

COMPARATIVE CLINICAL EVALUATION OF CERTAIN HERBO-MINERAL PREPARATIONS & SHIRODHARA IN THE MANAGEMENT OF VATIKA GRAHANI VIS-A-VIS IRRITABLE BOWEL SYNDROME

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ABSTRACT

Irritable Bowel Syndrome (IBS) is one of the most common diagnoses given to patients attending gastroenterology clinics. Psychological and somatic management is also desirable in IBS due to depression or anxiety. In *Vatika grahani*, due to *mandagni*, food remain undigested which get fermented called as *ama*. *Saman avrit apan vayu* is responsible for abnormal gut motility. The role of *Vata dosha*, psychological disturbances, chronic nature of the disease and somatic changes & illness of the GIT system are the main culprits of this disease. So, the *Vatika Grahani Dosha* described by *Acharaya Charaka* having close resemblance with IBS. Thus study for IBS was carried out on 60 randomly selected patients at Sir Sunder Lal Hospital, Banaras Hindu University. The drug *Panchamrita parpati* with *Ashwagandha churna* in dose of (250 +750) mgs BD with normal water and the *Shirodhara* using *Medhya kashaya* were given to the patient. The synergistic effect of oral drug and therapeutics procedure demonstrated significant results in effective management of IBS. Therefore, this study may be extended for large scale clinical trials.

Keywords: IBS, *Vatika grahani*, *Panchamrita Parpati*, *Ashwagandha churna*, *Shirodhara*

INTRODUCTION

IBS is a chronic functional disorder of the gastrointestinal system. Patients experience abdominal pain and altered bowel habit, with either predominantly diarrhea (IBS-D), constipation (IBS-C), or both (IBS-M). There is no definitive investigation as no biomarker has been found, so IBS is diagnosed clinically. The earliest reports describing IBS are from the turn of the 19th and 20th century.¹ IBS remained “frequently misdiagnosed and poorly understood” into the 1970s, with the problem of unsuccessful, or unnecessary,

surgery continuing.² IBS syndrome is a relapsing functional bowel disorder in the absence of structural pathology, defined by symptom-based diagnostic criteria (Rome III criteria³). In IBS, symptoms are exacerbated or initiated by psychological stress⁴ (or stressful life event). The pathogenesis of IBS is poorly understood, although roles of gastrointestinal motor abnormalities and visceral hypersensitivity, central neural dysfunction, abnormal psychological disturbances, Immune activation & mucosal inflammation, altered

gut flora, stress and luminal factors have been proposed. The new Rome IV criteria⁵ have begun to shift away from current term “functional G.I disorder” towards disorder of gut brain axis. The classification⁶ of IBS is of four types i.e. IBS-D, IBS-C, IBS-M, IBS-I. In IBS, most of the patients are alternate between episodes of diarrhoea and constipation.

AIM & OBJECTIVES:

- a) To study the conventional concepts of IBS and its possible correlates in Ayurveda.
- b) Evaluate the clinical efficacy and safety of *Panchamrita parpati* with *Ashwagandha churna* in the cases of IBS (*Vatika Grahani roga*).
- c) To develop *Panchamrita parpati* as an efficacious drug with combination of *Ashwagandha churna* and *Shirodhara* by *Medhya kasaya* in the management of IBS.

The drug *Panchamrita Parpati*⁷ with *Ashwagandha Churna* is an effective formulation which is able to control and regularize the symptoms of IBS. The specifically customized *Shirodhara*⁸ using *medhya kasya* restore the psychological functions.

MATERIAL & METHODS:

Source of study Plan of Study- Total 60 patients will be selected irrespective of their sex, race, caste, religion for the above study from the OPD/IPD of Department of *Kayachikitsa*. **Clinical study:** The control randomized clinical study has been conducted by selecting the patient on the basis of the following inclusion and exclusion criteria.

Inclusion Criteria:

1. Patients of either sex with age between 20 and 65 years
2. Known case of IBS as per Rome III criteria (2006): Symptoms of recurrent abdominal pain or discomfort and a marked change in bowel habit for at least 6 months, with symptoms experienced on at least 3 days/month in the last 3 months associated with two or more of the following:
 - a. Pain is relieved by defecation
 - b. Onset associated with change of frequency of stools
 - c. Onset associated with a change in form (appearance) of stools.
3. Presence of cardinal features of *Vatika Grahani*

dosha.

Exclusion Criteria:

1. Patients with features of bleeding per rectum, infection and evidence of malignancy.
2. Patients with diabetes mellitus, poorly controlled hypertension, major cardiac problems long term drug treatment Rheumatoid arthritis etc.
3. Patients on prolonged (>6 weeks) medication with corticosteroids, anti-depressants, anti-cholinergics etc., or any other drugs.

Demographic & Constitutional Profile: The demographic profile included name, age, sex, marital status, education, occupation, socio-economic status, address, rural or urban, dietary habit, addiction, family history, chronicity, *deha prakriti*, *manas prakriti*, *manobala (satva)*, treatment history, incidence of symptoms of patients.

The Study Groups: Following inclusion and exclusion criteria the 60 patients were selected and registered for the study, only 54 patients, turned up for full follow-ups. They were sorted into three groups.

- a) The first **group-A** comprised of 20 patients 18 were turned up for full follow up were put on combination of chlordiazepoxide (5 mg)+clidinium bromide (2.5 mg) 1tablet TDS for 90 days.
- b) The second **group-B** comprised of 20 patients 18 were turned up for full follow up were put on the drug *Panchamrita Parpati* with *Ashwagandha churna* (250mg+750mg) 1gm B.D. for 90 days.
- c) The third **group- C** comprised of 20 patients 18 were turned up for full follow up were put on combination of *Panchamrita parpati* with *Ashwagandha churna* for 90 days and *Shirodhara* with *Medhya Kashya* for 14 days.

Results:

Demographic and Constitutional Study Result

Incidence of Age: Maximum patients belonged to the age group 0-30 years having 23 (38.3%) followed by the age group 30-45 years 20 (33.3%). This indicates that IBS is disease of young and middle aged persons.

Incidence of Sex: The study shows greater number of patients were Male 48 (80%) followed by female in 12 (20%). These observations reflect that *Vataja Grahani*

is more common in male in the current scenario of IBS.

Incidence of Religion: The study shows that the more number belonged to Hindu religion 57 (95%) followed by Muslim 3 (5%). Probably due to situation of hospital in a region, where Hindu dominating patients are more in number.

Socio economic status: The study shows that the more patients were belonged to the lower middle class 53 (i.e. 88.3%) followed by 7(11.7%) from upper middle class group. This reflects that lower middle class people fight for variety of stressors for their existence.

Education: The study shows that the more patients were 33 (55%) graduates followed by up to 20(33.3%) were higher secondary passed, while 7(11.7%) were illiterate.

Marital status: The study shows that 36 (60%) of the patients were married and rest were unmarried patients which was 24 (40%).

Symptoms of IBS:

Onset & Progression of disease: 60 patients there were 48 (80%) had chronic onset of disease whereas 59 (98.3%) had slow progression of the disease.

Abhyaharanshakti: *Abhyaharanshakti* was *madhyam* in 53 (88.3%) and *awara* in 7 (11.7%) in IBS (*Vatika grahani* patients) patients. This data shows that improper intake of food causes *Grahani* disorders. (Refer to Table no.1 and Fig.1)

Jaranashakti: It was observed *awara* in 51 (85%) and *madhyam* in 8 (13.3%) patients. This data shows that improper digestion of food causes *Grahani* disorders. (Refer to Table no.2 and Fig.2)

Dietary habits: The study shows that the majority of the registered patients had non-vegetarian or mixed dietary habits i.e. 33 (55%) while 27 (45%) recorded vegetarian type of food habit. (Refer to Table no.3 and Fig.3).

Sleep pattern (Nidra): The study shows that the majority of the registered patients 37 (65%) had normal sleep while 12 (20%) had reduction in their sleeping hours rest 11 (18.3%) had increased sleep. (Refer to Table no.4 and Fig.4)

Dehaprakriti: The incidence of *Dehaprakriti* or *Sharirik Prakriti* was relatively higher 24(40%) in

Vata-pitta predominant, followed by 26(43.3%) in *Kapha-vata* predominant and 10(16.7%) in *Pitta-vata* predominant *Dehaprakriti*. Thus *Vata* predominant trait appears to be more vulnerable for *Grahani* disease. (Refer to Table no.5 and Fig.5)

Manasprakriti: The incidence shows that *Manas prakriti* relatively higher 48 (80%) in *Rajasika* followed by 12(20%) in *Tamasika manas prakriti*. Thus, *Rajasika* trait appears to be more vulnerable for *Grahani* disease (Refer to Table no.6and Fig.6)

Vikriti:

The incidence of *Vikriti* was relatively higher 44 (73.3%) in *Prakritisamsamvaya* predominant, followed by 16(26.7%) in *Vikritivishamsamvaya* predominant *Vikriti*. Thus *Prakritisamsamvaya* predominant trait appears to be more vulnerable for *Grahani* disease. (Refer to Table no.7 and Fig.7)

Kostha: It was observed *Madhyam* in 43 (71.7%) and *Mradu* in 15 (25%) patients. Only 2 (3.3%) patients were obtained in *Kroora Kostha* properties. (Refer to Table no.8 and Fig.8)

Agni status: It was observed *Manda* in 32 (53.5%) and *Visham* in 24 (40%) patients. This data shows that improper indigestion or digestive capacity of a person for food causes *Grahani* disorders. (Refer to Table no.9 and Fig.9)

Clinical Profile study results

Abdominal Pain / Tenasmus: In Group A, Group B and Group C with the help of Friedman Test, χ^2 9.217(p=.027), 39.585(p=.000) and 28.609(p=.000) respectively. It was observed that the clinically improvement are greater in group C, followed by group B and group A. (Refer to Table no.10 and Fig.10)

Frequency of Stool: In Group A, Group B and Group C with the help of Friedman Test, χ^2 31.969(p=.000), 38.899(p=.000) and 31.936(p=.000) respectively. Here clinically all patients in their respective groups show significant improvement but group C shows good regulation over bowel habits. (Refer to Table no.11 and Fig.11)

Mucous in Stool: In Group A, Group B and Group C with the help of Friedman Test, χ^2 20.172(p=.000), 23.487(p=.000) and 36.058(p=.000) respectively. Here group C shows more efficacious result due to

psychological benefits to the patients. (Refer to Table no.12 and Fig.12)

Gas or Flatulence: In Group A, Group B and Group C with the help of Friedman Test, χ^2 24.382(p=.000), 28.415(p=.000) and 41.081(p=.000) respectively. Here all groups shows benefits statistically but clinically it was observed that the clinically improvement are greater in group C, followed by B & A. (Refer to Table no.13 and Fig.13)

Vomiting and Nausea: In Group A, Group B and Group C with the help of Friedman Test, χ^2 14.143(p=.003), 10.031(p=.018) and 19.615(p=.000) respectively. Here most significant group was group C then A and B. (Refer to Table no.14 and Fig.14)

Perception & Mental well-being: In Group A, Group B and Group C with the help of Friedman Test, χ^2 17.700(p=.001), 20.143(p=.000) and 29.817(p=.000) respectively. Here group C shows more efficacious result due to psychological benefits to the patients. (Refer to Table no.15 and Fig.15)

Inter Group Comparison and Pair wise Group Comparison

On inter group comparison, the treatment for the abdominal pain, gas formation, feeling of incomplete evacuation, frequency of stool, mucoid stool and was statistically significant and highly significant whereas constipation and dryness of skin was not found significant. In pair wise comparison for treatment, group C was found better than other for abdominal pain, perception and mental well-being whereas treatment group B to group C performed significantly better in case of abdominal pain/tenasmus and feeling of incomplete evacuation. In case of abdominal pain/tenasmus, it was observed that the clinically improvement are greater in group C, followed by group B and group A. In case of frequency of stool, here clinically all patients in their respective groups show significant improvement but group C shows good regulation over bowel habits. In case of mucous in stool and Gas or flatulence, all the three groups were statistically highly significant in group A, B & C. But group C shows more clinically efficacious results than group B and A. In case of constipation, all the three groups was significant in group B and statistically

highly significant in group A & C. Here with the help statistics of clearly found that patients of group C get better improvement than group A & B. In case of Vomiting & Nausea and Perception & mental well-being, all the three groups was significant in group B and statistically highly significant in group A & C. Here most significant group was group C then group A and last group B also clinically patients of group C more efficacy over the other groups.

DISCUSSION

In the demographic, constitutional & clinical study shows that the IBS affects mostly Young & middle aged people, married people, mixed type of dietary habits. Service men, housewives, & students, educated and lower middle class peoples, mostly addicted to some abusive tobacco and alcoholic products, average and thin build persons, *madhyama* and *avara manobala (sattva)*, *vataja* predominant *deha prakriti* people, *rajas* predominant *manas prakriti* persons. In the clinical studies the result of group C and group B showed encouraging as compared to group A. The mean grade score of symptoms like abdominal pain, perception & mental well-being, vomiting & nausea before and after the treatment with the drug combination of *panchamrita parpati* with *ashwagandha churna* and *shirodhara* showed highly significant improvement as compared to drug combination of chlor-diazepoxide+clidinium bromide 1 tablet TDS whereas the allopathic drug also showed significant improvement in abdominal pain, frequency of stool. The inter group comparison between group C was highly significant response over group A. This study reveals that combination of *panchamrita parpati* with *ashwagandha churna* and *shirodhara* are claimed to be very effective against the gut motility, tonicity of intestinal muscles, restores the physiological functions of the intestine & bowel, and regularizes bowel movement.

CONCLUSION

This present study concluded that the synergistic effect of *ayurvedic* drug and therapeutic procedure alleviate IBS symptoms most effectively with respect to standard modern drugs. Drugs used in this study hav-

ing *deepan*, *pachan* and *vatanuloman* properties normalize the status of *agni* & *vayu*. *Panchamrita papati* is a promising mineral drug having different qualities and the cumulative effect of *parpati* is to regulation over the gut physiology and also fulfil the nutritive deficit of the body. It may promote the control and coordination over messieners' and aurbach's plexus or ENS system by inhibition and excitation of different neurotransmitter and others. It helps in proper coordination between ENS and CNS by which the secretion,

contractions of GI tract muscles & sphincters. In IBS patient's psychological disturbance and stress may results in hyper vigilance to body sensation at CNS level and visceral hypersensitivity at the gut level. Anti-stress and sedative effect of *Medhya kasaya Shirodhara* may reduce the vigilance and sensitivity respectively. From this observation, it is seen that drug-*Panchamrita parpati* with *ashwagandha churna* and *Shirodhara* was highly effective in treating *Vatika Grahani Roga*.

Table 1: Showing incidence of *Abhyvahanashakti*

<i>Abhyvarana shakti</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2	19 (95%)	18 (90%)	16 (80%)	53 (88.3%)
	3	1 (5%)	2 (10%)	4 (20%)	7 (11.7%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 2: Showing incidence of *Jaranashakti*

<i>Jarana Shakti</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	0 (0%)	0 (0%)	1 (5%)	1 (1.7%)
	2	4 (20%)	4 (20%)	0 (0%)	8 (13.3%)
	3	16 (80%)	16 (80.0%)	19 (95%)	51 (85%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 3: Showing incidence of Dietary habits

Food Habit(n=60)	Grade	Group			Total
		A	B	C	
	1	7 (35%)	9 (45%)	11 (55%)	27 (45%)
	2	13 (65%)	11 (55%)	9 (45%)	33 (55%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 4: Showing incidence of Sleep pattern

<i>Nidra</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	13 (65%)	11 (55%)	13 (65%)	37 (61.7%)
	2	5 (25%)	3 (15%)	3 (15%)	11 (18.3%)
	3	2 (10%)	6 (30%)	4 (20%)	12 (20%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 5: Showing incidence of *Dehaprakriti*

<i>Sharirik Prakriti</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	2	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	3	0 (0%)	0 (0%)	0 (0%)	0 (0%)
	4	9 (45%)	6 (30 %)	9 (45%)	24 (40%)
	5	9 (45%)	9 (45%)	8 (40%)	26 (43.3%)
	6	2 (10%)	5 (25%)	3 (15%)	10 (16.7%)
	7	0(0%)	0 (0%)	0 (0%)	0 (0%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 6: Showing incidence of *Manasprakriti*

<i>Manas prakriti</i> (n=60)	Group A	Group B	Group C	Total
<i>Rajasika</i>	16(80%)	17(85 %)	15(75%)	48(80%)
<i>Tamasika</i>	4(20%)	3(15%)	5(25%)	12(20%)
<i>Satvika</i>	0(0%)	0(0%)	0(0%)	0(0%)
Total	20(100%)	20(100%)	20(100%)	60(100%)

Table 7: Showing incidence of *Vikriti*

<i>Vikriti</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	16 (80%)	13 (65%)	15 (75%)	44 (73.3%)
	2	4 (20%)	7 (35%)	5 (25%)	16 (26.7%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 8: Showing incidence of *Kostha*

<i>Kostha</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	0 (0%)	2 (10%)	0 (0%)	2 (3.3%)
	2	17 (85%)	16 (80%)	10 (50%)	43 (71.7%)
	3	3 (15%)	2 (10%)	10 (50%)	15 (25%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Table 9: showing incidence of *Agni* status

<i>Agni</i> (n=60)	Grade	Group			Total
		A	B	C	
	1	12 (60%)	10 (50%)	10 (50%)	32 (53.3%)
	2	0 (0%)	3 (15%)	1 (5%)	4 (6.7%)
	3	8 (40%)	7 (35%)	9 (45%)	24 (40%)
	4	0 (0%)	0 (0%)	0 (0%)	0 (0%)
Total		20 (100%)	20 (100%)	20 (100%)	60 (100%)

Clinical Profile study results

Table 10: showing incidence of Abdominal Pain / Tenasmus

Groups	Grade	Abdominal pain/Tenasmus No. and (%) of cases (n=54)				Within the group comparison Friedman test
		BT	F1	F2	F3(AT)	
Group A n = 18	0	4(20%)	4(21.1%)	7(38.9%)	6(33.3%)	$\chi^2=9.217$ p =.027
	1	7(35%)	14(73.7%)	9(50%)	11(61.1%)	
	2	9(45%)	1(5.3%)	2(11.1%)	1(5.6%)	
	3	0(0%)	0(0%)	0(0%)	0(0%)	
Group B n = 18	0	0(0%)	0(0%)	8(44.4%)	9(50%)	$\chi^2=39.585$ p =.000
	1	10(50%)	14(77.8%)	10(55.6%)	9(50%)	
	2	10(50%)	4(22.2%)	0(0%)	0(0%)	
	3	0(0%)	0(0%)	0(0%)	0(0%)	
Group C n = 18	0	3(15%)	6(33.3%)	8(44.4%)	12(66.7%)	$\chi^2=28.609$ p =.000
	1	5(25%)	11(61.1%)	9(50%)	5(27.8%)	
	2	11(55%)	1(5.6%)	1(5.6%)	1(5.6%)	
	3	1(5%)	0(0%)	0(0%)	0(0%)	
Between the group comparison Kruskal -Wallis test		$\chi^2=1.279$ p =.528	$\chi^2=8.517$ p =.014	$\chi^2=.488$ p =.783	$\chi^2=3.555$ p =.169	

Table 11: Showing incidence of Frequency of Stool

Groups	Grade	Frequency of stool No. and (%) of cases(n=54)				Within the group comparison Friedman test
		BT	F1	F2	F3(AT)	
Group A n = 18	0	2(10%)	3(15.8%)	3(16.7%)	4(22.2%)	$\chi^2=31.969$ p =.000
	1	2(10%)	14(73.7%)	14(77.8%)	13(72.2%)	
	2	14(70%)	2(10.5%)	1(5.6%)	1(5.6%)	
	3	2(10%)	0(0%)	0(0%)	0(0%)	
	4	0(0%)	0(0%)	0(0%)	0(0%)	
Group B n = 18	0	1(5%)	1(5.6%)	2(11.1%)	2(11.1%)	$\chi^2=38.899$ p =.000
	1	1(5%)	10(55.6%)	9(50%)	15(83.3%)	
	2	10(50%)	6(33.3%)	6(33.3%)	1(5.6%)	
	3	7(35%)	1(5.6%)	1(5.6%)	0(0%)	
	4	1(5%)	0(0%)	0(0%)	0(0%)	
Group C n = 18	0	0(0%)	0(0%)	2(11.1%)	3(16.7%)	$\chi^2=31.936$ p =.000
	1	5(25%)	14(77.8%)	12(66.7%)	14(77.8%)	
	2	9(45%)	3(16.7%)	3(16.7%)	1(5.6%)	
	3	5(25%)	0(0%)	1(5.6%)	0(0%)	
	4	1(5%)	1(5.6%)	0(0%)	0(0%)	
Between the group comparison Kruskal -Wallis test		$\chi^2=3.831$ p =.147	$\chi^2=5.119$ p =.077	$\chi^2=4.132$ p =.127	$\chi^2=.556$ p =.757	

Table 12: Showing incidence of Mucous in Stool

Groups	Grade	Mucous in Stool No. and (%) of cases(n=54)				Within the group comparison Friedman test
		BT	F1	F2	F3(AT)	
Group A n = 18	0	2(10%)	4(21.1%)	4(22.2%)	8(44.4%)	$\chi^2=20.172$ p =.000
	1	8(40%)	11(57.9%)	10(55.6%)	9(50%)	
	2	8(40%)	4(21.1%)	4(22.2%)	1(5.6%)	
	3	2(10%)	0(0%)	0(0%)	0(0%)	
Group B n = 18	0	6(30%)	8(44.4%)	8(44.4%)	9(50%)	$\chi^2=23.487$ p =.000
	1	3(15%)	6(33.3%)	7(38.9%)	9(50%)	
	2	7(35%)	4(22.2%)	3(16.7%)	0(0%)	
	3	4(20%)	0(0%)	0(0%)	0(0%)	
Group C n = 18	0	1(5%)	4(22.2%)	6(33.3%)	8(44.4%)	$\chi^2=36.058$ p =.000
	1	7(35%)	12(66.7%)	12(66.7%)	10(55.6%)	
	2	12(60%)	2(11.1%)	0(0%)	0(0%)	
	3	0(0%)	0(0%)	0(0%)	0(0%)	
Between the group comparison Kruskal -Wallis test		$\chi^2=.076$ p =.962	$\chi^2=1.113$ p =.573	$\chi^2=2.483$ p =.289	$\chi^2=.255$ p =.151	

Table 13: Showing incidence of Gas or Flatulence

Groups	Grade	Gas or Flatulence No. and (%) of cases(n=54)				Within the group comparison Friedman test
		BT	F1	F2	F3(AT)	
Group A n = 18	0	0(0%)	1(5.3%)	1(5.6%)	1(5.6%)	$\chi^2=24.382$ p =.000
	1	2(10%)	8(42.1%)	11(61.1%)	12(66.7%)	
	2	15(75%)	10(52.6%)	6(33.3%)	5(27.8%)	
	3	3(15%)	0(0%)	0(0%)	0(0%)	
Group B n = 18	0	0(0%)	0(0%)	0(0%)	0(0%)	$\chi^2=28.415$ p =.000
	1	4(20%)	10(55.6%)	13(72.2%)	18(100%)	
	2	14(70%)	8(44.4%)	5(27.8%)	0(0%)	
	3	2(10%)	0(0%)	0(0%)	0(0%)	
Group C n = 18	0	0(0%)	1(5.6%)	2(11.1%)	2(11.1%)	$\chi^2=41.081$ p =.000
	1	2(10%)	10(55.6%)	11(61.1%)	16(88.9%)	
	2	11(55%)	6(33.3%)	5(27.8%)	0(0%)	
	3	7(35%)	1(5.6%)	0(0%)	0(0%)	
Between the group comparison Kruskal -Wallis test		$\chi^2=3.780$ p =.151	$\chi^2=.392$ p =.822	$\chi^2=.370$ p =.831	$\chi^2=7.092$ p =.029	

Table 14: Showing incidence of Vomiting and Nausea

Groups	Grade	Vomiting and Nausea NO. and (%) of cases(n=54)				Within the group comparison Friedman test
		BT	F1	F2	F3(AT)	
Group A n = 18	0	7(35%)	10(52.6%)	10(55.6%)	13(72.2%)	$\chi^2=14.143$ p =.003
	1	11(55%)	9(47.4%)	8(44.4%)	5(27.8%)	
	2	2(10%)	0(0%)	0(0%)	0(0%)	
	3	0(0%)	0(0%)	0(0%)	0(0%)	
Group B n = 18	0	11(55%)	12(66.7%)	14(77.8%)	14(77.8%)	$\chi^2=10.031$ p =.018
	1	7(35%)	5(27.8%)	3(16.7%)	4(22.2%)	
	2	1(5%)	1(5.6%)	1(5.6%)	0(0%)	

	3	1(5%)	0(0%)	0(0%)	0(0%)	
Group C n = 18	0	5(25%)	7(38.9%)	10(55.6%)	13(72.2%)	$\chi^2=19.615$ p =.000
	1	12(60%)	10(55.6%)	8(44.4%)	5(27.8%)	
	2	3(15%)	1(5.6%)	0(0%)	0(0%)	
	3	0(0%)	0(0%)	0(0%)	0(0%)	
Between the group comparison Kruskal -Wallis test		χ^2 =3.050 p =.218	$\chi^2=2.495$ p =.287	$\chi^2=1.950$ p =.377	$\chi^2=.189$ p =.910	

Table 15: showing incidence of Perception & Mental well-being

Groups	Grade	Perception & Mental well-being No. and (%) of cases (n=54)				Within the group comparison Friedman test
		BT	F1	F2	F3(AT)	
Group A n = 18	0	0(0%)	0(0%)	0(0%)	0(0%)	$\chi^2=17.700$ p =.001
	1	5(25%)	12(63.2%)	13(72.2%)	11(61.1%)	
	2	12(60%)	6(31.6%)	5(27.8%)	7(38.9%)	
	3	3(15%)	1(5.3%)	0(0%)	0(0%)	
	4	0(0%)	0(0%)	0(0%)	0(0%)	
Group B n = 18	0	1(5%)	2(11.1%)	2(11.1%)	2(11.1%)	$\chi^2=20.143$ p =.000
	1	7(35%)	6(33.3%)	12(66.7%)	13(72.2%)	
	2	12(60%)	10(55.6%)	4(22.2%)	3(16.7%)	
	3	0(0%)	0(0%)	0(0%)	0(0%)	
	4	0(0%)	0(0%)	0(0%)	0(0%)	
Group C n = 18	0	0(0%)	1(5.6%)	3(16.7%)	2(11.1%)	$\chi^2=29.817$ p =.000
	1	3(15%)	12(66.7%)	8(44.4%)	12(66.7%)	
	2	12(60%)	4(22.2%)	6(33.3%)	3(16.7%)	
	3	3(15%)	0(0%)	1(5.6%)	1(5.6%)	
	4	2(10%)	1(5.6%)	0(0%)	0(0%)	
Between the group comparison Kruskal-Wallis test		$\chi^2=6.672$ p =.036	$\chi^2=1.299$ p =.522	$\chi^2=.755$ p =.686	$\chi^2=3.405$ p =.182	

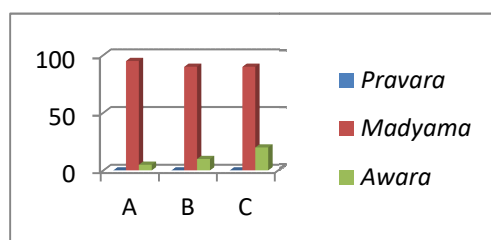


Fig. 1: Showing incidence of *Abhyaharanshakti*

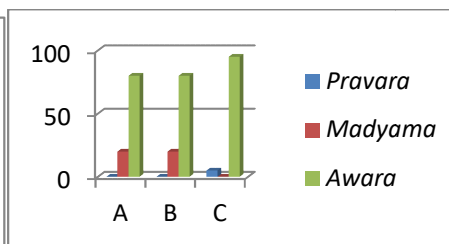


Fig. 2: Showing incidence of *Jaranashakti*

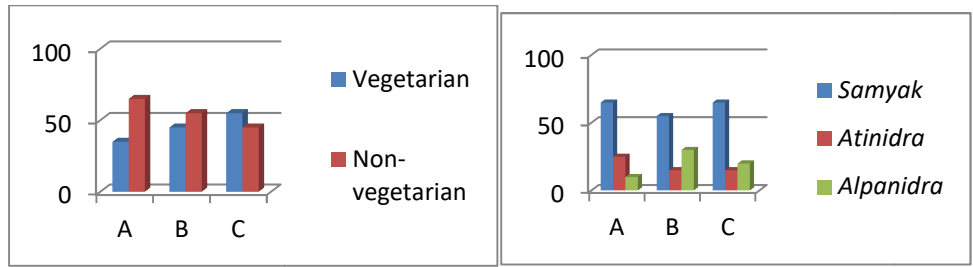


Fig. 3: Showing incidence of Dietary habits **Fig. 4:** Showing incidence of *Nidra*

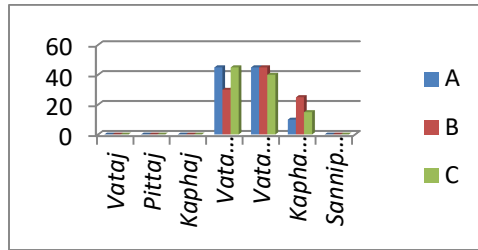


Fig. 5: Showing incidence of *Deha Prakriti*

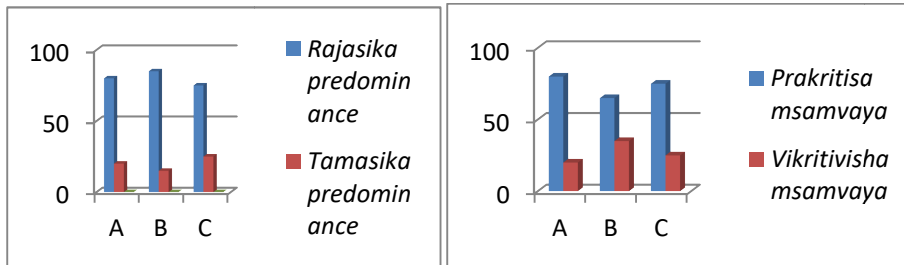


Fig. 6: Showing incidence of *Manas prakriti* **Fig. 7:** Showing incidence of *Vikriti*

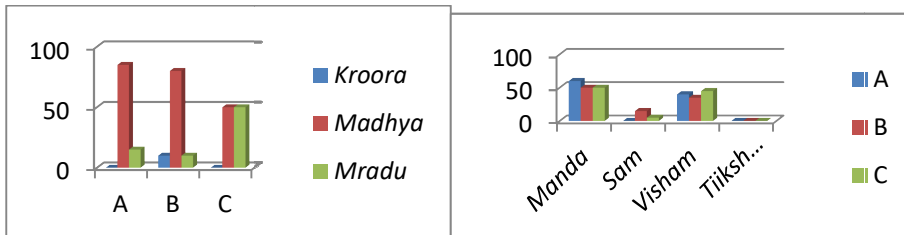


Fig. 8: Showing incidence of *Koshta* **Fig. 9:** Showing incidence of *Agni* status

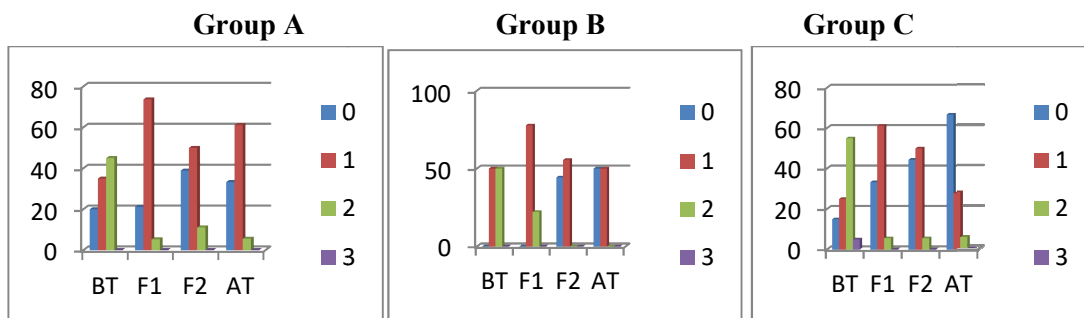


Fig. 10: Showing incidence of Abdominal Pain/Tenasmus

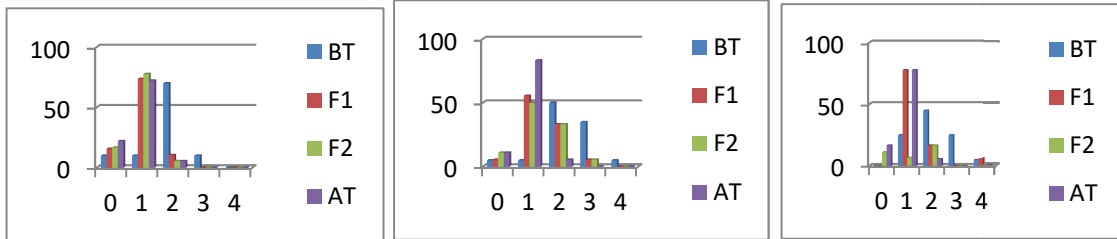


Fig. 11: Showing incidence of Frequency of Stool

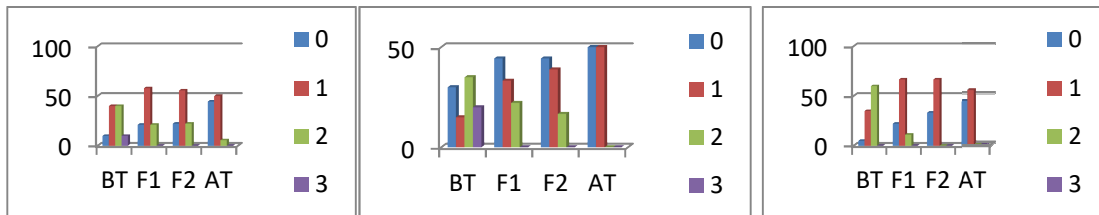


Fig. 12: Showing incidence of Mucous in Stool

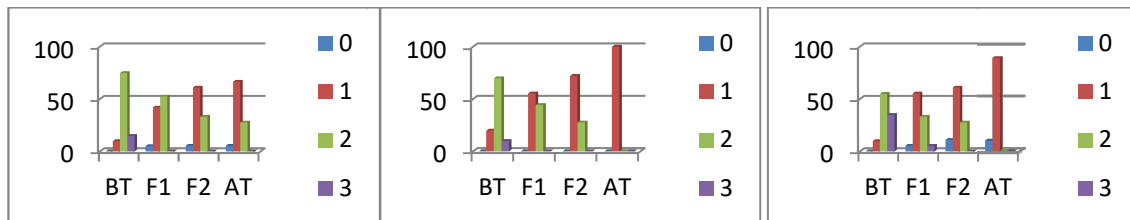


Fig. 13: showing incidence of Gas or Flatulence

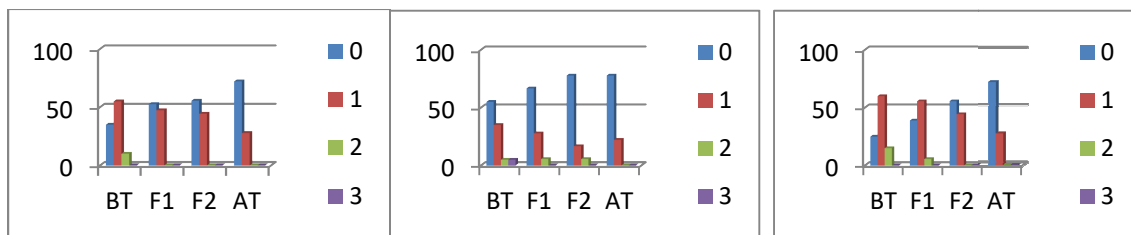


Fig. 14 showing incidence of Vomiting and Nausea

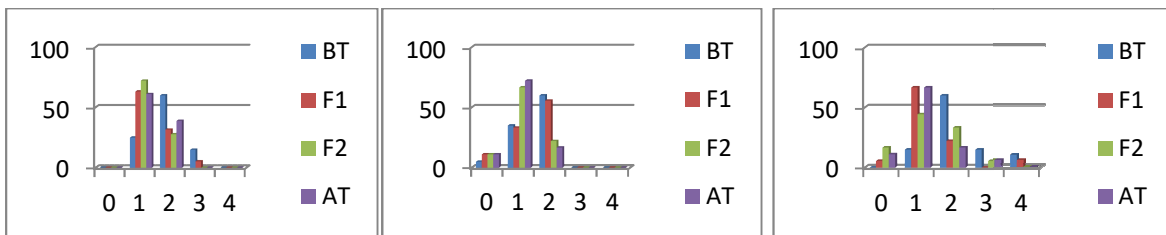


Fig. 15: showing incidence of Perception & Mental well-being

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Shani Singh & Rajendra Prasad: Comparative Clinical Evaluation Of Certain Herbo-Mineral Preparations & Shirodhara In The Management Of Vatika Grahani Vis-A-Vis Irritable Bowel Syndrome. *International Ayurvedic Medical Journal* {online} 2019 {cited November, 2019} Available from: http://www.iamj.in/posts/images/upload/2021_2032.pdf