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An open labeled clinical trail on the effect of *Vrikshamla* in *Sthaulya* (obesity) w.s.r to hyperlipidaemia

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ABSTRACT

Obesity is one of the leading cause for more than 53 diseases and in India around 30 million peoples are suffering with *Sthaulya* (obesity), individual habits with stressful life, wrong dietary habits and sedentary life is the main cause of disease and no satisfactory treatment is available in conventional system. Hence there is need explore alternative system of Indian medicine like Ayurveda for the benefits of sufferers Ayurveda dealt this disease as *Sthaulya* (obesity) under *Medoroga* (Adipose tissue disorder) and many treatment modalities have been explained number of drugs in Brahatrayi (Charaka, Sushruta & Vagbhat) were cited Bhavamishra was the author of Bhavaprakash Nighantu (Lexicon) which is one of the Laghutrayis (Sharanghadara, Madhavanidhana & Bhavaprakash) text is highlighted with Karmaoushadi (action based drug) such as *Amradi Phala Varga* explained Vrikshamla considered as drug index of Ayurveda, thus present study was designed to screen the drug with properties of *Kapha Medohara* (ability to reduce *Kapha* & Fat), *Medorogahara* (reduces Adipose tissue), *Sthaulyanashaka* (Anti obesity) and *Karshyakara* (ability to make lean) from *Bhavaprakasha Nighantu* in Ayurveda.

Key words: Obesity, *Sthaulya*, *Vikshamla*, *Bhavaprakasha Nighantu*, Ayurveda.

INTRODUCTION

Ancient Indian vedic thought has now become globally acceptable with its universal terminology. Ayurveda believes that human being is a epitome of universe. And is basically composed of same elements that are known as five basic elements, namely Prithvi, Aap, Teja, Vayu and Akasha, all the five elements are called as *Panchamahabhuta*, around the axis of *Panchamahabhuta* the three pillars of life are revolved. Ayurveda is based on the principle of

Tridoshas Vata, Pitta and kapha, these tridoshas are the basic constituents of the physiological system, these tridoshas are basic metabolic elements constituting the body and mind of the living organisms. As we moved into rapid modernization by providing almost luxury to our day- to- day life, an average of person is unable to maintain individual's health by not adopting proper dietary and daily activities as a result of which many diseases such as *Sthaulya* or *Medoroga*/Hyperlipidemia occur. Therefore Hyperlipidemia may be correlated with the conditions of Santarpana-janya-vikara as explained in our classics (Ch.Su.23rd). So for Concept of Hyperlipidaemia is the excess accumulation of lipids (Especially plasma lipids) in the body, leading various acute or chronic condition. "Ayurveda classics have also referred that "*Prayaha-Snehatmedaha-Pravardhayet*" (M.Ni-34/3-4), Implying the fact that excess Sneha is responsible for excess production of Meda and such excessively produced meda causing avarodha or avarana of other, Dhatu leading to *Medoroga/Sthaulya-laxana* as well as upadrava, here

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we can link the vikruti which is explained in Ayurveda with present modern knowledge about lipids. Therefore need and relevance of proposed research study for obesity/ Hyperlipidaemia is a common disorders of recent days, it affects about 25% of total population, mostly the people of developed countries as well as developing countries are said to be suffering from this condition. Blood levels of cholesterol and triglycerides give a valuable information for the assessment of errors in lipids-metabolism. Various surveys in USA and European countries have shown a definite correlation between a high incidence of coronary heart diseases and raised cholesterol and triglyceride levels in the body, conversely in some estern countries the average of cholesterol level is low, as well as the incidence of coronary heart diseases. In India the incidence of Hyperlipidaemia and related disorders are increasing every year as the evidence of positive correlation between LDL cholesterol and cardiovascular diseases. There is even stronger negative correlation with HDL higher the plasma HDL level, the lower risk of cardiovascular diseases. Diagnosis of Hyperlipidaemia is done by clinical and laboratory investigations, If Hyperlipidemia is diagnosed the prime aim is to bring back the high cholesterol level to normal levels, the LDL triglycerides and total cholesterol levels should be lowered and HDL level should be increased by diet control and drug therapy which has equal importance in controlling the disease. Impairment of various enzymes is the cause for Hyperlipidaemia, Ayurveda considers that the cause of all these conditions are Agni-vikruti, here Jatharagni, Bhutagni and Dhatwagni are involved. In this regard approach of Ayurveda is more safer. comprehensive and rational. in this present study the drug or medicine is selected *Vrikshamla*, which is indicated in *Sthaulya/ Medovridhi/ Santarpana- Janya- Vikaras*. Accumulation of *Ama* and vitiated *Dhatu*s are seen in this condition, these drugs have *Deepana*, *Amapachana*, *Kapha* and *Meda Shamana*, *Anulomana* properties. Which forcefully clears the accumulated and improper *Dhatu*s and *Malas* from the *Dhatu*s and removes deposited *Malas* from the *Srotas* and make *Dhatu*s and *Srotas* clear and normal which can be

used in this conditions. In the pathology of *Sthaulya*, *Kapha* is main *Dosha* and *Meda* is main *Dushya*, while *Agnimandya* takes place at *Medodhatvagni* level. So, that type of drug therapy should be selected which have *Kapha* and *Medohara* property and have efficacy to correct the function of *Medodhatvagnimandya*. So many preparations have been mentioned in our texts for the treatment of *Medodhatu Vridhi*. But keeping in mind easy availability, compatibility, cost and preparation of drug *Vrikshamla*^[8] were preferred and select for present study.

OBJECTIVES OF THE STUDY

1. To evaluate the therapeutic effect of *Vrikshamla* in *Sthaulya* (obesity).
2. To evaluate the therapeutic effect of *Vrikshamla* in *Medoroga / Santarpanajanya- Vikaras*.

MATERIALS AND METHODS

Inclusion Criteria

1. Both Males & females will be selected.
2. Patient will be selected from the age group 20-50 yrs
3. Lipid profile level
4. Serum ch. Above -200 mg/dl
5. Serum tri. above -165mg/dl
6. LDL above – 150mg/dl
7. HDL below – 70mg/dl
8. Patient of *Sthaulya* diagnosed according to classical features.
9. Patients with BMI above -30

Exclusion Criteria

1. Patients below the age of 20 years and above the 50 years.
2. Patients undergoing other treatment for *Sthaulya* (obesity).
3. Known cases of Diabetes mellitus (*Madhumeha*), Hyperthyroidism, Thyrotoxicosis, Nephrotic syndrome, Hypertension, Cardiac patients, Gouty

arthritis, Infectious diseases, Endocrinal and CNS disorders.

4. Hepatic Disorders

Diagnostic Criteria

Assessment of Subjective Parameters

- *Kshudha aadhikya (Excessive hunger)*
- *Pipasa aadhikya (Excessive thirst)*
- *Kshudra shwasa (Breathlessness)*
- *Swedaadhikya (Excessive sweating)*
- *Atinidra (Excessive sleep)*
- *Daurbalya (General debility)*
- *Gaurava (Heaviness of the body)*
- *Alasya (Letharginess)*
- *Angasada (Sluggishness of the body)*
- *Krichchavyavayata (difficulty in sexual intercourse)*

Objective Parameters

1. Body weight
2. BMI
3. Body circumference measurements (at upper mid arm, chest, abdomen, waist-hip)
4. Blood pressure
5. Lipid profile Test.

Design of study

- Single Arm trail/ an open clinical trail
- Sample size: 60
- Statistical analysis: Paired 't' test and other appropriate statistical tests will be adopted.

Intervention

Vrikshamla Capsule 500mg BD before meal with luke warm water

Duration of the study

60 days

Follow up

Follow up will be done monthly for 3 consecutive months.

VRIKSHAMLA (*GARCINIA CAMBOGIA*)

Botanical Classification

1. Kingdom - Plantae
2. Subkingdom - Tracheobionta
3. Division - Magnoliophyta
4. Class - Magnoliopsida
5. Subclass - Dilleniidae
6. Order - Malpighiales
7. Family - Clusiaceae
8. Genus - Garcinia
9. Species - *Garcinia cambogia*

Chemical Composition

The fruits of *Vrikshamla* contains 10% maleic acid and very little quantity of tartaric and citric acid. Garcinia is a rich source of active compounds including garcinol, isogarcinol, xanthochymol, isoxanthoehymol and Hydroxy citric acid. These are flavonoids, benzophenones, xanthenes, lactones and phenolic acids. Xanthenes are oxygenated heterocyclic compounds present in higher plants. Xanthone nucleus is symmetric and is known as xanthen-9H-ones or 9-xanthenone or dibenzo- γ -pyrone. The biological activities of these compounds depend on the different substituent's position and nature. Flavonoids are polyphenolic compounds, which are remarkable group of plant metabolites. The antioxidant and free radical scavenging activity of flavonoids depend on the position of hydroxyl groups and other chemical features. Benzophenones are organic group of aromatic ketones having the parent compound diarylketone, which have wide applications in pharmaceutical industry as the plant has a wide range of biologically active compounds showing broader activity range.

Ayurvedic Pharmacodynamic

Vrikshamla (Garcinia cambogia)

Rasa : Madhura, Amla, Katu (Amlarasa dominant)

Guna : Ruksha, Laghu

Virya : Ushna

Vipaka : Amla

Prabhava : Hridya

Doshagnata : Kapha-Vatahara

Parts Used : Fruits, Seed oil, Root bark

Dose : 2 to 4 gm powder. Fruit Juice-10 to 20 ml,

Fruit extract - The usual dose of Garcinia extract is 300 to 500mg BD before meal with water.



Vrikshamla (Extract)

The extract (water based) of Vrikshamla fruits has Amla, Katu and Madhura Rasa. It also has Laghu and Ushna Guna with predominance of Vayu and Agni Mahabhuta. The Deepana, Pachana and Kapha-Medohara properties of Vrikshamla are also mentioned in Ayurvedic literature. Due to its Laghu and Ushna Guna it digest the Amasanchaya and clears the Srotorodha. It contains mainly Amla Rasa which has the property of Agnideepana also predominance of Vayu and Agni Mahabhuta makes it Laghu Dravya

having inherent tendency of Agnisamdrukshana (Ch.Su.-5/6). So on the basis of these factors it is quite acceptable that Vrikshamla digest the Amasanchaya, clears the Srotorodha and improves the status of Jatharagni and Dhatvagni. Moreover modern science has also shown interest in Vrikshamla. Many studies have shown that intake of HCA present in Kokam reduces appetite, inhibits lipogenesis and reduces body weight.

Assessment Criteria

Clinical Gradings (Subjective Parameters)

In the present clinical study all the cases of Sthaulya (obesity) will be assessed with the specific subjective and objective parameters at a regular interval of 15 days.

All the above symptomatic assessment will be done by using Symptom Rating Scale as following:

Symptoms	Score
Absent	0
Mild (Irregular)	1
Mild (Regular)	2
Moderate	3
Severe	4

Assessment of Subjective Parameters

Assessment of Kshudha aadhikya (Excessive hunger)

0 - becomes hungry after about 6hrs

1 - becomes hungry after about 4-5 hrs

2 - becomes hungry after about 3hrs

3 - becomes hungry after about 2-3hrs

4 - becomes hungry after about 2hrs

Assessment of Pipasa aadhikya (Excessive thirst)

0 - Drinks about 8-10 glass of water daily

1 - Drinks about 10-15 glass of water daily

2 - Drinks about 15-20 glass of water daily

3 - Drinks about 20-25 glass of water daily

4 - Unable to have a sound sleep for his thirst

▪ **Assessment of Kshudra shwasa (Breathlessness)**

0 - No shortness of breath

1 - Mild dyspnoea after physical exertion relieved on rest

2 - Moderate dyspnoea after physical exertion

3 - Dyspnoea even after daily routine

4 - Breathless even at rest

▪ **Assessment of Swedaadhikya (Excessive sweating)**

0 - Normal perspiration

1 - Mild perspiration after doing exertion

2 - Increased perspiration after doing little exertion

3 - Profuse perspiration after doing little exertion

4 - Perspiration without exertion

▪ **Assessment of Atinidra (Excessive sleep)**

0 - 6-8 hrs/day sleep

1 - 8-10hrs/day sleep

2 - 10-12 hrs/day sleep

3 - 12-14 hrs/day sleep

4 - >14 hrs/day sleep

▪ **Assessment of Daurbalya (General debility)**

0 - Feeling of well being

1 - Tired after doing strenuous physical activity

2 - Tired after doing moderate physical activity but can do daily activity

3 - Perform daily activity with difficulty

4 - Extremely tired to carry out daily routine activity

▪ **Assessment of Gaurava (Heaviness of the body)**

0 - No feeling of heaviness.

1 - Occasional feeling of heaviness.

2 - Continuous feeling of heaviness, but patient does usual work.

3 - Continuous feeling of heaviness which hampers usual work.

4 - Unable to do any work due to heaviness.

DISCUSSION

Probable mode of action of drug

In Ayurveda the action of drug is determined on pharmacodynamic factors as Rasa-Guna-Veerya and Vipaka along with certain specific properties called as prabhava (Karma) *Vrikshamla (Extract)*: The extract (water based) of Vrikshamla fruits has Amla, Katu and Madhura Rasa. It also has Laghu and Ushna Guna with predominance of Vayu and Agni Mahabhuta. The Deepana, Pachana and Kapha-Medohara properties of Vrikshamla are also mentioned in Ayurvedic literature. Due to its Laghu and Ushna Guna it digest the Amasanchaya and clears the Srotorodha. It contains mainly Amla Rasa which has the property of Agnideepana also predominance of Vayu and Agni Mahabhuta makes it Laghu Dravya having inherent tendency of Agnisamdhukshana (Ch.Su.-5/6). So on the basis of these factors it is quite acceptable that Vrikshamla digest the Amasanchaya, clears the Srotorodha and improves the status of Jatharagni and Dhatvagni. Moreover modern science has also shown interest in Vrikshamla. Many studies have shown that intake of HCA present in Kokam reduces appetite, inhibits lipogenesis and reduces body weight.

CONCLUSION

The present review on Anti Obesity drug Vrikshamla mentioned in Bhavaprakasha Nighantu. The management of Sthaulya/Metabolic syndrome in conventional system of medicine is still not satisfactory and warranting newer strategies from other resources, it seems to explore an Ayurveda inspired line of management for treating Sthaulya (Obesity) or Metabolic syndrome and preventing its life threatening complications in the present clinical work *Vrikshamla (garcinia combogia)* is selected as trail drug for treatment of *Sthaulya (Obesity)* because of its *Medohara (Reduce fat)* cardio protective, Anti

Oxidant and lipid per oxidation, in habitation properties.

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