

EFFICACY STUDY OF MADHUTAILIKA BASTI IN LEAN AND WEAK PATIENT

Pathan Sadik H.¹, Kulkarni Sachin S.², Joshi Yashashree V.³

¹PG Scholar, Department of Samhita & basic principles of Ayurved, BVDU, College of AYurved, Pune

¹Associate Professor, Department of Samhita & basic principles of Ayurved, BVDU, College of AY-
Urved, Pune

¹Professor, Department of Samhita & basic principles of Ayurved, BVDU, College of AYurved, Pune

Email: vdshpathan@gmail.com

ABSTRACT

Method: 15 lean and weak patients were randomly selected according to inclusion criteria. An informed and written consent was obtained from the participants, clinical trial was conducted. *Madhutailika Basti* (*Charaka Siddhithana 12/18(13)*) was given for seven days, follow ups were taken on 8th, 15th and 30th day from commencement of treatment. Objective assessment was carried out by assessing weight, mid arm circumference in mm, body mass index (BMI), fatigue index (Harvard step test) and hand grip dynamometer. **Observation:** Chief complaints observed of lean patients, emaciation of muscle of abdomen were observed in 93.33% patients, Apparent vascular network in 86.67%, and emaciation of muscle of buttocks and neck in 80.00% were observed. **Discussion:** After the analysis of results on subjective and objective parameter, remarkable improvement with weight, BMI, fatigue index, hand grip dynamometer test and abdominal circumference was found in this study. **Conclusion:** *Madhutailika Basti* was significantly effective for *Brimhana* with objective parameters like Weight gain, BMI, fatigue index, hand grip dynamometer and increase in abdominal circumference.

Keywords: Brimhana, lean and weak, Madhutailika Basti

INTRODUCTION

Emaciation is wide spreading health and nutrition problem in developing countries. It is observed that tolerating physical exercise, hunger, thirst, diseases and drugs is not possible for a lean person¹. General weakness or feeling lethargic is a common problem faced by many

lean patients. Excessive emaciation causes *Swasa, Kasa, Shosha, Pliha, Gulma, Raktapitta, Agnimandya* which may further leads to death². Hence due attention to such problem is need of hour. *Acharya Charaka* has mentioned *Brimhana* as method of treatment that is intend-

ed to impact qualitative and quantitative improvement to bodily elements³. *Brimhana* is the important therapeutic regimen highlighted by all *Ayurvedic* classics. *Acharya Vagbhata* mentioned *Brimhana* as synonym of *Santarpana*⁴. In *Ashtanga Hridaya Sootrasthana* it is mentioned that in conditions like *Vataprakopa* or *Pitta-Vata Prakopa*, *Shamana* therapy is considered as *Brimhana*⁵. Drugs dominating of *Prithvi* and *Aapa Mahabhoota* are used in such conditions.

Aim: To study efficacy of *Madhutailika Basti* in lean and weak patients.

Objectives:

- 1: To study concept of *Brimhana* from *Charak Samhita*.
- 2: To study efficacy of *Madhutailika Basti* in lean and weak patients.

Hypothesis:

H₀: There is no significant effect of *Madhutailika Basti* for *Brimhana* in lean and weak patient.

H₁: There is significant effect of *Madhutailika Basti* for *Brimhana* in lean and weak patient.

Material and Methodology

Materials-

1. *Charaka Samhita* with 'Ayurveda Dipika' commentary of *Chakrapani Datta*.
2. Other allied *Ayurvedic* literature and journals.
3. Published research papers and databases.
4. 15 patients
5. All ingredients of *Madhutailika Basti* (Ch. Si. 12/18)
6. All required instruments related with *Basti Karma*.

Methodology:

Clinical study:

For the clinical study a special case paper was prepared. Total 15 patients were randomly selected according to inclusion criteria. An informed and written consent was obtained from the participants, clinical trial were conducted after CTRI registration (REF/2016/09/012268.). *Basti* procedure was done according to *Charaka Samhita. Madhutailika Basti* (250 ml) was given for seven days, follow up were taken on 8th, 15th and 30th day from commencement of treatment. Clinical study was based on literary study which includes methodology, inclusion criteria, exclusion criteria, subjective criteria, objective criteria and general observations and effect of therapy.

Inclusion criteria:

- Patients of either sex having two or more classical signs and symptoms of lean person like emaciation of muscle of buttocks, emaciation of muscle of abdomen, emaciation of muscle of neck, Apparent vascular network, skinny or bony appearance, prominent Joint.⁶
- Patient having physical weakness.
- Age Group: 16 yrs – 50 yrs
- BMI : Below 18.5 kg/m²
- Fatigue Index less than 80 (Harvard Step Test).

Exclusion criteria:

- Patient below 16 years and above 50 years
- Patient having systemic diseases like Ischemic Heart Disease (IHD), Hypertension and other major illness.
- Patient contraindicated for *Basti*.

Assessment criteria:

1. Subjective criteria: The assessment was done by assessing the cardinal symptoms emaciation of muscle of buttocks, emaciation of muscle of abdomen, emaciation of

muscle of neck, apparent vascular network, skinny or bony appearance, prominent joint and physical weakness.

• **Weakness:**

Table: weakness grade

weakness	Grade
No weakness	0
Slight weakness	1
Feeling weak but can perform daily routines	2
Feeling weak, it is difficult to perform daily routine	3

2. Objective criteria:

Objective assessment was carried out by assessing weight, mid arm circumference in mm, body mass index (BMI), fatigue index (Harvard step test) and hand grip dynamometer.

• **Fatigue index:**

As strength is determined by *Vyayam Shakti*⁷, to know the actual strength of Patient fatigue index (i.e. Harvard Step test) is performed with all standard procedure. In this test, the male subject step up and down on 20 inch high bench and

female subject 18 inch high bench 30 times per minute for four minutes. The rate is fixed with the help of metronome. Ask the subject to step up and down by adjusting the rate with the metronome. If he/ she gets exhausted earlier, note the duration for which he / she was able to perform the test. At the end of test ask the subject to sit immediately. count the pulse and record during 1-1.5 minutes, 2 – 2.5 minutes, 3 -3.5 minutes interval.

To calculate the fatigue index use the following formula.

$\text{Fatigue index} = \frac{\text{duration of exercise in second}}{2} \times (\text{sum of pulse count during recovery}) \times 100$

Table: Classification of fitness according to index –

Below 55	Poor
55 – 64	Low average
65 – 79	Average
80 – 89	Good
90 and above	Excellent

• **Hand Grip Dynamometer- For *Bala Parikshana*.**

- For *Bala* reading on Hand Grip Dynamometer was noted in kilograms.
- Instruments – A standardized Dial type Hand grip dynamometer.

• **Procedure:–**

Subject was instructed to stand straight. Subject was instructed to flex his right hand up to 90 degree. Then the subject was instructed to hold his fist around grip of Hand Grip Dynamometer. Then the subject was instructed to press the grip

at once by applying maximum possible pressure. Reading on the dial of the Hand grip dynamometer at the moment of maximum contrac-

tion was noted as Rtgp in kilograms. Same procedure was repeated for the left hand and a reading was noted as Ltgp in kilograms.

Table: Administration criteria of Madhutailika Basti:

Numbers of patients	15 patients, single group.
Medicine	<i>Madhutailika Basti yoga of Charaka Siddhithana 12/18(13)</i>
Ingredients of <i>Madhutailika Basti</i> ⁸	1) <i>Madhu</i> (Honey) -60ml 2) <i>Tīla Taila</i> (sesamum indicum) – 60 ml 3) <i>Shatapushpa</i> (<i>Anethum sowa kurz</i>) – 10 gm 4) <i>Saindhava</i> - 3 gm 5) <i>Ushnodaka</i> (Luke warm water) – 120 ml
Route of administration	By anal canal
Dose	250 ml
Duration	7 days
Time for <i>Basti</i>	Before 10 am with empty stomach
<i>Puravkarma</i>	<i>Snehana: Sarvang Bahya Snehana</i> with <i>Tīla Taila</i> <i>Swedana: Sarvang Bashpa Sweda (Mridu/Alpa)</i>
<i>Pachatakarma</i>	<i>Alpa Tadana</i> on thigh, buttocks and <i>Padatala</i> .
<i>Pathya</i>	<i>Laghu Anna, Purana Dhanya, Mudga.</i>
<i>Apathya</i>	Patient is advised to avoid <i>Vataprakopaka Ahara</i> and <i>Vihara</i> and <i>Ashthamahadoshkara Bhava</i> ⁹ and any nutritive medicines if they are consuming.
Assessment days	Day zero and 30 th day
Follow up	8 th day, 15 th day and 30 th day from commencement of treatment.

Method of preparation of Madhutailika Basti Dravya is as follows:

- 1) Add *Madhu* and *Saindhava*, mix it properly till become jelly like substance.
- 2) Add *Tila Taila (Sneha)* and mix it properly.
- 3) Add fine powder of *Shatapushpa (Kalka)* and mix it properly.
- 4) At the end add *Ushnodaka* (Luke warm water) and homogenous mixture is prepared.

Observation:

In this study it was observed that, in 15 patients of the present series, emaciation of muscles of

abdomen was observed in 93.33% patients, apparent vascular network in 86.67%, emaciation of muscles of neck and buttocks in 80%, skinny or bony appearance in 46.67% and prominent joints observed in 20% patients. *Respiration Rate* of 64% patients was in between 20-25 per minute. 93.33% patients were having *Mamsa Kshaya*, followed by 86.66% and 73.33% *Medakshaya* and *Rasakshaya* respectively. 100% patients were taking excess *Katu Rasa* while 46.67% patients were taking *Tikta Rasa* in their diet. 40% patients of the study were having disturbed sleep due to *Ratrijagrana* while

33.33% due to *Khanditnidra*. On observing *Manasa Hetu*, *Atichinta* found in maximum no of patients i.e. 80%. While *Krodha* found in 73.33% of the patients. 60% patients were having *Samyaka Agni*, while 40% were having *Vishama Agni*. 93% patients were having *Mamsa Dhatu Agni Mandya*. 93% patients were having low blood pressure.

Statistical analysis:

The obtained information was analyzed statistically in terms of mean score (x), Standard Deviation (S.D.) and Standard Error (S.E.). Paired 't' test was carried out at the level of 0.05. Statistical analysis of objective parameter weight, BMI, mid arm circumference, fatigue index, hand grip dynamometer, abdomen circumference and hip circumference were noted.

- Effect of *Madhutailika Basti* for *Brimhana* on weight has mean score of 44.38 before and 45.36 after treatments, improvement of 2.16% was found with p value 0. Here P value <0.05 i.e. rejected H_0 i.e. *Madhutailika Basti* was effective on weight gain in lean and weak patient.
- Effect of *Madhutailika Basti* for *Brimhana* on BMI has mean score 17.27 before and 17.64 after treatment, improvement of 2.12% was found with p value 0. Here P value <0.05 i.e. rejected H_0 i.e. *Madhutailika Basti* was effective on BMI in lean and weak patient.
- Effect of *Madhutailika Basti* for *Brimhana* on left mid arm circumference has mean score of 212.6 before and 218.66 after treatment, improvement of 2.74% was found with p value 0.39 and effect of *Madhutailika Basti* for *Brimhana* on right mid arm circumference has mean score of 221.66 before

and 222.33 after treatment, improvement of 0.30% was found with p value 0.43.

Here P value >0.05 i.e. Accepted H_0

i.e. *Madhutailika Basti* was not effective on Mid Arm Circumference in lean and weak patient.

- Effect of *Madhutailika Basti* for *Brimhana* on fatigue index has mean score of 29.27 before and 36.06 after treatments, improvement of 18.84% was found with p value 0. Here P value <0.05 i.e. rejected H_0 i.e. *Madhutailika Basti* was effective on Fatigue Index in lean and weak patient.
- Effect of *Madhutailika Basti* for *Brimhana* on left hand grip dynamometer has mean score of 16.6 before and 18.73 after treatment, improvement of 11.39% was found with p value 0.012 and effect of *Madhutailika Basti* for *Brimhana* on right hand grip dynamometer has mean score of 17.06 before and 19.8 after treatment, improvement of 13.80% was found with p value 0.049. Here P value <0.05 i.e. rejected H_0 i.e. *Madhutailika Basti* was effective on Hand Grip Dynamometer in lean and weak patient.
- Effect of *Madhutailika Basti* for *Brimhana* on abdomen circumference has mean score of 69.76 before and 70.63 after treatment, improvement of 1.23 % was found with p value 0.009. Here P value <0.05 i.e. rejected H_0 i.e. *Madhutailika Basti* was effective on Abdomen circumference in lean and weak patients.
- Effect of *Madhutailika Basti* for *Brimhana* on hip circumference has mean score of 86.56 before and 87.16 after treatments, im-

provement of 0.69% was found with p value 0.057.

Here P value > 0.05 i.e. Accepted H_0
i.e. *Madhutailika Basti* was not effective on hip circumference in lean and weak patient.

DISCUSSION

A lean person has very less tolerance for physical exercise, hunger, thirst, diseases and drugs. General weakness is a common problem faced by many lean patients.

In lean person, as specific line of treatment all the *Acharyas* observed importance of *Brimhana* therapy. According to *Acharya Charaka*, *Brimhana* therapy should be *Laghu Santarpana*¹⁰ in nature. Because in lean patient *Agni*, physical strength and other related aspects are functioning poorly. Here due to *Laghu Guna*, *Agni* is increased and *Santarpana* leads to nourishment¹¹.

Discussion of Clinical study:

Ahariya Hetu:

Katu Rasa:

In this study it is revealed that 100% participants consume *Katu Rasa*. *Katu Rasa* due to its *Katu Vipaka*, *Ushna* property dries up the *Drava Bhava* in the body leading to reduction in *Saumya* properties of *Dhatu*s. Due to its *Ushna*, *Teekshana* and *Laghu* property it acts as *Lekhana* to *Mamsa Dhatu*¹². It also reduces *Kapha Dosha* and *Meda Dhatu* by its *Ushna*, *Teekshana* and *Ruksha* Property.

Manasa Hetu:

Manasa Hetu found in which maximum 80.00% patients were having *Atichinta* followed by 73.00% patients was having *Krodha*. *Chinta*, *Shoka* and *Bhaya* leads to vitiation of *Vata* and *Pitta* which causes *Rasa-Rakta Dushti* leading to further *Dhatu Kshaya* resulting in emaciation.

Chief complaints observed of lean patients, emaciation of muscle of abdomen were observed in 93.33% patients, apparent vascular network in 86.67%, and emaciation of muscle of buttocks and neck in 80.00% were observed. This denotes muscular wasting and loss of subcutaneous fat at abdomen, Hip and neck. The human body can be divided in to three groups based on its looking viz- obese, normal and lean. There are some places in the body where generally fat deposits and these are – hips, abdomen and neck. Apparently a normal looking person having more bulk of fat at these places may be taken as obese, on other hand when they have less fat at these places Then termed as lean

Cardio- respiratory strength:

60.00% patients were having higher Rate of respiration i.e. 20-25/min. whereas low blood pressure found in 93.00% patients. This indicates that lean persons have less cardio-respiratory strength that means weakness was found in lean Person. Improvement in fatigue index was found significant due to *Madhutailika Basti*, this indicates cardio respiratory strength was improved.

Effect of *Madhutailika Basti* on objective parameter:

Fatigue index was increased by 18.84%, this means physical strength was increased by *Madhutailika Basti* as this *Basti* is *Balya*, *Rasayana*, *Vrushyatama* and *Brimhana*.

Improvement of 13.80% and 11.39% was found in Rt hand grip dynamometer and Lt hand grip dynamometer respectively, this means muscular strength of both the arms increased by *Madhutailika Basti* due to *Brimhana* and *Balya* action. Weight and BMI increased by 2.16% and 2.12% respectively. Abdominal circumference was increased by 1.23%. Due to *Dipana* Action of

Madhutailika Basti, qualitative formation of *Ahara Rasa* takes place, which in turn nourishes other *Dhatus* leading to *Mamsa* and *Meda Dhatu Vruddhi*, resulting in Weight gain. Due to deposition of fat at abdomen, abdomen circumference was also increased. As weight increased BMI also increased.

Mode of action of *Madhutailika Basti*:

The main contents of this *Basti* are *Madhu*, *Taila*, *Shatapushpa* and *Saindhava*. This *Basti* is *Dipana*, *Brimhana*, *Vrushyatama*, *Rasayana*, *Balya* and *Nirupadrava*. *Madhu* having *Guru*, *Snigdha*, *Pitta- Kapha Shamana* and *Yogavahi* property, increases potency of *Basti*. *Taila* having *Guru*, *Snigdha*, *Madhura Vipaka* and *Ushna* properties, pacifies dry, rough properties of *Vata*. *Madhu* and *Taila* are excess in *Madhutailika Basti*, this combination acts as excessively *Vrushya*. *Saindhava* having *Laghu*, *Snigdha* and *Tridosahara* properties, reaches up to micro channels, breaks down morbid mala and liquefies *Dosha*. *Shatapushpa* with *Katu*, *Ushna*, *Teekshna*, *Laghu*, *Ruksha* and *Vata-Kaphahara* Properties acts as *Agni Dipana* and *Srotasa Shodhana*. *Madhutailika Basti* normalizes the *Apana Vata* through both local and systemic effect. Due to *Dipana* Action of *Madhutailika Basti* diet is increased, qualitative and quantitative formation of *Ahara Rasa* takes place, which in turn nourishes other *Dhatus* leading to *Mamsa* and *Meda Dhatu Vruddhi*. By virtues of all these, *Madhutailika Basti* resulting in *Brimhana* in lean and weak patients.

CONCLUSION

Brimhana acts not only on *Mamsa Dhatu* but also on *Rasa*, *Rakta*, *Meda*, *Asthi*, *Majja* and *Shukra Dhatu*.

Madhutailika Basti is significantly effective for *Brimhana* in lean and weak patient.

Madhutailika Basti is significantly effective for *Brimhana* with objective parameters such as Weight gain, BMI, fatigue index, hand grip dynamometer, and increase in abdominal circumference.

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