitamins, minerals and renal damage) [23].

Antimicrobial drugs may be used in IBS patients as intestinal bacterial overgrowth is one of the pathophysiological causes of IBS. It is especially beneficial for those with diarrhoea and bloating. Patients still use the antimicrobials as treatment despite the risk of emergence of opportunistic bacterial infections and bacterial resistance [24].

Antispasmodics usage in our study show high effectiveness for IBS patients especially those with crampy abdominal pain and diarrhoea but the most important limitation is the anticholinergic properties of these agents [25] . Although antispasmodics are widely used as shown also in the present study, some researches show that herbal remedies have effect that is superior to antispasmodics, this was shown in a study where treatment with Anthem graveolens show significant $P \leq 0.05$ improvement in total score percent 78.13%, compared to mebeverine 53.13% [26].

Muscle relaxants also show high usage (19.48%) in the present study. This is supported by meta-analysis by Jailwala et al. which confirms the efficacy of muscle relaxants in the treatment of IBS. These drugs showed significant efficacy on the global assessment despite a high placebo effect (38% global improvement) [23].

There is also high usage of laxatives (11.68%) as they are helpful to control bowel motion and management of constipation.

Regarding patient's satisfaction in the present study, most patients are satisfied as they have IBS from relatively long time and now they learnt how to live with such pain, or maybe they have mild type that doesn't affect their daily life performance as it is mild pain and that can be managed by usage of drugs. Those who are not satisfied maybe they don't take their medication regularly or they use drugs without medical prescription also their stressful life events may play a role.

When severity is "mild," patients have low-intensity infrequent symptoms and good health-related quality of life and may not seek health care, and epidemiological studies of individuals with mild IBS indicate

that many have never been to a physician [27] .

When severity is “moderate,” there is more persistent and discomforting symptoms with some impaired health-related quality of life, reduced socializing, and some work absenteeism. Health-care visits occur, often to primary care physicians with perhaps occasional referrals to GI specialists. When IBS is “severe,” the symptoms are more frequent, even persistent, and of greater intensity, and associated with marked function impairment, psychosocial comorbidities, and health-care referrals to specialists [28] .

In conclusion: Diagnosing and managing IBS can be challenging due to the lack of a definitive diagnostic marker and effective treatment options. Data about the natural history of IBS is quite sparse. We believe that the scoring system is a very robust way of monitoring the severity of IBS.

REFRENCES

1. Lovell RM, Ford AC. Global prevalence of and risk factors for irritable bowel syndrome: a meta-analysis. Clinical gastroenterology and hepatology : the official clinical practice journal of the American Gastroenterological Association. 2012;10(7):712-21.e4.
2. Pimentel M, Talley NJ, Quigley EM, Hani A, Sharara A, Mahachai V. Report from the multinational irritable bowel syndrome initiative 2012. Gastroenterology. 2013;144(7):e1-5.
3. (UK). NCCfNaSC. Irritable Bowel Syndrome in Adults: Diagnosis and Management of Irritable Bowel Syndrome in Primary Care London: Royal College of Nursing (UK) 2008.
4. Brandt LJ, Bjorkman D, Fennerty MB, Locke GR, Olden K, Peterson W, et al. Systematic review on the management of irritable bowel syndrome in North America. The American journal of gastroenterology. 2002;97(11 Suppl):S7-26.
5. Canavan C, West J, Card T. The epidemiology of irritable bowel syndrome. Clinical epidemiology. 2014;6:71-80.
6. Mayer EA. Irritable Bowel Syndrome. New England Journal of Medicine. 2008;358(16):1692-9.
7. Saha L. Irritable bowel syndrome: Pathogenesis, diagnosis, treatment, and evidence-based medicine. World Journal of Gastroenterology : WJG. 2014;20(22):6759-73.
8. Jung H-K. Rome III Criteria for Functional Gastrointestinal Disorders: Is There a Need for a Better Definition? J Neurogastroenterol Motil. 2011;17(3):211-2.
9. Holtman GA, Lisman-van Leeuwen Y, Reitsma JB, Berger MY. Noninvasive Tests for Inflammatory Bowel Disease: A Meta-analysis. Pediatrics. 2016;137(1):e20152126.
10. Vahedi H, Ansari R, Mir-Nasseri M, Jafari E. Irritable bowel syndrome: a review article. Middle East J Dig Dis. 2010;2(2):66-77.
11. Wilkins T, Pepitone C, Alex B, Schade RR. Diagnosis and management of IBS in adults. American family physician. 2012;86(5):419-26.
12. Lee S-Y, Kim JH, Sung I-K, Park H-S, Jin C-J, Choe WH, et al. Irritable Bowel Syndrome Is More Common in Women Regardless of the Menstrual Phase: A Rome II-based Survey. Journal of Korean Medical Science. 2007;22(5):851-4.
13. Kim YS, Kim N. Sex-Gender Differences in Irritable Bowel Syndrome. J Neurogastroenterol Motil. 2018;24(4):544-58.
14. Andrews EB, Eaton SC, Hollis KA, Hopkins JS, Ameen V, Hamm LR, et al. Prevalence and demographics of irritable bowel syndrome: results from a large web-based survey. Alimentary pharmacology & therapeutics. 2005;22(10):935-42.
15. Patrick DL, Drossman DA, Frederick IO, DiCesare J, Puder KL. Quality of life in persons with irritable bowel syndrome: development and validation of a new measure. Digestive diseases and sciences. 1998;43(2):400-11.
16. Drossman DA, Toner BB, Whitehead WE, Diamant NE, Dalton CB, Duncan S, et al. Cognitive-behavioral therapy versus education and desipramine versus placebo for moderate to severe functional bowel disorders. Gastroenterology. 2003;125(1):19-31.
17. Labus JS, Mayer EA, Chang L, Bolus R, Naliboff BD. The central role of gastrointestinal-specific anxiety in irritable bowel syndrome: further validation of the visceral sensitivity index. Psychosomatic medicine. 2007;69(1):89-98.
18. Yao X, Yang YS, Cui LH, Zhao KB, Zhang ZH, Peng LH, et al. Subtypes of irritable bowel syndrome on Rome III criteria: a multicenter study. Journal of gastroenterology and hepatology. 2012;27(4):760-5.
19. Chatoor D, Emmnauel A. Constipation and evacuation disorders. Best practice & research Clinical gastroenterology. 2009;23(4):517-30.

20. El-Salhy M. Irritable bowel syndrome: diagnosis and pathogenesis. World J Gastroenterol. 2012;18(37):5151-63.
21. Popa SL, Leucuta DC, Dumitrascu DL. Pressure management as an occupational stress risk factor in irritable bowel syndrome: A cross-sectional study. Medicine (Baltimore). 2018;97(49):e13562-e.
22. health ad. Irritable Bowel Syndrome (IBS) 2019 [cited 2019 15/10/2019]. Available from: http://www.arizonadigestivehealth.com/health-topics/irritable-bowel-syndrome-ibs/.
23. Poynard T, Regimbeau C, Benhamou Y. Meta-analysis of smooth muscle relaxants in the treatment of irritable bowel syndrome. Alimentary pharmacology & therapeutics. 2001;15(3):355-61.
24. Laterza L, Ianiro G, Scoleri I, Landi R, Bruno G, Scaldaferri F, et al. Rifaximin for the treatment of diarrhoea-predominant irritable bowel syndrome. Expert opinion on pharmacotherapy. 2015;16(4):607-15.
25. Chey WD, Maneerattaporn M, Saad R. Pharmacologic and Complementary and Alternative Medicine Therapies for Irritable Bowel Syndrome. Gut and Liver. 2011;5(3):253-66.
26. Imad Hashim M. Use of Anethum graveolens in the management of patients with Irritable Bowel Syndrome. Mustansiriya Medical Journal. 2012;11(1):94-8.
27. Drossman DA, Li Z, Andruzzi E, Temple RD, Talley NJ, Thompson WG, et al. U.S. householder survey of functional gastrointestinal disorders. Prevalence, sociodemography, and health impact. Digestive diseases and sciences. 1993;38(9):1569-80.
28. Drossman DA, Chang L, Bellamy N, Gallo-Torres HE, Lembo A, Mearin F, et al. Severity in irritable bowel syndrome: a Rome Foundation Working Team report. The American journal of gastroenterology. 2011;106(10):1749-59; quiz 60.