



Review Article

CONCEPTUAL STUDY OF ADIPOSOPATHY WITH REFERENCE OF *LANGHANA UPAKRAMA* FOR HEALTHY LIFE

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ABSTRACT

Lifestyle in modern era delivers a lot of stress and due to extreme use of *Guru* (heavy), *Madhura* (sweet), *Snigdha* (oily), *Shita* (cold) *Ahar* and *Vihar* like *Alashya* (stationary), *Adhyasana* (taking another food before undigested food), *Vishamashan* (different timing of food) etc, people get suffer with a disease like excessive body fat or sick fat or adiposopathy. Adiposopathy leads to several metabolic diseases. *Langhana upakrama* (fasting) will be an effective treatment in adiposopathy. Several studies by researchers, assembled to check anatomical and pathophysiological abnormalities of adiposopathy and review of different aspects of *Langhana upakrama* in *Samhita* in perspective of metabolic disorders especially due to adiposopathy. Data study shows that on positive energy intake, accumulated subcutaneous adipose tissue, visceral adipose tissue and other fat depots can be pathogenic. This pathogenic adipose tissue causes many metabolic diseases like obesity, type 2 diabetes, hypertension, hypothyroidism, liver diseases etc. By the studies of different *Samhita* we can articulate that *Langhana upakrama* is able to bring lightness and thinness to body. Finally we can conclude that by the *Langhana upakrama* body uses all types of sick fat from all fat depots and it can reverse the process of adiposopathy and body becomes healthy.

KEYWORDS: Adiposopathy, Sick fat, Obesity, *Langhana*, *Upakrama*, Fasting, *Upavasa*.

INTRODUCTION

Adiposopathy is called as pathological fat tissue with anatomical and functional abnormalities due to positive energy balance, in genetically and environmentally vulnerable individuals. Being overweight or obese is a worldwide epidemic^[1]. on the basis of anatomical and pathophysiological abnormalities of fat, there are two type of obesities, first one is metabolic healthy obesity (i.e., fat deposit as subcutaneous adipose tissue SAT) with normal metabolic level and other is metabolic obesity with normal weight with high risk of metabolic disorders (i.e., fat depots as visceral adipose tissue VAT, triglycerides, free fatty acid)^[2]. Worldwide Body mass Index (BMI) is a marker that is using to measure overweight or obesity. High BMI means highly obese^[3]. In positive energy intake, storage of energy in adipose tissue that causes adipocyte hypertrophy and increase in visceral adipose tissue. This pathogenic adipocyte hypertrophy and visceral adiposity causes adipogenesis, fat storage, free fatty acid metabolism, adipocyte factors and inflammation. Finally that produces metabolic disease like type 2 diabetes, dyslipidemia etc^[4]. Obesity leads to high basic metabolic rate that may cause diabetes mellitus, dyslipidemia and

hypertension^[5]. Excessive fat gain can also cause atherosclerotic cardiovascular diseases. While treating obese patients; we should use term anti-adiposopathy instead of anti-obesity treatment^[6]. Due to positive energy flow, excessive deposition of adipocyte in liver, muscle and in visceral organ that fat cells excretes more adipocytokine that causes insulin resistance, dyslipidemia, inflammation and hypertension^[7]. In case of abdominal obesity, non-esterified fatty acids (NEFAs) level increases and this may cause high vasoconstriction and arterial stiffness that denotes elevation in blood pressure^[8]. Adiposopathy is an endocrine disease^[9].

In Ayurveda obesity is called as *Sthoulya*. This is *Santarpanothya janya vyadhi*^[10]. *Sthoulya* means excessive accumulation of *Meda* (fat) in body especially in buttock (*Sphik*), breast (*Stana*) and abdomen (*Udar*). In *Sthoulya prabhut shleshma* is involved as pathology. *Langhana upakrama* is best treatment in *Santarpanothya vyadhi*^[11]. According to Ayurveda *Langhanam paramaushadham*. Means *Langhana upakrama* is ultimate medicine to cure all diseases. *Langhana Upakrama* especially *Upavas* is similar to *Kshudhanigrah* which is one of the 10 types of *Langhan chikitsa* in Ayurveda^[12]. *Langhana*

upakrama is a best treatment for healthy life, it preserves, repair and endorse good health. It is natural and amazing way of life^[13]. Fasting is a corrective as well as preventive method for body. Fasting depends on body type which includes *Vayu*, *Agni*, *Kala* and *Dosha* of an individual.

AIM AND OBJECTIVES

1. Concept of Adiposopathy
2. Detail study of *Langhana upakrama* and its effects on Adiposopathy.

MATERIALS AND METHODS

1. Ayurveda texts like *Briahtrayi* and *Laghutrayi* have been used to study for *Langhana chikitsa*.
2. Different articles on adiposopathy.
3. Available related Sources on Websites and internet.

Adiposopathy

The term adiposopathy can be translated as sick fat. These terms emphasize that adipose tissue has as much pathogenic potential to result in ill health as the pathologic dysfunction of other body tissues. Thus, adiposopathy represents a disease similar to other organopathies. Adiposopathy is the simplest explanation as to why and how increased body fat leads to metabolic disease and increased CVD risk^[9].

Anatomically fat is stored in three forms or places as subcutaneous adipose tissue (SAT), visceral adiposity (VAT) and ectopic or fat deposition (i.e., triglyceride, free fatty acid). In positive energy balance adipocyte hypertrophy do recruitment, proliferation, and differentiation of additional adipocytes for proper storage of energy/fat to maintain normal tissue functions, but excessive fat cell enlargement causes impaired adipogenesis and derangement of adipocytes then adipose tissue metabolic and immune response activates that finally cause metabolic diseases. Similarly visceral adipose tissue accumulation also causes metabolic diseases. Both adipocyte hypertrophies in SAT & VAT adiposity may have pathogenic anatomical abnormalities and causes metabolic diseases. Pathogenic anatomical abnormalities in SAT and VAT is depending on genetic and surrounding metabolic environment (high diabetic ratio area). In Both SAT and VAT induced Pathophysiological metabolic and immune response increases the level of free fatty acid, leptin, pro-inflammatory factor and decreases anti-inflammatory that causes Type 2 Diabetes mellitus & dyslipidemia and high risk of atherosclerotic coronary heart disease (CHD). Hypercortisolaemia may reduce size of adipocytes in SAT and when joint with glucocorticoid, it induces increase in appetite, hepatic gluconeogenesis and Insulin resistance that

results as metabolic and inflammatory response and finally hyperglycemia^[9].

During positive caloric balance, adipocytes are unable to store excess energy (generally in the form of triglycerides), then circulating free fatty acids are increased, causing pathologic disturbance of non-adipose tissue organs, such as the liver, muscles, pancreas, and blood vessels. Potential adverse metabolic consequences of lipotoxicity include abnormalities of glucose and lipid metabolism and high blood pressure. Although VAT is most recognized as a contributor to metabolic disease, the bulk of circulating free fatty acids actually originates from SAT, mainly because SAT is the largest fat depot, 80% of total body fat. Even within large vessel drainage of VAT (20% of body fat), the majority of free fatty acids in the portal system may originate within SAT, which may contribute to lipotoxic effects on the liver, with adverse clinical consequences such as hyperglycemia and dyslipidemia. VAT is generally considered among the most pathogenic fat depots, but if SAT fat storage is impaired during positive caloric balance and if SAT net free fatty acid release is increased into the circulation, then this SAT dysfunction may adversely affect non-hepatic organs, resulting in lipotoxicity to muscle (causing insulin resistance) and the pancreas (possibly reducing insulin secretion)^[14].

Concept of *Langhan upakrama*

Yet Kinchit laghava karam Dehe Tallanghanam Smruta | (Charaka Samhita Sutrasthana 22/9)

The treatment which is able to bring lightness and thinness to the body is called *Langhana* treatment. It is also called as denourishing treatment. *Ashtanga Hridayakara* has defined *Langhana* as *langhanam laghavaya yat dehasya*. The meaning of the above quotation is as follows. The *Upakarma* which lightens the body is *Langhana*. Hemadri has added one more *Lakshana* to the definition of *Langhana* that is *Karshyata* and defines it as the procedure by which body becomes light and emaciated. The definition of *Langhana* is mentioned in the *Shabdakalpadruma* carries a slight different meaning that is, "*ye guna langhana praktaste guna laghurbhojane iti vaidyakam*". Means in medical science *Langhana* is considered as a light meal gives only two Meanings i.e., moment and fasting. Ayurveda demonstrates fasting as *Upavasa*. Fasting can be characterized as consciously get restricted from all the four types of food which include chewing food, licking of any food, gulping and drinking^[15].

Principle of Fasting

The vitiated *Dosha* in human body, slow down the digestive fire and became main reason for the production of *Aama* (metabolic poisons), which is the

main source of all illnesses. This *Aam* also block of all channels of the body and are responsible for different sicknesses. Fasting ignites the digestive fire, clears all blockages in the channels of the body and destroys many metabolic toxins. In this way it helps to fight against illness. Ayurveda advise regular and short duration fasting. The sticky poisonous waste gets collect in our digestive tract and then pass through channels, reaches to tissues of our body and hampered cellular nutrition and formed disease. Thus, imbalanced *Agni* and gathering of *Ama* is the root of majority of the illness. Fasting explained in Ayurveda help to keep a lid on this build-up of toxins. It is confirmed in Ayurveda that "*Aho ratri bhोजना abhavaha*", which means 'absence of food at night' can also be considered as one type of fasting and because of this, the body of an individual purifies itself by removing the toxin wastes the next day^[16].

Characteristic Features of Langhan Chikitsa

Laghu Ushna Teekshna Vishadam Rukshma Sukshma Kharam Saram |

Katheenam Ch Aevam Yatt Dravyam Prayaha Tat Langhanm Smrutam || (*Charaka Samhita Sutrasthana 22/12*)

Light (*Laghu*) means the *Dravya* must be light in weight, Hot (*Ushna*) is mainly hot quality substance, Sharp (*Teekshna*) means remove toxin material from the body and enter in minutest body channels, Non-slimy (*Vishada*) is a quality help to remove adhesiveness and clear all the body channels, dry (*Rooksha*) brings lightness to the body, Minute (*Sookshma*) means enter in minutest body channels, Rough (*Khara*), hardness (*Katina*), mobility (*Sara*) This all properties help to remove the toxic material and clear all the body channels.

Indications of Langhana: 1) Diseases where heaviness takes place. Example:- diabetes, cough, obesity, fever and in indigestion. 2) Diseases where obstruction of channels takes place. Example:- asthma, hyperlipidaemia, coronary artery disease, constipation.

Sign of Appropriate Langhana Chikitsa

Vat Mutra Pureeshanam Visarge Gatra Laghave |

Hrudaya Udgara Kanthassya Shudhhau Tandra Klame Gate ||

Swede Jate Ruchau Chaiv Kshut Pipas Sah Udaye |

Krutanam Langhanam Aadeshyam Nivayathe ch Antaratmanee|| (*Charaka Samhita Sutrasthana 22/34, 35*)

When proper *Langhan* has done then body has feeling of lightness and purity in heart, proper emission of flatus, urine and farces, purity in eructation and clarity in throat, Feeling of fresh,

remove dullness and drowsiness, and Appearance of sweat and appreciation of taste^[17].

Benefits of Langhana: Improves the metabolism and digestive power, removes the blockage from *Strotas* and tissues, remove *Ama* (toxin) from the body, brings lightness and feel healthy.

CONCLUSION

Rogah sarve api mandeh aagnou sutaram udaradi tu (*A.H.Ni 12/1*)

Most of the diseases arise from the *Vikruti* of *Agni*, which especially "*Rogasarveapi mandagnou*". Due to *Mandagni*, the ingested food does not get digest properly and becomes *Apakwa* and that lead to the formation of *Ama*, which is the fundamental factor for the appearance of several disorders. Being overweight or obese is a worldwide epidemic. Adiposity may also cause adipocyte and adipose tissue anatomic and functional abnormalities, termed as adiposopathy (adipose-opathy) or "sick fat." Because, the gastric fire/*Jatharagni* regulates all *Dhatvagni* (metabolism), this "sick fat" or *Dushit medo dhatu* also arises due to distorted digestive fire. During *Langhana* (complete fasting/Light diet), food is not available for digestion; the *Agni* metabolize the *Ama* and *Sama doshas* ('sick fat') and resulting in *Agnideepana* and *Amapachana*. Among three *Doshas*; Vitiated *Kapha dosha* is responsible for *Strotasavarodha* (blockings in body channels) due to its guru (heavy), *Abhishyandi* (Channel obstruction) and *Picchila* (Sticky) *Guna* (properties), which resembles to the properties of *Ama*, therefore *Ama* is also responsible for *Strotasavarodha*. In *Langhana* there is absence of food or light diet increases *Laghuta* (lightness) in body and it reduces the *Ama* and Vitiated *Kapha* and helps to destroy the blockings in body channels. During *Langhan* (fasting), due to increased *Agnideepana* and *Aapacham* properties the body can obtain energy through the release of free fatty acids from the triglycerides in fat cells. Utilization of free fatty acid from blood reduces free fatty acid level that result as reduction of *Shrotavarodha* and *Guruta*. Finally the body becomes *Laghu* and healthy.

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Cite this article as:

Akhilesh Kumar Singh, Poonam Patel. Conceptual Study of Adiposopathy With Reference of Langhan Upakrama For Healthy Life. International Journal of Ayurveda and Pharma Research. 2020;8(11):73-76.

Source of support: Nil, Conflict of interest: None Declared

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