Clinical Research

An observational pilot study on the effect of *Gomutra Haritaki*, diet control and exercise in the management of *Sthaulya* (obesity)

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Abstract

**Background:** India is currently witnessing rising numbers of people in the middle-class who are obese. A lot of the Indian population has started relying on processed foods that contain a huge percentage of trans-fat, sugars, and other unhealthy and artificial ingredients. Obesity is considered the core of many diseases. Increased weight carries significant health risks for some cancers, diabetes, heart diseases and strokes. Junk food, alcohol and sedentary lifestyle are leading us to silent self destruction, making one in every five Indian men and women either obese or overweight. **Aim:** To determine the effect of *Gomutra Haritaki* on *Sthaulya*.

**Materials and Methods:** An observational pilot study on the effect of *Gomutra Haritaki*, diet control and exercise in the management of *Sthaulya* (obesity) was conducted on 21 patients. Enrolled patients were screened on the basis of clinical findings and allocated into two groups. Trial group received *Gomutra Haritaki* (6 g/day in three divided doses) while control group received placebo capsules in the same dose for 8 weeks. **Result:** Statistically highly significant relief was found in weight reduction \( (P < 0.001) \), and body mass index (BMI) \( (P < 0.01) \) in both groups. Control group has shown better results against trial group. **Conclusion:** These results prove the impact of diet and exercise in the management of *Sthaulya*.

**Key words:** Cow’s urine, *Gomutra*, *Haritaki*, obesity, *Sthaulya*, *Terminalia chebula*

Introduction

*Sthaulya* (obesity) is a state of increased Medodhatu (fat).¹ It is one of the *Santarpanottha Vikaras*² (diseases of excess nourishment) where a physician needs to apply the principle of *Vishesha* (dissimilarity), which can restore the unhealthy increase of components to the healthy form. Prevalence of *Sthaulya* in society is increasing day by day due to decreased awareness regarding exercise and faulty dietary habits. It has reached up to epidemic level. *Sthaulya* is a disease in which there is abundant growth of *Medodhatu* in the body beyond normal limits. The present study is aimed to determine the effect of *Gomutra Haritaki*¹ on *Sthaulya*.

Materials and Methods

All the patients were selected for the present study by keeping in views, the symptomatology of *Sthaulya* as mentioned in Ayurvedic texts as well as criteria mentioned in modern texts for diagnosis of obesity, irrespective of age, sex, religion and economic status.

**Criteria for diagnosis**

1. Patients with signs and symptoms of *Sthaulya* in Ayurvedic classics supported by symptomatology of obesity, i.e. *Chala Sphik/Udara/Stana* (pendulous buttock/abdomen/breast), *Swedadhikya* (excessive sweating), *Angadaurgandhya* (bad body odor), *Angagauravata*, *Ati Kshudha* (excessive hunger), *Ati Pipasa* (excessive thirst), *Kshudra Shwasa* (dyspnoea on exertion), *Utsaha Hani* (lack of enthusiasm), *Ati Nidra* (excessive sleep)

2. Detailed examinations to exclude other pathologies were carried out. For the diagnosis of obesity, standard height weight chart, which was recommended by the courtesy of “Life Insurance Corporation of India”, was adopted.¹ On this basis, a person carrying about 10% more weight for the ideal weight for a particular age (11-60 years), sex and height was considered as *Sthula* (obese)

3. Moreover, the value of Body Mass Index (BMI) was also taken into consideration while making to the final diagnosis. The person whose value of BMI was more than 25 kg/m²¹ was considered as a case of *Sthaulya*.
4. In addition to this, abdomen, chest, buttocks, mid-arm and mid-thigh circumference was taken. To exclude any other pathology; routine investigations of blood, urine analysis, stool analysis and bio-chemical investigations such as blood sugar level, serum cholesterol and total lipid estimation were carried out.

**Grouping**
All the selected patients were randomly divided into two groups.

**Trial group (Gomutra Haritaki)**
Patients of this group were treated with 500 mg tablets of Gomutra Haritaki. The drug was administered in a dose of 6g per day (4 tablets thrice a day) with luke warm water during Abhakta (early morning) and Prakbhakta Kala (before lunch and dinner) for eight weeks.

**Control group (placebo group)**
Patients of this group were treated with placebo capsules, filled with fried Rawa (wheat flour). The dose, Anupana, Kala and duration were kept the same as that of the trial group.

**Diet and physical exercise**
Patients of both groups were given a chart comprising diet restrictions and exercises.

**Criteria of assessment**
For assessing the changes, patients were examined at weekly intervals. Suitable scoring method for the symptoms and signs was adopted. The efficacy of the therapy was assessed on the basis of subjective as well as objective criteria.

**Subjective criteria**
Most of the signs and symptoms of Sthaulya in Ayurveda are subjective in nature.

The details of the scores adopted for the main signs and symptoms in present study are as follows:

1. **Chala Sphik - Udara - Stana**
   - Absence of Chalatva : 0
   - Little visible movement (in the areas) after fast movement : 1
   - Little visible movement (in the areas) even after moderate movement : 2
   - Movement (in the areas) after mild movement : 3
   - Movement (in the areas) even after changing posture : 4

2. **Utsaha Hani**
   - No Alasya (doing work satisfactory with)
     - proper vigour in time: 0
     - Doing work with desire with initiation late in time: 1
     - Doing work without desire with lot of mental pressure and late in time: 2
     - Not starting any work with own responsibility, doing little work very Slowly: 3
     - Does not have any initiation and not wants to work even after pressure: 4

3. **Kshudra Shwasa**
   - No Dyspnoea even after heavy work (movement): 0
   - Dyspnoea after moderate work but relieved later and upto tolerance capacity: 1
   - Dyspnoea after little work but relieved later and beyond tolerance capacity: 3
   - Dyspnoea in resting condition: 4

4. **Atinidra**
   - Sleep upto 6 to 7 hours per day: 0
   - Sleep upto 8 hours/day with Angagaurava: 1
   - Sleep upto 8 hours/day with frumbha: 2
   - Sleep upto 10 hours/day with Tandra: 3
   - Sleep more than 10 hours/day with Tandra and Klama: 4

5. **Swedadhikya** (Sweating at normal temperature in normal condition)
   - Sweating after heavy work and fast movement or in hot season: 0
   - Profuse sweating after moderate work and movement: 1
   - Sweating after little work and movement: 2
   - Profuse sweating after little work and movement: 3
   - Sweating even at rest or in cold season: 4

6. **Anga Daurgandhyaa**
   - Absence of bad smell: 0
   - Occasional bad smell in the body removed after bathing: 1
   - Persistent bad smell limited to close areas, difficult to suppress with deodorants: 2
   - Persistent bad smell felt from long distance not suppressed by deodorants: 3
   - Persistent bad smell felt from long distance even intolerable to the patient himself: 4

7. **Anga Gauravata**
   - No heaviness in body: 0
   - Feels heaviness in body but it does not hamper routine work: 1
   - Feels heaviness in body which hampers daily routine work: 2
   - Feels heaviness in body which hampers movement of the body: 3
   - Feels heaviness with flabbiness in all over body which causes distress to the person: 4

8. **Ati Pipasa**
   - Upto 1 to 1.5 litres of intake per day: 0
   - Upto 1 litre excess intake of water: 1
   - 1 to 2 litre excess intake of water: 2
   - 2 to 3 litre excess intake of water: 3
   - More than 3 litre intake of water: 4

9. **Ati Ksudha**
   - Normal diet with lunch and dinner: 0
   - Morning break fast with lunch and dinner: 1
   - Supplementary food with above mentioned articles: 2

**Objective criteria**
It was assessed on body weight, measurement of circumference and BMI before and after the treatment.

**Statistical analysis**
To assess results objectively and for statistical analysis, multidimensional scoring system was adopted. This scoring was...
Observations and Results

In the present study, a total of 44 patients of Sthaulya were registered. Out of which, 21 patients (13 from trial group and 8 from control group) have completed the course of treatment; whereas 23 patients have left the course against medical advice at different stages.

Enrolled patients were in the range of 15-60 years. Maximum numbers of patients (36.32%) were from the age group of 31-40 years. Sex wise distribution shows that the maximum number of patients (83.99%) were females.

Distribution of 44 patients of Sthaulya according to their Nidana Sevana is shown in Table 1.

Effect of therapy

Effect of therapy in Trial Group on Subjective criteria is shown in Table 2, while its effect on weight reduction, BMI and girth circumference is shown in Table 3.

Effect of placebo in subjective criteria is depicted in Table 4. Effect of placebo on weight reduction, BMI and girth circumference is depicted in Table 5.

Overall effect of therapy

Maximum numbers (38.46%) of patients were found to be moderately improved followed by the same number of patients as improved, 15.38% patients were markedly improved and 7.69% patients remain unchanged in the trial group.

Maximum numbers (50%) of patients were found as moderately improved followed by 37.50% patients as improved and 12.50% patients observed as markedly improved and none of the patient remains unchanged in this group [Table 6].

Discussion

The term “Sthula” itself indicates the deposition of Prithvi and Apa Mahabhuta dominant factors in the body.[11] Nidana (causative factors) of Sthaulya is divided into four categories i.e. Aharatmaka (food), Viharatmaka (behavioral), Manasa (psychological) and Anya (others).

Intake of highly refined food with maximum percentage of carbohydrates and working with high-tech machineries, which makes a person less active and prone to Sthaulya. Now-a-days, Nidanas of Sthaulya are changing, e.g. previously Manasonivratti (reduced mental exercises) and Harshaniyatva (cheerfulness) were said to be the Nidanas of Sthaulya, but these are now changing to increasing stress, which causes episodes of binge eating leading to Sthaulya. Hereditary factor is also the prominent cause for Sthaulya.[12]

Sampatli (etiopathogenesis) of Sthaulya can be interpreted in two ways. According to Charaka, increased Jatharagni (digestive power) causes maximum ingestion and leads to maximum absorption of Prithvi and Apa Mahabhuta dominant factors in the body leading to increased Medodhatu in the body.[13] According to Dalhana, there is a state of Medodhatvagnimandya (reduced status of a type of metabolic component situated at the level of Medodhatu), which leads to excessive formation of improper Medodhatu leading to Sthaulya.[14] Here, Sthaulya is taken for study because there is abundant growth of Medodhatu in the body which is having Prithvi

Table 1: Distribution of 44 patients of Sthaulya according to their Nidana Sevana

<table>
<thead>
<tr>
<th>Nidana (causative factors)</th>
<th>Trial group</th>
<th>Control group</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bijadoshaswabhad (heredity)</td>
<td>15</td>
<td>6</td>
<td>21</td>
<td>47.67</td>
</tr>
<tr>
<td>Aharatmaka (food)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ati Bhojana (over intake)</td>
<td>12</td>
<td>4</td>
<td>16</td>
<td>36.32</td>
</tr>
<tr>
<td>Ati Guru</td>
<td>6</td>
<td>3</td>
<td>9</td>
<td>20.43</td>
</tr>
<tr>
<td>Ati Snigdha</td>
<td>12</td>
<td>4</td>
<td>16</td>
<td>36.32</td>
</tr>
<tr>
<td>Ati Sheeta</td>
<td>4</td>
<td>2</td>
<td>6</td>
<td>13.62</td>
</tr>
<tr>
<td>Ati Madhura</td>
<td>22</td>
<td>8</td>
<td>30</td>
<td>68.18</td>
</tr>
<tr>
<td>Dadhi (curd)</td>
<td>22</td>
<td>10</td>
<td>32</td>
<td>72.72</td>
</tr>
<tr>
<td>Mansa (meat)</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>4.54</td>
</tr>
<tr>
<td>Viharatmaka (daily regimen)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avayayama (lack of physical exercise)</td>
<td>25</td>
<td>12</td>
<td>37</td>
<td>83.94</td>
</tr>
<tr>
<td>Diwaswapa (day sleeping)</td>
<td>25</td>
<td>11</td>
<td>36</td>
<td>81.72</td>
</tr>
<tr>
<td>Ati Nidra (excessive sleeping)</td>
<td>7</td>
<td>2</td>
<td>9</td>
<td>20.43</td>
</tr>
<tr>
<td>Cheshtadvesha (aversion towards physical movements)</td>
<td>12</td>
<td>4</td>
<td>16</td>
<td>36.32</td>
</tr>
<tr>
<td>Asana Sukha (excessive seating)</td>
<td>22</td>
<td>7</td>
<td>29</td>
<td>65.83</td>
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<tr>
<td>Manasa (psychological)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Achintana (lack of mental exercise)</td>
<td>22</td>
<td>7</td>
<td>29</td>
<td>65.83</td>
</tr>
<tr>
<td>Harshaniyatva (cheerfulness)</td>
<td>20</td>
<td>8</td>
<td>28</td>
<td>63.56</td>
</tr>
</tbody>
</table>
and Apa Mahabhuta dominance. It is a condition of Vridhha (increased) Medodhatu. It requires the drug which can cause a diminution of Medodhatu for its cure. Keeping this in view Gomutra Haritaki was selected. Gomutra and Haritaki
both are having Kapha Medodhna (reducing Kapha and Meda) properties due to Agni and Vayu Mahabhuta dominance in them. Hence, it was thought that Gomutra Haritaki will reduce Medodhuta. In this study, control group also planned to rule out the psychological effects of medicine, to rule out the changes occurring seasonally and to assess the effect of medicine other than diet restrictions and exercise.

Abhakta and Pragbhakta Kala were decided for the administration considering the involvement of Doshas in the disease. Therefore, the dose was divided into 3 equal parts, i.e. 2 g for each Kala and administered in Abhakta (early morning) and Prakbhakta Kala (before lunch and dinner).

Strict diet and exercise schedules were advised to all patients. As the observations show, nearly 65% patients were housewives. Least awareness about following proper dietary habits and lack of time to follow exercise might be reasons behind increased prevalence of obesity in housewives and also dropout rates in the present study. The dropout rate of obese individuals is a point of concern observed in the present pilot study. This might be due to two reasons. Attraction towards diet (Lauya) is observed in patients, owing to which the patients do not agree to follow prescribed guidelines for a longer duration. Limited efficacy of trial drug may be the second reason as the patient’s psyche expects faster weight reduction rate in shorter duration. When the medicine shows less effect than the expectations of patient, the psyche tries to divert towards vicious cycle of weight gain and obesity. The dropout rate itself indicates the need of a faster acting medicine for weight reduction in obesity.

In this study, 84% patients were females. The reason behind this observation might be the factors such as puberty, menstrual disturbances, menopause, post-operative and consumption or intake of oral contraceptives. In the observations almost 48% patients were found to have the family history of Sthaulya [Table 1]. Charaka has also stated Beejaswabhabha as one of the important causes of Sthaulya.[13] Observations from the present study confirms these statements from modern science as well as from Ayurveda. Better results were found in symptoms such as Atikshudha (excessive hunger) and Atinidra (excessive sleep) in the trial group than the control group which shows that Gomutra Haritaki might breaking the obstruction caused by Medodhuta in Koshtha and establishing normal pathway of Vataodasa in the Koshtha. Due to this reason, Atikshudha was found to be relieved. This is also evidenced in classics that Gomutra with its Ushna (hot), Tikshna (sharp) properties and Haritaki with its own properties dose the role of Srotovbandhanashana (reliving the obstructions in the body channels).

Better results were found in symptoms such as Swedadhikya (excessive sweating), Angagauravata (heaviness of the body), Angadaargandhya (bad body odor), Atipipasa (excessive thirst), Utsahabham (loss of enthusiasm), and Kshudra Swasa (dyspnoea on exertion), in Control Group than Trial Group. Trial group has shown better results in symptoms such as Chala Spik-Udara-Stana (pendulous buttock/abdomen/breast), Atikshudha and Atinidra. Mild response was noted in weight reduction and BMI in the control group than trial group.

Probable mode of action of Gomutra Haritaki in Sthaulya

Gomutra and Haritaki has got the predominance of Agni and Vayu Mahabhuta. One can see the predominance of Laghu (light), Ushna, Tikshna and Raksha (unctuous) Gunas (properties) in both of them. Where as in case of Sthaulya, there is abundant increase of Medodhuta and this Medodhuta has the predominance of Prithvi and Apa Mahabhuta. In case of Sthaulya one can see the saturation of Guru (heavy to digest), Sheeta (cold in potency) and Snigdha (unctuous) Gunas in the body. Due to the opposite properties, Gomutra Haritaki might have reduced the increased Medodhuta in cases of Sthaulya.[16]

Gomutra Haritaki was prepared by giving only three Bhavanas (a process in which herbs are triturated with liquid material) of Gomutra to Haritaki Churna (powder). If more Bhavanas of Gomutra were given then the results would have been more significant.

Conclusion

Causative factors of Sthaulya mentioned in classics are now changing. Increasing stress, faulty dietary habits and decreased awareness regarding exercise are becoming the prominent causative factors for Sthaulya. Kaptha Prakrti persons were found more prone to Sthaulya so they should be advised proper diet regimens and exercise. In society, percentage of the population suffering from Sthaulya is increasing day by day so they should be made aware regarding the disease and its severe complications before it reaches to epidemic level. Study shows that placebo has shown better results than the trial group. This also reflects the impact of diet restrictions and exercise in the management of Sthaulya.

References

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