

Effect of Ispaghula and Oxyphenonium Bromide on the Symptoms of Irritable Bowel Syndrome - A Comparative Study

B Paik¹, SK Saha², H Masud², MA Kabir², PK Roy³, M Hasan³

¹Assistant Professor, Department of Gastroenterology, Khulna Medical College, Khulna, ²Associate Professor, ³Professor, Department of Gastroenterology, BSMMU, Shahbag, Dhaka.

Abstract:

Background: Irritable bowel syndrome is a chronic continuous or remittent gastrointestinal illness characterized by frequent unexplained symptoms that include abdominal pain, bloating, and bowel disturbance, in our country, no study has been conducted using the Ispaghula husk and oxyphenonium bromide for the treatment of IBS patients. **Objectives:** To compare the efficacy of treatment with Ispaghula husk and Oxyphenonium bromide. **Methods:** Total sixty patients diagnosed clinically as irritable bowel syndrome irrespective of subtype who fulfilled the Rome II criteria were included equally into two groups-Group-I (Ispaghula group) & Group-II (Oxyphenonium group). In Group-I patients were given 30gm of Ispaghula husk at night daily and in Group-II patients were given 5mg of oxyphenonium bromide. After six weeks the clinical parameters of both the groups recorded in the case record forms were taken for analysis. **Results:** The mean age of the patients in the Group- I were 33.4±11.9 yrs and that of the patients in the Group-II were 31.0±17.5 yrs. Male and female ratio in group I was 14:1 and in group II was 23:7. Most of the patients were recorded in the age group of 26-30 in both groups . Symptom free patients were graded in 16.7% patients in Group-I and in 20% patients in Group-II. No improvement was occurred in 16.7% patients in Group-I and in 10% patients in Group-II. **Conclusions:** Ispaghula husk shows the better efficacy to improve the symptoms of IBS like abdominal pain or discomfort and sense of well being than Oxyphenonium bromide. Oxyphenonium bromide shows the better efficacy to decrease the stool frequency from base line than Ispaghula husk.

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Introduction:

Irritable bowel syndrome is a chronic continuous or remittent functional gastrointestinal disorders characterized by frequent unexplained symptoms that include abdominal pain, bloating, and bowel disturbance, which may be either diarrhea or constipation or an erratic bowel habit that has features of both¹.

IBS is remarkably prevalent in the general population, affecting approximately 10-15% of persons in the Western world. The annual incidence is probably 1-2%.² IBS is more common in male than female. On an average female to male ratio is 2.3:1.^{3,4,5} In Bangladesh the exact prevalence of IBS is not known. A few studies have been conducted in Bangladesh. Estimated prevalence of IBS in one study was reported to be 16.9% in the patients attending the out-patient department of a tertiary level

hospital.⁶ Another study on doctors and medical students of a medical college hospital in Dhaka found symptoms compatible with the diagnosis of IBS to be common.⁷ A population based study showed the apparent prevalence of IBS was 24.4% in a rural community in Bangladesh. With strict Rome criteria, the overall prevalence was 8.5% (10.7% in women and 5.8 in men).⁸

Multiple symptom scores and symptoms based criteria for IBS have been developed by IBS experts to facilitate the diagnosis of IBS. These criteria, which include the Manning criteria⁹, Rome I¹⁰ and Rome II¹¹ criteria are widely used to identify IBS patients for epidemiological studies and to ensure that appropriate IBS patients are enrolled in trials of IBS therapies.

There is no cure for IBS. Treatment should be appropriate to the individual, and the degree to which the symptoms seem to affect his life. Very few drugs have been proven to be of value in the management of IBS. A great variety of

drugs have been used in the treatment of this syndrome, most often in open trials with anticholinergics.¹²⁻¹⁴

Dietary fibre supplements have been successful in the treatment of IBS as measured by double blind trials although there is evidence that at least 30gms of dietary fibre a day will improve constipation and some other symptoms.¹⁵

The efficacy of the Ispaghula husk and anticholinergics in the treatment of IBS have been evaluated in different studies.¹⁶⁻²⁰ Global IBS symptoms were improved in patient taking ispaghula husk. In these studies subgroup analysis of specific symptoms noted that abdominal pain was not improved. A study suggests that Ispaghula is useful in relieving constipation and improving well being in patients with IBS but is no more effective than placebo in relieving abdominal pain & distension.²¹ However no trial has studied the effect of oxephenonium bromide and Rome II criteria was not used as the basis for diagnosis. In our country, no study has been conducted using the Ispaghula husk and oxyphenonium bromide for the treatment of IBS patients.

The present study was conducted on the patients of IBS diagnosed on the basis of symptom-based multinational 'Rome II criteria'¹¹ to compare the efficacy of Ispaghula husk and Oxyphenonium bromide with assessment of symptomatic improvement in IBS patients irrespective of its subtype.

Methods:

The present study was a prospective, comparative & open study. This study was carried out at the department of Gastroenterology, Bangabandh Sheikh Mujib Medical University, Shahbag, Dhaka.

Inclusion criteria

A total number of 60 patients were selected for this study. Basis of inclusion and study groups were as follows:

Group-I (Ispaghula Group)

Thirty adults patients diagnosed clinically as irritable bowel syndrome irrespective of subtype who fulfilled the Rome II criteria were included in this group

Group II- (Oxyphenonium bromide group)

Another thirty patients diagnosed clinically as irritable bowel syndrome irrespective of subtype who fulfilled the Rome II criteria were included in this group.

Informed consent was obtained from each patient before entry into this study. Patients were selected from the out patient department of Gastroenterology, BSMMU, Dhaka.

Exclusion criteria

The exclusion criteria adopted were as follows :

- (i) Patients presenting the similar symptoms with other organic diseases like intestinal tuberculosis, intestinal lymphoma and colonic carcinoma
- (ii) Patient with other major systemic illness on the basis of history and clinical examination.
- (iii) Females who were pregnant

Detail clinical history and findings on physical examination were enrolled in a pre-designed case record form. Complete blood count, fasting & post prandial blood sugar, stool routine examination, USG of abdomen, double contrast x-ray of the colon, sigmoidoscopy or colonoscopy were done in relevant cases to exclude any organic disease.

In Ispaghula group thirty patients were given 30gm of Ispaghula husk dissolved with a glass of water at night daily for six weeks. In oxyphenonium group another thirty patients were given 5mg of oxyphenonium bromide in two divided doses for six weeks. After six weeks the clinical parameters of both the groups were recorded in the case record form.

Data collection, processing and analysis:

All the data were collected from the recorded pre-designed case record form & checked after entry into a computer, processed and analyzed by SPSS windows package. Statistical analysis was done by Chi-square test. P value <0.05 was taken as significant.

Results:

Sixty consecutive patients were included in this study. The mean age of the patients in the group-I were 33.4±11.9 yrs and that of the patients in the group-II were 31.0±17.5 yrs. Male and female ratio in group I was 14:1 and in group II was 23:7. The mean duration of complaints in group-I was 1.8±0.4 yrs. and in group-II it was 1.7±0.4 yrs (Table-I). Most of the patients were recorded in the age group of 26-30 in both groups (27% and 50% respectively) (Table-II & Fig-1). Abdominal pain or discomfort was improved in 23(76.7%) patients in group-I and in 20 (66%) in group-II. Abdominal pain or discomfort was not improved in 7 (23.3%) patients in group-I and in 10(33.3%) patients in group-II(Fig-II). Abdominal bloating was improved in 22 (73.3%) patients in group-I and in 17 (56.7%) patients in group-II. The difference was not significant (P>.05). Stool frequency became normal in 12 patients in both group but stool frequency decreased from the pretreatment value in 16 (53.3%) patients in group-I and 18 (60%) patients in group-II. Stool frequency increased in only 2 (6.7%) patients in group-I and none in group-II.

Table-I*Sociodemographic characteristics of the patients*

Parameters	Group-I (n=30)	Group-II (n=30)
Age in years (M±SD)	33.4±11.9	31.0±7.5
Male: Female	14:1	23:7
Abdominal pain	5(16.7%)	8(26.7%)
Abdominal Discomfort	25(83.3%)	22(73.3%)
Duration of complaints in years	1.8±0.4	1.7±0.4

Table-II*Frequency distribution of age group in two groups of IBS patients.*

Age	Group-I (n=30)		Group-II (n=30)	
	No	%	No	%
18-20	3	10	1	3.3
21-25	5	16.7	4	13.3
26-30	8	26.7	15	50
31-35	5	16.7	3	10
36-40	2	6.7	4	13.3
41-45	4	13.3	1	3.3
46-50	0	0	1	3.3
50+	3	10	1	3.3

Table-III*Baseline Symptoms characteristics in the two groups of patients*

Symptom characteristics	Group-I (n=30)		Group-II (n=30)	
	Male (n=51)	Female (n=9)	Male (n=51)	Female (n=9)
	No (%)	No. (%)	No (%)	No. (%)
Abdominal pain	5 (17.9)	0(0)	8(34.8)	0(0)
Abdominal Discomfort	23(82.1)	2(100)	15(65.2)	7(100)
Severity-Mild	20(71.4)	1(50)	19(82.6)	5(71.4)
Severity-Moderate	8(28.6)	1(50)	4(17.4)	2(28.6)
Relieving factors-Defecation	26(92.9)	2(100)	21(91.3)	7(100)
Relieving factors-passage of flatus	2(7.1)	0(0)	2(8.7)	0(0)
Nocturnal pain	2(7.1)	0(0)	1(4.3)	0(0)
Stool Consistency-lumpy	2(7.1)	0(0)	0(0)	0(0)
Stool Consistency-loose	26(92.9)	2(100)	21(91.3)	6(85.7)
Stool Consistency-watery	0(0)	0(0)	2(8.7)	1(14.3)
Passage of mucus	26(92.9)	1(50)	20(87)	7(100)
Bloating/abdominal distention	27(96.4)	2(100)	20(87)	6(85.7)
Borborygmi	27(96.4)	1(50)	17(73.9)	2(28.6)
Nocturnal frequency	6(21.4)	0(0)	4(17.4)	1(14.3)
Stool Passage-Straining	4(14.3)	1(50)	5(21.7)	2(28.6)
Stool Passage-Urgency	19(67.9)	0(0)	9(39.1)	1(14.3)
Stool Passage-Feeling of incomplete evacuation	20(71.4)	1(50)	16(69.6)	4(57.1)

Stool consistency became normal in 10 patients in both group. Stool consistency was lumpy in 11 (36.7%) patients in group-I and in 17(56.7%) patients in group-II after treatment. Stool was hard in 4 (13.3%) patients in group-I and in 3 (10%) patients in group-II. Stool consistency was watery in 5 (16.7%) patients in group-I and none in group-II.

Urgency of defecation was improved in the same number i.e. 20 (66.7%) in both groups (Fig 6). Feeling of incomplete evacuation was improved in 19 (63.3%) patients in group-I and in 17(56.7%) patients in group-II. This symptoms was not improved in 11(36.7%) patients and 13 (43.3%) in each group respectively (Fig. IV).

Sense of well being was experienced in 21 (70%) patients in group-I and in 14 (46.7%) in group-II. Sense of well being was not experienced in 9 (30%) patients and 16 (53.3%) patients respectively (Fig. V).

Overall assessment of efficacy of two drugs were graded. Symptom free patients were graded in 16.7% patients in group-I and in 20% patients in group-II. Mild symptoms were found in 43.3% patient in group-I and in 36.7% patients in group-II. Moderate symptoms were recorded in 23.3% patients in group-I and in 33.33% patient in group-II. No improvement was occurred in 16.7% patients in group-I and in 10% patients in group-II (Fig VI).

Table-IV
Improvement of Stool Characteristics from baseline after treatment in two groups of patients.

Symptoms Characteristics	Group-I (n=30)		Group-II (n=30)		P value
	No	%	No	%	
Stool frequency- normal	12	40	12	40	>.05
Stool frequency-decreased	16	53.3	18	60	>.05
Stool frequency-increased	2	6.7	0	0	>.05
Stool consistency-normal	10	33.3	10	33.3	>.05
Stool consistency-lumpy	11	36.7	17	56.7	>.05
Stool consistency-hard	4	13.3	3	10	>.05
Stool consistency-watery	5	16.7	0	0	>.05

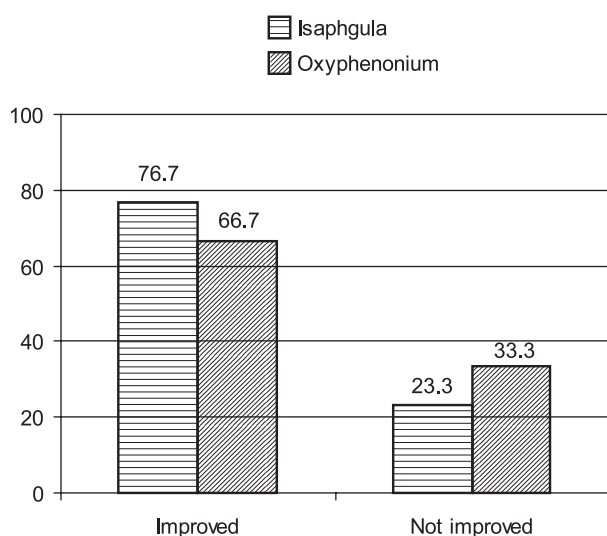


Fig.-1: Bar diagram showing improvement of abdominal pain in two groups of IBS patients

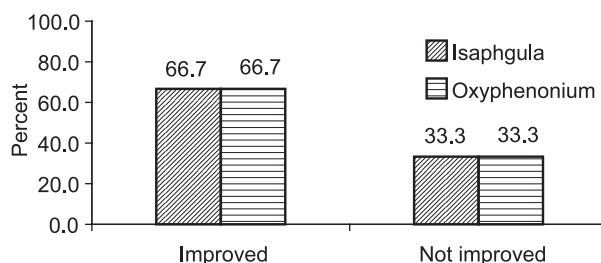


Fig.-3: Bar diagram showing improvement of urgency of defecation in two groups of IBS patients

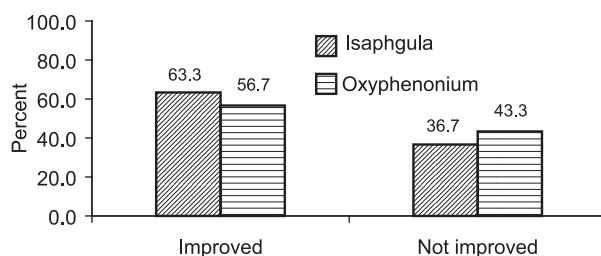


Fig.-4: Bar diagram showing improvement of feeling of incomplete evacuation in two groups of IBS patients

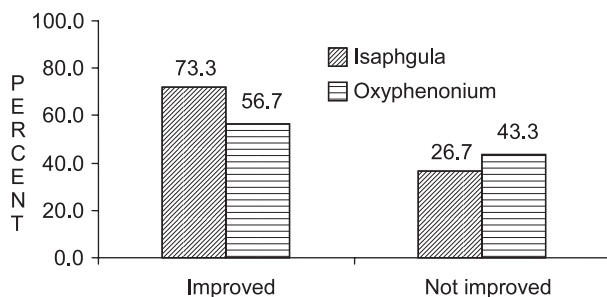


Fig.-2: Bar Diagram showing improvement of abdominal bloating in two groups of patients.

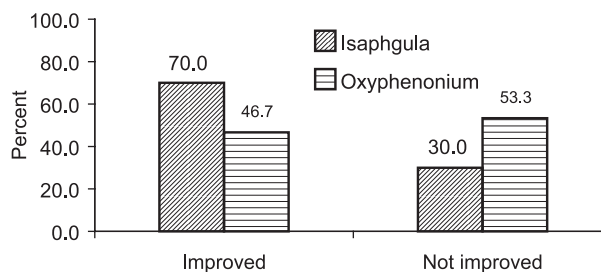


Fig. -5: Bar diagram showing improvement of sense of well being in two groups of IBS patients

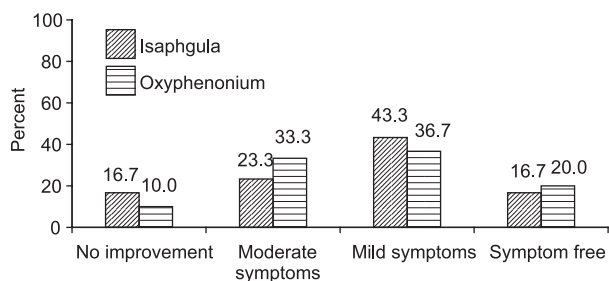


Fig-6: Bar diagram showing overall improvement in two groups of IBS patients

Discussion:

The role of drug treatment in irritable bowel syndrome has been difficult to evaluate for several reasons. The symptoms of IBS can mimic other conditions, leading to problems in diagnosis, they are often intermittent and can vary within the same patient and from patient to patient and they often respond to reassurance, placebo therapy and simple dietary advice.^{22,23} It is therefore essential that any trial of a pharmaceutical agent in IBS is designed to minimize the diagnostic uncertainties, to identify and exclude patients whose symptoms respond to diet and reassurance and to compare the effects of active drug with those of placebo. It is only by rigorous attention to these details that the role of drugs in this common and troublesome condition can be assessed.²⁴

A great variety of drugs have been used in the treatment of this syndrome, most often in open trials with anticholinergics.^{12,13,14} The value of bran, psyllium and other bulking materials is well established in the treatment of constipation in IBS.

Dietary fibre supplements have been successful in the treatment of IBS as measured by double blind trials although there is evidence that at least 30gms of dietary fibre a day will improve constipation and some other symptoms.¹⁵ The efficacy of the Ispaghula Husk and anticholinergics in the treatment of IBS in different studies have been evaluated.¹⁶⁻²⁰ Global IBS symptoms were improved in-patient taking ispaghula husk. In these studies subgroup analysis of specific symptoms noted that abdominal pain was not improved. A study suggests that Ispaghula is useful in relieving constipation and improving well being in patients with IBS but is no more effective than placebo in relieving abdominal pain & distension.²¹

A few randomized controlled trails evaluated the effectiveness of antispasmodics/anticholinergics agents for the treatment of IBS. Only one study demonstrated a statistically significant improvement in global IBS symptom

with antispasmodic agents compared with placebo.²¹ However no trial includes oxephenonium bromide and they did not select the patient based on the Rome II criteria.

In this study IBS symptoms have been found to be more marked in the age group of 26-30. This finding correlates with other studies that it is more common in the adult age group.²⁵ Male preponderance of IBS in this study confront to other epidemiological data that show the female preponderance. That data may be explained in that either women are more susceptible to bowel dysfunction or have a greater tendency to recognize and report alternation in bowel habit or it may be both. Our study conforms well the study of Pimparker from India and that there is male preponderance.²⁶

In this study abdominal pain or discomfort was the prime criteria to include one as a suspected case of IBS. So abdominal pain or discomfort was common in all 60 IBS patients. Abdominal pain or discomfort was present in 51 male patients and in 9 female patients. Mild pain was experienced in 39 male patients and in 6 female patients. Moderate pain was experienced in 12 male patients and in 3 female patients. In this study it was found that abdominal pain or discomfort was more prevalent in male than female, however the difference was not statistically significant. Abdominal pain or discomfort was more improved in Ispaghula group (76.7%) than oxyphenonium bromide group (66.7%) which was not statistically significant.

The study of Prior and PJ Whorwell¹⁹ suggests that Ispaghula is useful in relieving constipation and improving well being in patients with IBS but is no more effective than placebo in relieving abdominal pain & distension.

Abdominal bloating was more improved in group-I (73.3%) than group-II (56.7%) in this study, which was not statistically significant. Stool frequency became normal in similar fashion in both group from the baseline value. Stool frequency decreased more from the baseline value in group-II than group-I. Stool frequency increased more from the baseline data in group-I than group-II. All these datas are not statistically significant.

Urgency of defecation was improved in the same number of patients of both groups. Feeling of incomplete evacuation was improved more in group-I than group-II which was not statistically significant. Sense of well being was experienced more in group-I than group-II which did not reach the level of statistically significance (P=.06)

Overall assessment of efficacy of two drugs were graded. Symptom free patients were graded more in group-II than group-I but the difference was not statistically significant.

There were more patient with mild symptoms remained in group-I after treatment and more patients with moderate symptoms remained in group-II. No improvement was found more in group-I than group-II. These were not statistically significant.

Ritchi and Truelove¹⁶ in their study showed that each of the three agents lorazepam, hyoscine butyl bromide and Ispaghula husk caused a sustained symptomatic improvement in some of the patients, although only with Ispaghula was the difference between in real and dummy preparation statistically significant.

These therapeutic results, though far from perfect, show that the types of drug commonly used to treat IBS are of some value and may be additive in their effects. Lucy and Colleagues¹⁵ in their study showed that in irritable bowel syndrome, especially that associated with abdominal pain, the beneficial effects of bran are due to a placebo response which is independent an increase in stool weight. Cann, Read and Holdsworth²⁴ showed that coarse wheat bran was no better than placebo for most symptoms in irritable bowel syndrome, although its efficacy in constipation was confirmed.

In conclusion, IBS is more prevalent in the age group of 26-30 years. Males are more prevalent than females. Ispaghula husk shows the better efficacy to improve the symptoms of IBS like abdominal pain or discomfort, abdominal bloating, feeling of incomplete evacuation and sense of well being than Oxyphenonium bromide. Oxephenonium bromide shows the better efficacy to decrease the stool frequency from base line than Ispaghula husk. Oxyphenonium bromide shows the better efficacy to alter the stool consistency symptoms of IBS than Ispaghula husk. There is no difference of efficacy between ispaghula and oxyphenonium to alleviate the symptom of urgency of defecation in IBS.

References:

1. Snape WJ. Irritable bowel syndrome. In: Haubrich WS, Schaffer F. editors. Bockus gastroenterology. 5th ed. Philadelphia, WB Saunders Company, 1995: 1619-35.
2. Talley NJ. Irritable bowel syndrome: definition, diagnosis and epidemiology. In: Houghton LA, Whorwell PJ, editors. Clinical Gastroenterology. Landon: Bailliere Tindall, 1999; 13: 371-384
3. Thompson WG. Irritable bowel syndrome: Pathogenesis and Management. Lancet 1993; 341: 1569-1572.
4. Camilleri M, Ford MJ. Functional gastrointestinal disease and the autonomic nervous system: a way ahead ? Gastroenterology 1994; 106: 1114-1118.
5. Everhart JE, Renault PF. Irritable bowel syndrome in office based practice in the United States. Gastroenterology 1991; 100: 998-1005.
6. Raihan ASMA, Roy PK, Khanum M, Rahman MT, Hasan M. Manning criteria in the diagnosis of irritable bowel syndrome in Bangladesh. Bangladesh J Med 1995;6:59-61.
7. Rahman M. functional bowel disorders in apparently healthy people Bangladesh J Med 2001; 12: 105-112.
8. Masud MA, Hasan M, Azad Khan AK. Irritable bowel syndrome in a rural community in Bangladesh. Prevalence symptoms pattern, and Health care seeking behavior. Am J of Gastroenterol 2001; 96: 1547-1552.
9. Manning AP, Thompson WG, Heaton KW, Moris AF. Towards positive diagnosis of the Irritable bowel. BMJ 1978; 2: 653-665.
10. Thompson WG, Dodewall G, Drossman DA Irritable bowel syndrome: Guidelines for the diagnosis. Gastroenterol Int 1989; 2:92-95.
11. Drossman DA Rome II. The functional Gastrointestinal Disorders. McLean, Va, Degnan Associates 2000.
12. Baillie ATK et al. Role of Trimipramine in IBS: Practitioner 1974; 212: 890-894.
13. Drossman DA, Powell DW, Sessions JT Jr. The irritable bowel syndrome. Gastroenterology 1977; 73: 811-822.
14. Ivey KJ, Morrow AW. Role of anti depressant in IBS. Gastroenterology 1975; 68: 1300-1305.
15. Lucy MR, Clark ML, Lowndes Jo, Dowson AM. Is bran efficacious in irritable bowel syndrome? A double blind placebo controlled cross over study. Gut 1987; 28: 221-225.
16. Ritchie JA, Trulove SC. Treatment of irritable bowel syndrome with lorazepam, hyoscine butyl bromide and Ispaghula husk. B M J 1975; 1: 376-9.
17. Golechha AC, Chadda VS, Chadda S, et al. Role of ispaghula hus in the management of IBS. J Assoc Physicians India 1982: 30: 353-5.
18. Arthurs Y, Fiedling JF Double blind trial of ispaghula/polaxamer in the irritable bowel syndrome. Irish Med J 1983;76:253-258.
19. Prior A, Whorwell PJ. Double blind study of ispaghula in irritable bowel syndrome. Gut 1987; 28:1510-3.
20. Jalihal A, Kurian G. Ispaghula therapy in irritable bowel syndrome: improvement on overall well being is related to reduction in bowel dissatisfaction. J Gastroenterol Hepatol 1990; 5: 507-513.
21. Page J, Dirnberger GM. Treatment of the irritable bowel syndrome with ventyl. J Clin Gastroenterol 1981; 3: 153-156.
22. Smith RC, Greenbaun DS, Vancouver TB et al. Gender difference in Manning criteria in the irritable bowel syndrome. Gastroenterology 1991; 100: 591-595.
23. Chaudhury NA, Truelove SC. The irritable colon syndrome. Q J Med 1962; 31: 307-322.
24. Cann PA, Read NW, Holdsworth CD, Barends D. Role of Loperamide and placebo in management of irritable bowel syndrome. Dig Dis and Sci. 1984; 29: 239-247.
25. Talley NJ, O'Keefe EA, Zinsmeister AR, Melton IJ III. Prevalence of gastrointestinal symptoms in the elderly: a population based study. Gastroenterology 1992;102:895-901.
26. Pimparkar BD. Irritable colon syndrome. J Ind Med Assoc 1970; 54:95-105.