

“COMPARATIVE STUDY OF ‘NAVAK GUGGULA AND BHADRANIMBAKULATHYADI NIRUHA BASTI’ IN MANAGEMENT OF STHAULYA (OBESITY)”

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ABSTRACT

The aim of present study was to evaluate & compare the efficacy of *Navak Guggul* and *Bhadranimbakulathyadi Niruh Basti* in the management of *Sthaulya* (Obesity). As *Staulaya* (Obesity) is the disease of modern era, it has become a epidemic now. The present studies of 30 patients were selected for each group according to inclusion criteria. Group A was given *Navak Guggul* for 6 weeks. And Group B was *Bhadranimbakulathyadi Niruh Basti* was given after *abhyanga* and *swedan* of *Adho udar* region, *kati* and both legs for 16 days. Follow up was taken after 4th, 6th, 7th and 8th weeks. Statistical analysis was done which lead to conclusion that efficacy of group B [*Bhadranimbakulathyai Niruha Basti*] were remarkably better than that of group A [*Navak Guggula*].

Keywords: Sthaulaya, Obesity, *Navak Guggul*, *Bhadranimbakulathyadi Niruh Basti*.

INTRODUCTION

Sthaulya (Obesity) is one among the major diseases of Modern era. In Modern era with continuous changing life styles and environment, changed diet habits, man has become the victim of many disease caused by unwholesome dietary habits and Obesity is one of them. Obesity is a global problem increasing progressively. Excessive truncal adiposity is very well correlated with the risk for diabetes, hypertension and cardiovascular disease. The changing lifestyle, lack of physical activity and increasing stress are some of the important contributory factors. To sum up, the marked increase in the intake of energy dense food with very little or no physical activity and high level of stress contributes significantly to the pro-

gression of the epidemic¹ Obesity is a predisposing factor for various complications like atherosclerosis, diabetes mellitus, arthritis and high blood pressure. A diet low in calories and fat, and high in fibre is recommended. It is designed to provide less than the required energy by the body and use up the fat stores of the body especially with a structured exercise programmed, which is a balance of energy intake versus energy expenditure². A definition of *Swastha purusha* as given by *Charaka*³ and *Sushruta*⁴. A healthy body is the only one media to achieve the ultimate goal among the *chaturvidha purushartha*. *Acharya Sushruta* also said that *Madhyama Sharira* is the best but *Ati Sthaula* and *Ati Krishna* are always af-

ected with some complaints⁵. Acharya Charak has thrown light on the eight varieties of impediments which are designated as *Nindita Purusha*, *Ati Sthaulya* comprises one of them⁶. Hence, for the present study it was decided to select the *Navak Guggula* and *Bhadrnimbakulathyadi Niruha Basti* for comparative study.

AIMS

1. To evaluate the efficacy of *Navak Guggul* in the management of *Sthaulya*(Obesity)
2. To evaluate the efficacy of *Bhadrnimbakulathyadi Niruh Basti* in the management of *Sthaulya*(Obesity).
3. To compare the efficacy of *Navak Guggul* and *Bhadrnimbakulathyadi Niruh Basti* in the management of *Sthaulya*(Obesity).

MATERIALS AND METHOD

1. **Clinical study:** The study was Open Comparative Study exclusively based on clinical trials. A well detailed case record form was prepared to study the patient as well as the disease.
2. **Selection of patient :** The patients attending the O.P.D and I.P.D of the Smt.K.G Mittal Ayurved Hospital were selected randomly with irrespective of their age, sex, caste etc. There was open comparative selection of patients from the O.P.D and I.P.D of Department of *Kayachikitsa* and *Panchakarma* of this research institute. The selected patients of *Sthaulya*(obesity) was subjected to clinical examination. Thus the assessment of *Sthaulya*(obesity) was done by my respected guide and similarly the follow up assessment was done as advised by my guide. Case record forms of every patient was mentioned as regard to each

separate test with detailed information of name, age, sex, religion, occupation, address, registration number of the hospital, past history of any disorder with history of *Matrukula- pitrukula- swakula* for ruling out any related or non-related disorders with personal history of sexual, marital status etc.

3. Inclusive Criteria :

1. Age : >18 to <70 years
2. Sex : No barrier
3. Race & Religion : No barrier
4. Economic status :
5. Patients presenting classical features of *Sthaulya*(obesity)/*Medoroga* described in *shastra*.
6. BMI- Between 25.0 to 40.0.
7. WHR (waist & hip ratio) - WHR >0.95 in males & WHR >0.8 in female.
8. No k/c/o Hypothyroidism
9. Patients willing to give informed written consent.

4. Exclusive Criteria:

1. Age below 18 and above 70 years.
2. Patient having major cardiac disorder, diabetes mellitus.
3. Patients suffering from infectious diseases, pregnant women or taking steroids.
4. Patients contraindicated for Basti treatment as per classical texts of *Ayurveda*.

5. Informed Consent: Patient fulfilling criteria for selection was included under the study after receiving their written consent.

6. Withdrawal from Study: withdrawal of patient was done on ethical ground after discussion with respected guide.

7. Investigation: Sr. Lipid profile, T3, T4, and TSH., CBC, Urine Routine, ECG, BSL-Fasting & PP.

8. Choice of Drug Navaka Guggula: All drugs were identified and authenticated by respected guide. *Guggul shodhan* was done in *Trifala kwath*. *Guggul paaka* was done in *Trifala kwath* and the *churna dravyas* were added as per *Bhavprakash's* reference⁷. 250 mg *vatis* were made and were stored in bottles after drying them in shade.

Bhadranimbakulathyadi Niruha Basti : All drugs were identified and authenticated by respected guide. *Bhadrnimbkulathyadi kwath* was prepared as per *Sushrut* reference⁸. All the *kalka dravyas*, *gomutra*, *madhu*, *til tail* was added as per the *karma* mentioned in it and *nirooh basti* made accordingly.

9. Grouping: Patients were treated under two groups:

Group A

Number of Patients : 30 well diagnosed patients of *Sthaulya*(obesity) presenting with classical symptoms of *Sthaulya*(obesity) .

Treatment : *Navak Guggula* for 6 weeks (2 tabs twice before meals)
Follow up was taken at 4th, 6th, 7th

and 8th week (For evidence of relapse of signs and symptoms if any)

Group B

Number of Patients : 30 well diagnosed patients of *Sthaulya*(obesity) presenting with classical symptoms of *Sthaulya*(obesity) .

Treatment : *Bhadranimbakulathyadi Niruha Basti* for 16 days. Follow up was taken at 4th, 6th, 7th and 8th week(For evidence of relapse of signs and symptoms if any).

10. Order of Administration: In this study *Bhadranimbakulathyadi Niruha Basti* will be given in 16 continues day. If any *vatprakopjanya* symptoms are found then *anuvasan basti* will be given as per required.

Basti Vidhi:

- a) *Purva karma* - *Abhyanga* and *swedan* of *Adho udar* region, *kati* and both legs.
- b) *Pradhana karma* – *Niruh basti* – Before lunch
- c) *Paschat karma* – On feeling the urge, patient should sit in the *Utkatasan* position and defecate. After *Basti* comes out of the body, patient should be made to take rest, have bath with lukewarm water and eat *laghu anna* (eg *yusha*, *krushara* etc).

GRADATION AND CRITERIA FOR CLINICAL ASSESMENT

SR.NO	SYMPTOM	0	1	2	3
1	<i>Javoparodha</i>	Normal enthusiasm in starting work	Less enthusiasm in starting work at specific time of day	Less enthusiasm in every work at all time of day	No enthusiasm towards any work
2	<i>Daurbalya</i>	Can do routine work	Can do moderate exercise	Can do exercise with very diffi-	Cannot do even mild exercise

			without difficulties	culties	
3	<i>Daurgandhya</i>	Absence of bad smell	Occasional bad smell in body	Persistent bad smell felt from long distance is not suppressed with deodorant	Persistent bad smell felt from long distance even intolerance to patient himself.
4	<i>Angagaurav</i>	No fatigue	Little fatigue in doing routine work	Excessive fatigue in doing routine work	Excessive fatigue in doing little work
5	<i>Swedadhikya</i> (At normal temp. and normal condition)	Sweating after heavy work and fast movement or in hot season	Sweating after moderate work and movement	Sweating after little work and movement	Sweating even at rest and in cold season
6	<i>Kshudhadhikya</i>	Patient can fast	Diet with Lunch and Dinner	Diet with Breakfast, lunch and Dinner	Supplementary food required even with Breakfast, Lunch and Dinner
7	<i>Nidradhikya</i>	6 – 7 hours per day	8 hours per day with <i>Jrimbha</i>	10 hours per day with <i>Tandra</i>	More than 10 hours with <i>tandra</i> and <i>klam</i>
8	<i>Trishnadhikya</i>	1 – 2 Liters per day	2 – 3 Liters per day	3 – 4 Liters per day	More than 4 Liters per day
9	<i>Krathan</i>	No snoring	Snoring intermittent	Disturbing sleep of person next to him	Disturbing sleep of all person in room
10	<i>Gadgadtawam</i>	No heavy words	Heaviness in specific kanthya words	Heaviness in words but other person can understand what he is talking	Heaviness in words but other person can't understand what he is talking
11	<i>Kshudrashwas</i>	No dyspnoea even after heavy work	Dyspnoea after little work but upto toler-	Dyspnoea after little work but beyond tol-	Dyspnoea in resting also

			ance	erance	
12	BMI (Body mass index) BMI = weights (Kg) / (Height in meter) ²	< 18.5 Underweight	18.5 – 24.9 Normal weight	30 – 39.9 Overweight	> 40 Severe obese
13	WHR (Waist and Hip ratio in cm)	In Male- Less than 0.95		In Female - Less than 0.8	

RESULTS

Application of WILCOXON MATCHED PAIRS SIGN RANK TEST For Each Symptom Of Group-A :

Symptoms	MEAN		S.D.		S.E.		ME-DIAN		'p' VALUE	'r' VAL-UE	RE-SULT
	B T	AT	BT	AT	BT	AT	B T	AT			
<i>Javo-parodh</i>	1.83	1.233	0.912	0.727	0.1667	0.132	2	1	0.0053	0.1717	V.S.
<i>Daur-balya</i>	1.46	0.833	0.937	0.746	0.1711	0.136	1	1	0.0016	0.4742	V.S.
<i>Daur-gondhya</i>	1.63	1.033	0.999	0.999	0.1825	0.182	2	1	0.0033	0.5399	V.S.
<i>Angagau-rav</i>	1.70	1.167	0.915	0.949	0.1671	0.173	2	1	0.0090	0.4168	V.S.
<i>Swedad-hikya</i>	1.50	0.966	0.937	0.764	0.1712	0.139	2	1	0.0115	0.3306	S.
<i>Kshudhad hikya</i>	2.03	1.200	0.850	0.714	0.1552	0.130	2	1	0.0001	0.3003	E.S.
<i>Nidradhikya</i>	1.83	0.966	0.746	0.808	0.1363	0.147	2	1	< 0.0001	0.4469	E.S.
<i>Trishnad-hikya</i>	1.86	1.867	1.867	0.718	0.1571	0.131	2	1	< 0.0001	0.4181	E.S.
<i>Krathan</i>	1.90	1.033	0.922	0.718	0.1685	0.131	2	1	0.0003	0.3424	E.S.
<i>Gadgad-tvam</i>	1.93	1.167	0.784	0.791	0.1433	0.144	2	1	0.0006	0.2037	E.S.
<i>Kshu-drashwas</i>	2.00	1.233	0.743	0.898	0.1356	0.164	2	1	0.0006	0.3165	E.S.

Application of WILCOXON MATCHED PAIRS SIGN RANK TEST For Each Symptom Of Group-B :

Symptoms	MEAN		S.D.		S.E.		MEDIAN		'p' VALUE	'r' VALUE	RE-SULT
	BT	AT	BT	AT	BT	AT	BT	AT			
<i>Javopa-rodh</i>	2.100	0.533	0.884	0.628	0.161	0.1148	2	0	< 0.0001	0.5322	E.S.

Daurbalya	2.3 67	0.9 66	0.7 18	0.8 08	0.131	0.147 7	2.5	1	< 0.0001	0.4637	E.S.
Daurgondhya	2.1 33	0.9 33	0.8 99	0.6 39	0.164	0.116 8	2	1	< 0.0001	0.6832	E.S.
Angagaurav	2.3 00	0.5 66	0.6 51	0.7 27	0.118	0.132 9	2	0	< 0.0001	0.4880	E.S.
Swedadhikya	2.2 00	0.8 66	0.7 61	0.7 76	0.139	0.141 7	2	1	< 0.0001	0.8178	E.S.
Kshudhadhiky	2.6 00	0.7 33	0.6 74	0.7 39	0.123	0.135 0	3	1	< 0.0001	0.4851	E.S.
Nidradhikya	2.2 33	0.7 66	0.6 78	0.7 27	0.124	0.132 9	2	1	< 0.0001	0.3267	E.S.
Trishnadhikya	2.5 67	0.7 66	0.6 26	0.6 78	0.113	0.124 0	3	1	< 0.0001	0.3799	E.S.
Krathan	2.1 33	0.5 33	0.9 37	0.8 19	0.171	0.149 6	2	0	< 0.0001	0.2804	E.S.
Gadgadtvam	2.1 00	0.9 33	0.8 44	0.8 68	0.154	0.158 5	2	1	< 0.0001	0.7394	E.S.
Kshudrashwas	1.9 33	0.7 00	0.9 44	0.7 02	0.172	0.128 2	2	1	< 0.0001	0.7924	E.S.

PATIENT WISE DIFFERENCE BETWEEN BT AND AT OF SUBJECTIVE PARAMETERS OF BOTH THE GROUPS (N=30 each group)

N=30	Mean	S.D	S.E	Passed Normality	P value
Group A	7.833	3.384	0.6179	No	<0.0001
Group B	16.367	2.748	0.5017	No	

Mann-Whitney U statistics = 27.500

P(One tailed)= < 0.0001, considered extremely significant

Result- As $P < 0.05$ we are able to reject null hypothesis and accept alternative hypothesis. i.e. result of group B is better than group A in subjective parameters.

DISCUSSION

Open randomized comparative study was done. Patient was enrolled randomly in two groups. Patient of group A were given shaman *chikitsa* by *Navak Guggula* whereas patient of group B were treated with *shodhan chikitsa* by *Bhadranimbakulathyadi Niruh Basti*. Sample size for both the groups was fixed to be of 30 patients [considering academic duration & minimum requirement of sample size to make data valid for statis-

tical analysis]. During statistical analysis of data available, it was observed that average percent relief obtained in group A=39.64% whereas that in group B is =66.17%. Difference between both (26.53%) makes it clear that efficacy of group B [*Bhadranimbakulathyai Niruh Basti*] were remarkably better than that of group A [*Navak Guggula*]. In group B excellent[75-100%] result were found in symptoms like *Angagaurav, Kranthan*; Good[50-75%] result were found in symptoms like *Javoparodh, Daurbalya, Daurgondhya, Swedadhikya, Kshudhadhikya, Kshudrashwas, Nidradhikya, Trishnadhikya, Gadgadtvam*.

Whereas group A Average[25-50%] result were found in all symptoms of sthau-ya(obesity). However in objective parameters group B shows better result than group A in Weight, BMI, Abdominal circumference, Sr. Cholesterol, Sr. Triglyceride, HDL, VLDL level, whereas group A shows better result than that of group B in WHR, Waist, Chest, LDL level. Wilcoxon Matched pair sign rank test showed that, both group A [treated with *Navak Guggula*] & group B [treated with *Bhadranimbakulathyadi Niruh Basti*] are showing significant results in treatment of *Staulya*. Thus it was necessity to find out which modality is showing better result. For this purpose, only summation of after treatment result of each symptom of each patient was calculated for both groups. Hereafter these values were treated in statistical software. Here also data was not following normal distribution, thus MANN-WHITNEY TEST instead of unpaired t test was used for calculation [after discussion with statistical expert]. There seemed to be significant difference between results of two groups after application of Mann-Whitney Test. From that statistical analysis data it can be said that result of Group B is better than that of Group B.

CONCLUSION

During study, no patient showed deterioration in symptoms after commencement of treatment. During statistical analysis of data available, it was observed that average percent relief obtained in group A=39.64% whereas that in group B is =66.17 % .Difference between both (26.53%) makes it clear that efficacy of group B [*Bhadranimbakulathyai Niruha Basti*] were remarkably better than that of group A [*Navak Guggula*].

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