Study the Efficacy of Rodhradigana Vasti in the Management of Sthaulya (Overweight)

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Authors’ contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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ABSTRACT

Background: Obesity (Sthaulya) has been one of the primary diseases of the modern period, with its changing lifestyles, climate, and eating habits. Everyone has become a victim of many diseases caused by poor eating habits, and obesity is just one of them. Obesity is the privilege of the new era of robots and materialistic devices. In 2008, the WHO assessed that 1.5 billion individuals, were overweight and more than 200 million men and almost 300 million women were fat.

Objectives: To evaluate the effect of Rodhradigana Vasti in Sthaulya.

Study Design: This was an open-labelled single-arm interventional clinical study.

Methods: 15 patients of Sthaulya were registered from Panchakarma, and Rodhradigana Vasti was administered for 15 days.

Statistical Analysis: The data were statistically analyzed using the Wilcoxon Signed Ranks Test for Subjective Parameter and paired t-test for Objective Parameter.

Results: In this study, decreased weight, lipid profile and subjective parameters show positive finding after the intervention of Vasti.

Conclusion: Rodhradigana Vasti is one of the best remedies for relieving Sthaulya.

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1. INTRODUCTION

Sthaulya (Obesity) has become a burning problem of the day caused by untraditional dietary habits. Obesity is considered a worldwide plague, expanding because of stationary ways of life and improved financial conditions [1]. World Health Organization (2016) stated that there are around 2 billion adults overweight; of those, 650 million are seen as impacted by robustness (BMI>30 kg/m²). That compares to (39% of men and 40% of women) of adults developed 18 or over who were overweight, with 13% fat. The general inescapability of strength fundamentally expanded some place in the scope of 1975 and 2016. It is evaluated since, by far, most of the all-out populace lives in countries where overweight and stoutness butchers a greater number of people than underweight [2].

Obesity is the closest therapeutic subject to Sthaulya in Ayurveda. Ayurveda defined eight varieties of 'Nindita Purusha,' out of which one is Atishthula. Atishthula is morbid obesity which is considered 40-50 BMI, and Super Obesity i.e. more significant than 50 BMI. Adipose tissue/fat deposition in the body sections, such as the heart, abdomen, gluteal or thigh area, is caused by excessive high-calorie intake.

The periodical Shodhana has also proved its effectiveness, and Niruha Vasti is among the most effective and widely used therapies with a wide variety of therapeutic acts. Niruha Vasti eliminates Dosha (Humors) from the body and enhances the power of the body. And has Achintya Shakti (unpredictable effects). In this disorder, the excessive development of abnormal Meda Dhatu is clearly visualized. It has been shown that Kapha and Meda are the critical cause of the pathogenesis of Medoroga [3]. However, the first line of treatment is considered to limit the excess development of Kapha and Meda. There is a lot of research and treatment for controlling this condition, but no ideal cure for this issue has been identified. Even using conventional medicine, adverse results and long-term complications are usually seen, but in Ayurveda, obese people minimize their weight without any side effects. Lekhana Vasti is among the most crucial Karma listed by all the Acharyas for managing the Sthaulya Roga [4,5]. In the use of Sthaulya, Acharya Sushruta in Sutrasthana has been suggested Rodhradi Gana Vasti (Rodhra, Palash, Kutannak, Ashoka, Phanji, Alwaluka, Jingani, Shallaki, Kadamb, Sala, Kadali) these Dravyashave a negative effect on Kaphavridhi and Medovridhi.

Numerous treatment modalities are available in Ayurveda for obesity, such as Lekhana Basti. A lot of theoretical work has been done with lekhana Basti by a research scholar. But no study has been carried out to study the effectiveness of Rodhradigana Vasti. Hence, present study it was decided to select the Rodhradigana Vasti [6].

To document and analyze this procedure for statistical interpretation, a present study entitled Effect of Rodhradi Gana Vastion Sthaulya was undertaken.

1.1 Aim and Objectives

Aim- Study the effect of Rodhradigana Vasti in Sthaulya (Overweight).

Objectives-

1. To study the effect of Rodhradigana Vasti on Lipid profile.
2. To study the effect of Rodhradigana Vasti on Weight
3. To study the effect of Rodhradigana Vasti on BMI
4. To study the effect of Rodhradigana Vasti on Waist to Hip ratio.
5. To study the effect of Rodhradigana Vasti on subjective parameters.

2. MATERIALS AND METHODS

2.1 Selection of Patient

All the patient came from outdoor and indoor, which was recruited in the Panchakarma department. A total of 15 patients were registered in this study which is diagnosed with Sthaulya. According to their sign and symptoms.

2.2 Diagnostic Criteria

Pratyatma Lakshana of Sthaulyapresenting with symptoms like Chalā Sphik Udara Stana, Kshudrashwasa, Dourbalya, Nidradikyata, Swedadiyata, Daurgandhyata, Atipipasa, Atikshudhaand Alasya, Value of BMI.
i) Inclusion criteria

1. Primary obesity (E66.0 of ICD-10 criteria)
2. Patients with overweight where BMI > 25-30 kg/m²
3. Patients aged between 20 to 50 years.

ii) Exclusion criteria

1. Drug-induced obesity (E66.1 of ICD-10 criteria)
2. Extreme obesity with alveolar hypoventilation (E66.2 of ICD-10 criteria)
3. Obesity due to any secondary causes.
4. Adipose genital dystrophy lipomatosis (E23.6 of ICD-10 criteria)
5. Dolorosa (E88.2 of ICD-10 criteria)
6. Prader-Will syndrome (E87.1 of ICD-10 criteria)
7. Other systemic diseases which intervene with the course of treatment.
8. Patients aged fewer than 20 and above 50 years.

2.3 Data Collection

Patients designated were completely analyzed by each subjective and objective parameter. A complete history was taken, as well as a physical examination. Laboratory investigations was performed after following the inclusion and exclusion criteria.

Treatment: Rodhradigana Churnavasti was done along with Pathya for 15 days.

Study Duration: Initially, treatment lasted for 15 days and follow up period after one month. The total study duration was 45 days.

2.4 Method of Administration

Poorvakarma:

All the patients were asked to be in the hospital at or after 9 o'clock. Each patient advised mild Abhyanga andSwedanalocally just before the introduction of Vasti. The Abhyanga was done with simple Tila Taila, and Sweda was done only to the area below the ribs to the foot.

Preparation of Kwath:

Ingredients:

Rodhradigana Choorna- 100 gms, Water -1600 ml

Equipment: Khalwa Yantra, vessels, measuring glass, stirrer, stove, matchbox, sieve etc.

2.5 Materials for Therapeutic Intervention

For Niruha Vasti administration – Enema pot with soft rubber tubes at the end of the terminal.

For Anuvasa Vasti– Rubber Catheter and syringe was used.

Procedure: 100 grams of Rodhradigana Choorna added 1600 ml of water in a vessel kept on the gas and reduced to 1/2, i.e. 800 ml, and used for the Vasti.

| Day | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 |
|-----|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|
| Vasti Schedule | A | N | N | N | A | N | N | N | A | N | N | N | A | A | A |

A= Anuvasan, N= Niruhavasti

Table 2. Vasti composition

| Sr. No. | Rodhradi Gana Niruhavasti | Quantity |
|---------|---------------------------|----------|
| 1.      | Rodhira, Palash, Kutannak, Ashoka, Phanji, Alwaluka, Jingani, Shallaki, Kadamb, Sala, Kadali | 800 ml qwath |
| 2.      | Madhu                     | 15 ml    |
| 3.      | Saidhava                  | 10 gm    |
| 4.      | Til tail                  | 30 ml    |
| 5.      | TriphalaChurna            | 30 gm    |

For Anuvasan Vasti We used tita tail 60 ml after food anuvasan was given
2.6 Preparation of Rodhradigana Niruha Vasti

The different components of Rodhradigana Vasti are combined as follows.

Firstly, Madhu and Saindhava Lavana were taken and mixed thoroughly with the aid of a wooden churner, and then Tila Taila was gradually added and well mixed. No crystals of Lavana were to be identified until Tailas was introduced. The Rodhradigana Kwath that is prepared both classically and freshly was added.

All ingredients are thoroughly combined, and special preparation is achieved without sediment deposition. It is performed by Sukhosha, holding it over Ushnajala before the administration. (Vasti preparation was done as per Niruhavasti).

Pradhanakarma

The patient was advised to lie on the Panchakarmadroni in Vamaparshwa (left lateral position) pot be fitted with a soft rubber tube (Niruha Vasti instrument) or a glycerin syringe with a rubber tube (Anuvasa Vasti instrument).

Extreme care has been taken to avoid all the Vastivrapada. The patients were told to move from the right to the left side and vice versa repeatedly for five minutes; in Anuvasa, Mrudhutadan was performed over Kati, Prushtha Urupradesh. The time of administration of vasti, the time of retention of vasti and any complications present were identified and recorded.

Paschat Karma: Vasti Pratyagamana Kala was registered, and then a detailed review of the patient was performed, re-recording all vital data. Patients were recommended to stay in vasti Parisharaka [7] with all Pathyapathy.

2.7 Method of Assessment of Treatment

Both subjective and objective tests were conducted out before and after diagnosis in all cases. A separate rating has been provided for the subjective criteria of the evaluation, which include the following.

| Sr. No | Subjective Criteria | Grade-0 | Grade-1 | Grade-2 | Grade-3 | Grade-4 |
|--------|---------------------|---------|---------|---------|---------|---------|
| 1.     | Chalasphik Udara Stana | Absence of Chalatva | Little visible movement (in the areas) after fast movement | Little visible movement (in the areas) after moderated movement | Movement (in the area) after mild movement | Movement (in the area) after changing posture |
| 2.     | Alasya               | No alasy (doing work satisfactorily with proper vigour in time) | Doing work satisfactorily with late initiation | Doing work unsatisfactorily under mental pressure and takes time. | Not starting any work on his responsibilities and doing Little work very slowly | Does not take any initiation and not want to work even after pressure |
| 3.     | Dourbalya            | Routine exercise can be performed | Moderate activity without difficulty | only mild exercise | gentle exercise with very difficult | Can't do even gentle exercise |
| 4.     | Swedadikyata         | Sweating after heavy work and fast movement or in the hot season | Profuse sweating after moderate work and movement | Sweating after little work and movement | Profuse sweating after little work and movement | Nil |
| 5.     | Daugandhyta          | Bad smell | Persistent | Constant bad | Persistent | |
| Sr. No | Subjective Criteria | Grade-0 | Grade-1 | Grade-2 | Grade-3 | Grade-4 |
|--------|---------------------|---------|---------|---------|---------|---------|
|        | bad smell absent    | Occasionally present; after bathing, it can remove. | bad smell limited to close areas difficulty to suppress with deodorants | smell felt from long distance and is not suppressed by deodorant | bad smell felt from long distance even intolerable |
| 6.    | Kshudraswasa        | Dyspnoea after heavy work but relived soon and up to tolerance | Dyspnoea after moderate work but reduce later and up to tolerance | Dyspnoea after little work but reduced later and up to tolerance | Dyspnoea after minor works but decrease after that and beyond tolerance |
| 7.    | Atinidra            | No day sleep can get up early, night sleep < 6 hrs. | Can avoid day sleep easily bit drowsy, night sleep <7-8 hrs | Can't prevent day sleep tired, day sleep 1-2 hrs and night sleep 8-9 hrs. | Constantly tired, sleepy day sleep 3-4 hrs and night sleep 9-10 hrs | Sleep while sitting itself, day sleep 5-6 hrs and night sleep > 10 hrs |
| 8.    | Atipipasa           | Normal thirst Up to 1-litre excess intake of water | 1 to 2 litres excess intake of water | 2 to 3 litres excess intake of water | More than 3 litres excess intake of water |

Table 4. Gradation for subjective parameters

| Grade | 0 | 1 | 2 | 3 | 4 | 5 |
|-------|---|---|---|---|---|---|
| **Ruchi** | **Unwilling for food** | **Unwilling for food, but could take the meal** | **Willing towards only most liking food, and not to other** | **Willing towards only one Katu, Amla, Madhura foodstuffs** | **Inclined towards some Specific Aahara or rasaVishesha** | **Equal willingness towards all the Bhojyapadartha** |
| **Abhyavaharana Shakti** | **The person not taking food at all.** | **The person taking food in less quantity once a day** | **The person taking food in less quantity** | **The person taking food in moderate quantity** | **The person taking food in regular quantity** | **Taking food in excessive quantity twice or thrice** |

According to the presence of Jirnaaaharalakshana Utshaaha, Laghuta, Udagarashuddhi, Kshudha, Trishna Pravrutti, Jathochitamalotsarga

| Jarana Shakti | Presence of one symptom after 6 hours | Presence of two symptoms after 6 hours | Presence of three symptoms after 5 hours | Presence of four symptoms after 5 hours | Presence of all symptoms after 4 hours | Presence of all symptoms within 4 hours |
Table 5. Gradation for objective parameters

| Grade | 0. | 1.       | 2.       | 3.       |
|-------|----|----------|----------|----------|
| A. Weight | 5kg and above | 3-4kg. | 1-2kg. | no change (Basic) |
| B. BMI | 2.01- and above | 1.01-2 kg/m2 | 0.01-1 kg/m2 | no change (Basic) |
| C. In general body circumference chest, abdomen, waist, hip, waist and hip ratio | 4 and above | 2-3.99 cm | 0.01-1.99 cms | no change (Basic) |

Table 6. Observation of subjective criteria

| GROUP B (Ranks) Wilcoxon Signed Ranks Test | N | Mean Rank | Sum of Ranks | Z     | p-value |
|-------------------------------------------|---|-----------|--------------|-------|---------|
| **Stana Udara Sphik Chalatva Before – After** | 15<sup>a</sup> | 8.00 | 120.00 | -3.472 | 0.001* |
| Negative Ranks | 0<sup>b</sup> | .00 | .00 |
| Positive Ranks | 14<sup>d</sup> | 3.50 | 3.50 |
| Ties | 0<sup>c</sup> |
| **Kshudrashwasa Before – After** | 14<sup>d</sup> | 8.32 | 116.50 | -3.252 | 0.001* |
| Negative Ranks | 1<sup>e</sup> | 3.50 | 3.50 |
| Positive Ranks | 0<sup>i</sup> |
| Ties | 0<sup>j</sup> |
| **Dourbalya Before – After** | 14<sup>m</sup> | 7.75 | 108.50 | -2.783 | 0.005* |
| Negative Ranks | 1<sup>n</sup> | 11.50 | 11.50 |
| Positive Ranks | 0<sup>q</sup> |
| Ties | 0<sup>p</sup> |
| **Nidradikyata Before – After** | 14<sup>j</sup> | 7.93 | 111.00 | -2.976 | 0.003* |
| Negative Ranks | 1<sup>j</sup> | 9.00 | 9.00 |
| Positive Ranks | 0<sup>q</sup> |
| Ties | 0<sup>p</sup> |
| **Swedadikyata Before – After** | 14<sup>m</sup> | 8.50 | 119.00 | -3.442 | 0.001* |
| Negative Ranks | 1<sup>n</sup> | 1.00 | 1.00 |
| Positive Ranks | 0<sup>r</sup> |
| Ties | 0<sup>s</sup> |
| **Dourgandyata Before – After** | 11<sup>p</sup> | 6.73 | 74.00 | -2.812 | 0.005* |
| Negative Ranks | 1<sup>r</sup> | 4.00 | 4.00 |
| Positive Ranks | 3<sup>f</sup> |
| Ties | 0<sup>n</sup> |
| **Atipipasa Before – After** | 14<sup>s</sup> | 8.36 | 117.00 | -3.277 | 0.001* |
| Negative Ranks | 1<sup>r</sup> | 3.00 | 3.00 |
| Positive Ranks | 0<sup>j</sup> |
| Ties | 0<sup>t</sup> |
| **Atikshuda Before – After** | 12<sup>r</sup> | 7.46 | 89.50 | -3.306 | 0.001* |
| Negative Ranks | 1<sup>u</sup> | 1.50 | 1.50 |
| Positive Ranks | 2<sup>u</sup> |
| Ties | 0<sup>u</sup> |
3. OBSERVATIONS AND RESULT

As per subjective parameters, patients had shown highly significant result in stana, udara, spik, chalatva, kshudrashwasa, dourbalya, swedadhikyata, atipipasa, atishuda and also a substantial reduction in remaining all symptoms of sthaulya with highly significant p-value (p<0.001).

As per Objective parameters like Weight, BMI, chest and abdomen circumference, total cholesterol, and Triglycerides had shown highly significant result. There also had considerable variation in HDL, LDL and VLDL.

4. DISCUSSION

To contribute at least "squirrel service" to the medical field and, in turn, to the service of society, rational observation and useful discussion should be made for each research work. An attempt has been made to discuss the theories of both literary and clinical work.

Obesity is known as 'MedoRoga' in Ayurveda [8] and is characterized as the condition one where excess fat is retained in the body. If the Agni (digestive fire) is vitiated, the Ama (toxic substances) is produced in the body, leading to obesity [9].

Obesity is a state of an overabundance of fat tissue mass. Overweight alludes to an abundance of body weight that incorporates muscle, bone, fat, and water [10]. Obesity is an extreme medical issue that can prompt an early passing. Different clinical problems, including hypertension, heart issues, diabetes, rest apnea, sadness, and joint inflammation, have been connected with overweight. A grown-up who is 30% heavier than their optimal weight (controlled by standard clinical and protection information) is thought to be stout [11].

Current treatment choices for obesity incorporate Fenfluramine, Dextenfluramine, and Sibutramine, which go about as craving inhibitors that have hurtful impacts and couldn't be utilized for over a quarter of a year. Diuretic and laxative medications are likewise used to treat stoutness; nonetheless, the activity is for a more limited period, and patients are again weighted after suspension of treatment. Numerous gadgets, like vibrators, are utilized for neighbourhood lipolytic activity. Dietary blends (engineered wholesome mixtures) are expensive and have antagonistic impacts. In the present sense, Ayurveda provides a glimmer of hope in treatments such as Vasti.
4.1 Probable Mode of Action of Vasti

Vasti has systemic action. The active principles of Vasti preparation (Virya) are absorbed by Pakwashaya (intestine) and distributed in different areas to channels of the body. It enters the lesion site and induces systemic effects, and reduces the pathogenesis of the disease, as has already been stated concerning Vasti Karmukata. Vasti’s action can be observed at different levels of the body, such as Dosha Dhatu and Malas, etc. Like Palash, the ingredients of this particular Vasti under its Tikta and Katu Rasarelieve Meda and Kapha, the major etiological factors involved in disease pathogenesis. Under Kashaya Rasa, it reduces Sharirgata Kleda [12], facilitating the absorption of liquefied detoxified Kapha and Meda. Ruksa Gunas was developed by Medo Shoshana (absorption of vitiated fat) [13]. Kadamba and is being Tridosha Shamaka by virtue of its Tikta, Kashaya Rasa, Katu Vipak and Sheet Virya [14]. Rodhra and Kadali due to its Kashaya RasaKaphaghmain nature [15], Shalais Kashaya, Katu Rasa, Sheeta and Ruksa Gunas, Kaphaghmain nature. Ruksa Gunas and Kashaya Rasa Meda are absorbed, and hence bark Powder is used in Medoroga [16]. Ashoka by virtue of its Tikta, Kashaya, Laghu, Ruksa, Gunakaphagha in nature [17]. Related studies on obesity and assessment were reviewed [18-20]. This Dravya displays Karma like Lekhana, Rookshana, and Karshana. It would aim to reduce Meda, which is Atiupchita Meda, accumulated in various sections of the body Vasti’s interference in the Shakthagata Doshas, perhaps the Margavarodha caused by the Ativriddha Meda is revied by the Srotomarga Vishodhana Karma of this Vasti. Vasti’s role is focused on Koshtagni. Koshtagata Varvruddhi triggered Koshtagni in the case of Sthaulya. Vasti is reviving the vilated Vata. The Srotodushi form of Sanga is changed, and the Samprapti of Sthauylais reversed since Vasti is the primary treatment for Vata [21,22].

5. CONCLUSION

The patients showed a marked difference in body circumferences, especially in abdominal girth and chest circumference. There was a relative improvement in subjective as well as objective criteria. It concluded that Rodhradi Gana Vasti has a highly significant effect on subjective and objective parameters of Sthauya. After completing the study, that environmental factors play an essential role in preventing the disease. A holistic approach required to tackle this multifactorial disease.

CONSENT

Informed consent was obtained from the patients before starting the intervention.

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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