



Case Study

EFFECT OF MUSTA (CYPERUS ROTUNDUS) AND PATHYA-APATHYA IN STHAULYA

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ABSTRACT

Sthaulya (obesity) is so profound disease spreading worldwide and is associated with various systematic diseases. Sthaulya is mainly a lifestyle disorder occurring due to our eating habits of preserved and processed food items or it may have some genetic aetiology. Aim: To assess the efficacy of drug Musta along with Pathya-Apathya for 90 days. Material and Method: The subject has been selected from OPD with symptoms of Sthaulya and regular assessment has been done every 15 days at Ayurvedic and Unani Tibbia College and Hospital Karol Bagh. Drug Musta Churna (Cyperus rotundus) is administered orally with Pathya-Apathya for 90 days. At the end of the study, all data information related to the subject before and after treatment like weight, height, BMI measurement, and skin fold thickness of various regions and Lipid profile has been documented. Discussion: Before and after the treatment of the study subjective and objective parameters are thoroughly analysed and it has been found that there are practical changes in various parameters with no side effects. Conclusion: It has been concluded that single Musta churna is highly effective in Sthaulya along with Pathya-Apathya.

INTRODUCTION

Avurveda is a science that which comprises of two words 'Ayu' and 'Veda.' Ayu means life and Veda means knowledge. Hence Ayurveda has been a declared as science of life i.e., Ayu[1]. Acharya Charaka detailed that the features of healthy person; having equal distribution of Mamsa (muscular tissue) and evenly distributed adipose tissue (Meda) in each organ, with proper digestion and maximum age. All sense organs of are quite energetic. He does not attack by disease easily. Hunger, thirst, heat, cold, exertion does not affect badly that person^[2]. Obesity is a chronic progressive and relapsing disease that is highly prevalent and that include a serious risk for the development of systematic disorders such as diabetes hypertension. mellitus. cardiovascular diseases. musculoskeletal disorders especially osteoarthritis.

It is merely not only from beauty purpose but a severe concerned related to many systematic



complications lasting even with life risk.^[3] In *Sthaulya* mainly *Ruksha*, *lekhniya* and mainly *Kapha shamana* drugs are recommended like *Musta* as mentioned in *Lekhniya Mahakashaya*^[4]. *Sthaulya* is considered as *Santarpam janya vyadhi* (due to over nutritional dietary habits) resulting into excessive accumulation of *Meda* (depot fat) in body. Dietary habits, sedentary life style, stress, technology advancement etc are the main reason for high prevalence of *Sthaulya* (obesity)^[5].

Drug Review

Rasa Panchaka (Pharmacodynamic properties) of Musta

- Rasa- Tikta, Katu, Kashaya
- Guna- Laghu, Ruksha
- Veerya-Sheeta
- Vipaka- Katu

Pitta hara: Sheet virya, and Tikta, Kashya Rasa **Kapha hara:** Laghu, Ruksha guna, Katu vipka and

Tikta Kashaya, Katu rasa.

Karma: Lekhana, Dipana, Pachana^[6]

Lekhana karma: It is the process by which *Dhatus* and *Mala* are metabolized and excreted from body, Acharya Sharangdhara has defined *Lekhana karma* as the

process of scraping off *Dhatu* and *Mala* in body by drying them.

It is a process by which Kapha and Meda are removed from the body. According to Yogratnakara Lekhana is an action done by drugs to make body thin $(Krusha)^{[7]}$.

Case Study

A 40-year-old female patient visited in OPD of Ayurvedic and Unani Tibbia College and Hospital, Karol Bagh with complaint of weight gain since more than 5 years. The main symptoms related to *Sthaulya* are found as *Chalsphikudara* (movement of abdomen and hip region during movement), *Alasya* (fatigue) with minimal work and back pain, *Swedaadhikya*

(excessive sweating), *Swas adhikya* (difficulty in respiration), *Atipipasa* and *Atikshudha* (excessive thirst and hunger). There is also family history of weight gain of mother.

Method

Subject detailed history had been taken with proper general and physical examination and *Prakarti* assessment also had been done. All the measurements i.e., circumference and skin fold measurement were taken properly with measuring tape and skin fold measuring vernier calliper respectively. Lab investigation was done for Lipid profile before and after the treatment. After examination subject was under Obese -2 class with BMI 38.67.

Classification of BMI in Normal, Overweight and Obese Individuals[8]

Table 1: Shows Classification of BMI

| S.no | Individual Classification | BMI Range | Risk factor |
|------|---------------------------|-------------------|----------------|
| 1 | Normal Range | 18.50-24.99 | Normal |
| 2 | Overweight | <u>≥</u> 25.00 | Increased |
| 3 | Obese | <u>≥</u> 30.00 | |
| a) | Obese Class -1 | 30.00-34.99 | High |
| b) | Obese Class -2 | 35.00-39.99 | Very High |
| c) | Obese Class -3 | <u>>4</u> 0.00 | Extremely high |

Drug administration: *Musta rhizome churna* (3mg B.D) was given with lukewarm water and assessment was done before and after treatment. *Pathya-Apathya* dietary or physical activity also advised as mentioned below.

Pathya-Apathya Aahara and Vihar[9]

Table 2: Shows Pathya Ahara and Vihar advised

| Pathya Dhanya | Mudga (Vigna radiata), Kultha (Macrotyloma uniflorum), Udalaka (Buck wheat), Shyamaka (Panicum frumentaceum), Arhar (Cajanus cajan), Chana (Cicer arietinum), Masur (Lens culinaris), Chakra muga (Vigna aconitifolia), Kodo (Paspalum scrobiculatum), Neevar Sama (Barnyard millet) | |
|------------------|--|--|
| Pathya Drav | Takra Kshara, Mastu, Madhu, Tila taila, Maduraka | |
| Pathya Vihar | Chinta, Ksharma, Ratrijagran, Methun, Ubatan, Langhna, Dhup sevan, Apatarpana, Ushna Jala | |

Apathya Ahara and Vihar

Table 3: Shows Apathya Ahara and Vihar advised

| Apathya Ahara | Apathya Vihar |
|------------------------------------|-------------------------------|
| Dugadh and Ikshu vikara | Sheetal sananam, Snehan kriya |
| Madhura aahar, Masha, Matshya mans | Sukhaasana |
| Naveen shali /Shuka dhanya | Divya sayan |
| Bhojan paschayat/Panam | Puspa mala, Chandan, Itra |
| Rasayan ousadhi sevan | |

Management of obesity includes^[10]

- **1. Patient counseling:** Detail knowledge of the disease needs to be given to the subject. Patient should be emphasized to reduce the fat instead of lose weight.
- **2. Dietary management:** A very low energy diet consisting of 45 to 70gm high-quality protein, 30 to 50gm carbohydrate, and 2gm fat per day, as well as supplements of vitamins minerals and trace elements has been advised.

Table 4: Shows Preparatory items to avoid and to eat

| No. | Foods to avoid | Foods can be taken |
|-----|--|--|
| 1 | White bread | Brown bread |
| 2 | Condensed milk | Low fat milk and its products |
| 3 | Potato, peas | Fruits green vegetables |
| 4 | Chocolate cookies | Fig bars, Whole grain cookies |
| 5 | Full fat cheese | Cottage cheese, skim milk, plain yogurt, low fat ricotta |
| 6 | Cold carbonated drinks | Fruit spritzers, sugar free iced tea/coffee |
| 7 | Sour cream onion chips | Raw veggies with homemade yogurt dip |
| 8 | Chocolate doughnuts | Raisin toast with peanut butter |
| 9 | Regular bacon | Vegetarian sausage |
| 10 | Chocolate truffles | Chocolate covered strawberries |
| 11 | Maida | Millets, sprouts, whole grains |
| 12 | Fried items | Steamed, boiled, roasted, grilled food |
| 13 | Samosa, Kachori, Poori, Paratha, Cake, pastry | Hung curd sandwich, soya tikkis, high fibre pancake |
| 14 | Starchy veggies | Mint, Lettuce, Methi |

OBSERVATIONS[11]

General Physical Examination

Table 5: Shows General Physical Examination

| Table 3. 5110 w 3 defictar i flysicar Examination | | |
|---|--------------------------|--|
| Physical Examination | Feature | |
| Appearance | Obese | |
| Built | <mark>We</mark> ll built | |
| Nourishment | Well- nourished | |
| Pallor JAPR | No | |
| Icterus | No | |
| Cyanosis | No | |
| Clubbing | No | |
| Oedema | No | |
| Lymphadenopathy | No | |

Dashavidha Rogi Pareeksha

Table 6: Shows Dashavidha Rogi Pareeksha

| Dashavidha Rogi Priksha bhav | Vyakta bhav |
|------------------------------|-----------------------|
| Prakriti | Pitta-Kaphaja |
| Vikrita dosha | Kapha-Vata dosha |
| Dushya | Meda dhatu |
| Sara | Meda sara |
| Samhanana | Avara |
| Satva | Madhyama Satva |
| Aahara Sakti | Madhyama aahar shakti |
| Vyayama Sakti | Avara |
| Satmya | Madhyama Satmya |
| Pramana | Sthula |

Nidana Panchaka (Etiology)

Table 7: Shows Nidana Panchaka in Sthaulya

| Nidana Panchaka | Karan (Responsible Etiological factor) |
|---------------------------|---|
| Nidana- Aahara and Vihara | Lavana, Guru, Singdha aahar |
| Poorvaroopa | Alasya, Gurugatrata, Atipipasa and Atikshudha |
| Roopa | Excessive weight gain |
| Upashaya | Exercise and <i>Laghu aahar</i> |
| Anupshaya | Guru, Singdha aahar |

Samprapti Ghatka (Disease Pathological factors)

Table 8: Shows Samprapti Ghatka in Sthaulya

| Samprapti Ghataka | Sthithi (Condition) |
|--------------------|-----------------------------|
| Udbhava Sthana | Amashaya |
| Vyakta Sthana | Sarva Sharira |
| Adhistana | Medo dhatu |
| Roga marga | Bahya |
| Agni | Teekshagni |
| Dhatwaagni | Mandha |
| Dosha | Kapha and Vata |
| Dushya | Rasa, Mamsa and Medo dhatu |
| Srotas | Medovaha, Rasavaha |
| Sroto dushti | Sanga |
| Sadhyata-asdhayata | Krichh <mark>S</mark> adhya |

Anthropometry and Personal History before and after the treatment

Table 9: Shows Anthropometry and Personal History

| Parameters | Assessment (BT) | Assessment (AT) |
|--------------------------|---------------------------------------|--------------------------------------|
| ВР | 122/84 | 120/80 |
| Pulse | 72 | 70 |
| Height | 1.60 m | 1.60 m |
| Weight | 99 | 92 |
| BMI | 38.67 | 35.93 |
| Chest circumference | 104.5 | 101 |
| Abdomen circumference | 105.2 | 102.6 |
| Hip | 119.4 | 110.5 |
| Middle arm circumference | Rt 56.5 Left 57.4 | Rt 52.3 Left 52 |
| Mid-thigh circumference | Rt 36.2 Left 36.6 | Rt 35 Left 35.2 |
| Mid-Calf measurement | Rt 38.9 Left 39.5 | Rt 37 Left 37 |
| Neck | 38.5 | 35.5 |
| Waist circumference | 100 | 92 |
| Ahara | Vishmasana (irregular dietary habits) | Regular |
| Vihar | Office routine | Office routine and Physical exercise |
| Appetite | Over eating | Adequate |
| Bowels | Clear | Clear |
| Micturition | Urgency | Normal |
| Sleep | Sound | Sound |
| Habits | Non-vegetarian, tea addiction | Non-vegetarian |

Skin-fold Thickness (bilaterally) by skin fold thickness calliper

Table 10: Shows Skin fold measurement

| Skin fold thickness | Before treatment | After treatment | |
|------------------------------------|------------------|-----------------|--|
| Middle portion of biceps | 22.7 | 20.3 | |
| Middle portion of triceps | 24.9 | 23.3 | |
| Mid portion of subscapular region | 20.2 | 19.5 | |
| Middle portion of thigh region | 24.7 | 22.7 | |
| Middle portion of abdominal muscle | 26.5 | 24.6 | |

Investigational History

Table 11: Shows History of Laboratory Investigations Before and After Treatment

| Test | Before Treatment | After Treatment |
|-------------------|------------------|-----------------|
| Serum cholesterol | 181.74 | 168.21 |
| LDL | 117.4 | 110.0 |
| Triglyceride | 133.16 | 110.26 |
| HDL | 37.41 | 36.5 |

Subjective Parameters of Assessment[12]

BT: Before Treatment **AT**: After Treatment

Table 12: Shows Symptomatic Parameters before and after treatment

| S.no | Symptoms | Scoring | BT | AT |
|------|--|---------|----|----|
| 1. | Chala Sphika (Udara Stana) | | 4 | 3 |
| | Absence of <i>Chalatwa</i> | 0 | | |
| | Little visible movement after fast movement | 1 | | |
| | Little visible movement after moderate movement | 2 | | |
| | Movement after mild movement | 3 | | |
| | Movement even after changing posture | 4 | | |
| 2. | Kshudra Swasa / Ayasa Swasa (Dyspnoea) | | 3 | 1 |
| | Dyspnoea/Difficulty in breathing after heavy work but relieved soon | 0 | | |
| | Dyspnoea after moderate work but relieved late and upto tolerance | 1 | | |
| | Dyspnoea after little work but relieved soon and upto tolerance | 2 | | |
| | Dyspnoea after little work but relieved soon and beyond tolerance | 3 | | |
| | Dyspnoea in resting condition | 4 | | |
| 3. | Alasya/ Utshaha hani (Laziness) | | 4 | 1 |
| | No | 0 | | |
| | Doing work satisfactory with initiation late in time | 1 | | |
| | Doing work unsatisfactory with lot of mental pressure 2 & late in time | 2 | | |
| | Not starting any work in his own responsibility, doing 3 little work very slow | 3 | | |
| | Does not have any initiation & not wants to work 4 even after pressure | 4 | | |
| 4. | Daurbalyata (Alpa Vyayam) | | 4 | 2 |
| | Can do routine exercise | 0 | | |
| | Routine moderate exercise without difficulty | 1 | | |
| | Only mild exercise | 2 | | |
| | Only mild exercise without difficulty | 3 | | |
| | Cannot do even mild exercise | 4 | | |

| F | Midwadhilma (Hoory sloop) | | 2 | 0 |
|----|--|---|---|---|
| 5. | Nidradhikya (Heavy sleep) | 0 | Z | 0 |
| | Normal sleep 6-7 hrs/ day | 0 | | |
| | Sleep up to 8hrs with Anga gurav | 1 | | |
| | Sleep up to 8hrs with Anga gurav/and Jrimbha | 2 | | |
| | Sleep up to 10hrs / day with <i>Tandra</i> | 3 | | |
| | Sleep up to 10hrs / day with <i>Tandra</i> & <i>Klama</i> | 4 | | |
| 6 | Daurgandhata (Foul smell) | | 1 | 1 |
| | Absence of bad smell | 0 | | |
| | Sometimes bad smell and when close to and difficult to suppress with deodorants | 1 | | |
| | Persistence of bad smell from long distance and not even suppressed by deodorants | 2 | | |
| | Persistence of bad smell even from very long distance and intolerable to patient himself | 3 | | |
| 7. | Snigdhangata (Oily skin) | | 1 | 1 |
| | Normal Snigdhata | 0 | | |
| | Oily luster even in summer season | 1 | | |
| | Oily skin in dry season | 2 | | |
| | Oily luster excess in dry season and difficulty in removal | 3 | | |
| | Persistence and profusion sticky and oily all over body | 4 | | |
| 8. | Atipipasa (Excessive thirst) | 4 | 2 | 2 |
| 0. | Normal thirst | 0 | | |
| | 2 Liter water | | | |
| | | 1 | | |
| | 3-4 Liter water | 2 | | |
| | 4-5 Liter water | 3 | | |
| | More than 5 liter water | 4 | _ | _ |
| 9 | Atikshuda (Excessive hunger) | | 2 | 0 |
| | No craving for food but could take the meal TAPE | 0 | | |
| | Willing towards only most liking food & not to others | 1 | | |
| | Willing towards only one among Katu/Amla / Madhura food stuffs | 2 | | |
| | Willing towards some specific Ahara / Rasa Vishesa | 3 | | |
| | Equal willing towards all the Bojana padartha | 4 | | |
| 10 | Alpa Vyanvayu (Libido) | | 0 | 0 |
| | Unimpaired libido and sexual performance | 0 | | |
| | Decrease in libido but can perform sexual act | 1 | | |
| | Decrease in libido but can perform sexual act with difficulty | 2 | | |
| | Loss of libido and cannot perform sexual act | 3 | | |
| 11 | Gatra Sada (Fatigue) | | 3 | 1 |
| | No fatigue | 0 | | |
| | Little fatigue in doing hard work | 1 | | |
| | Moderate fatigue in doing routine work | 2 | | |
| | Excessive fatigue in doing routine work | 3 | | |
| | Excessive fatigue even in doing little work | 4 | | |
| 12 | Medovridhi (Fat deposition) | 1 | 4 | 3 |
| 14 | | 0 | 4 | 3 |
| | Less than 25kg/m ² | 1 | | |
| | In between 25.1-29.9kg/m ² | | | |
| | In between 30- 33kg/m ² | 2 | | |
| | In between 33.1-35.9kg/m ² | 3 | | |

| | More than 36 | 4 | | |
|----|-------------------------------------|---|---|---|
| 13 | Agnibala (Digestion) | | 3 | 3 |
| | Appetite after 1-2 hrs | 0 | | |
| | Appetite after 2-4 hrs | 1 | | |
| | Appetite after 4-6 hrs | 2 | | |
| | Appetite after 6-8 hrs | 3 | | |
| | Appetite after 8-10 hrs | 4 | | |
| 14 | Swedadhikya (Excessive sweating) | | 2 | 1 |
| | Sweating after heavy work | 0 | | |
| | Sweating after little work | 1 | | |
| | Profuse sweating after heavy work | 2 | | |
| | Profuse sweating after minimum work | 3 | | |
| | Sweating even in resting condition | 4 | | |

SF- 36 Score Improvement Before and After treatment^[13]

(The Short-Form-36 Health Survey (Rand Corporation and John E. Ware Jr. 1990, Revised 1996)

Table 13: Shows SF-36 Scoring

| Health Status | Before treatment Score | After treatment Score | | | | | |
|---|---------------------------|-----------------------|--|--|--|--|--|
| Physical functioning | 10 | 55 | | | | | |
| Role limitations due to physical health | 0 | 80 | | | | | |
| Limitations due to emotional problems | veda 33.3 | 40 | | | | | |
| Energy/ fatigue | 30 | 30 | | | | | |
| Emotional well being | 36 | 52 | | | | | |
| Social functioning | 0,0 | 50 | | | | | |
| Pain | 10 | 65 | | | | | |
| General Health | 15 vo. 15 | 35 | | | | | |

RESULTS

Treatment with single *Musta Churna* with lukewarm water two times per day shows a good significant result in reduction of weight and BMI. Weight loss from 99kg to 92kg and BMI from 38.67 to 35.93 within 90 days treatment has been observed along with *Pathya-Aahar Vihar*. Symptoms of *Sthaulya like Daurbalyata, Gatra sada, Kshudra Swasa, Alasya, Swedadhikya, Medovridhi* show great improvement from previous condition. The Short-Form-36 Health Survey (Rand Corporation and John E. Ware Jr. 1990, Revised 1996) has also been assessed and it has noticed that there is also significant impact on general health status.

DISCUSSION

A case that was selected for treatment of *Sthaulya* treated with single *Musta Churna* having and followed a proper dietary habit along with behavioural changes for 90 days. General physical and systemic examination had been done to exclude any associated disease. Primary outcome had been achieved as improvement in anthropometrical girth circumferences and skin fold thickness measured to

find the reduction in muscular mass and reduction in symptomatic relief. Lipid profile that was also raised in patient which shows marked improvement. Secondary outcomes seen in better health status calculated from SF-36 scoring that was recorded before and after treatment for assessing improvement in daily and social life routine. From safety point of view, no adverse effect has been recorded. No controversy matter has been occurred in this study. Future directions are more of single herbal drugs can be effective in management of *Sthaulya* along with *Pathya-Apathya* dietary and behavioural changes.

CONCLUSION

Conclusion has been drawn from case study that single *Musta churna* is be highly effective in reduction of weight and BMI. *Sthaulya* symptoms can get sided away or improved to a great extent. Body organ measurement and skin fold measurement shows a fine improvement. Lipid profile shows a significant change after taking the treatment. *Pathya-Apathya* also helpful in siding away the obesity symptoms.

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