

## DIET AND LIFE STYLE INTERVENTION FOR METABOLIC DISORDERS IN AYURVEDA: A REVIEW

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Article Received on  
20 May 2018,

Revised on 11 June 2018,  
Accepted on 02 July 2018,

DOI: 10.20959/wjpr201814-12887

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### ABSTRACT

Due to fast changing life style and increased consumption of high fat diets, junk food and decreased physical activities, especially engineered out exercise from daily life both in the work place and leisure have contributed in rising burden of cluster of risk factors of the heart attack and other cardiovascular events and diabetes are known as metabolic syndrome. A quarter of the world's People have metabolic syndrome and prone to greater risk of developing type 2 diabetes. As Prameha, Sthaulya, Hridroga primarily Amabahula and Santarpanjanya Vyadhi, Langhana is basic Chikitsa (treatment protocol) for it. **Aim & Objective:** There is no permanent cure for metabolic syndrome in modern medical science till date and drugs used in modern science to treat metabolic syndrome have several adverse effects like nausea; bowel upset etc. and leads to liver, renal and cardiac damage. So, it is a

need of time to find out safe and cost effective treatment for metabolic syndrome from *Ayurveda*. **Result and discussion:** Along with the regular streak of management of the disease with which the patient is presenting the diet, drug and life style changes should be added in the prescription to get the ultimate result in treatment. Lifestyle modifications, such as increases in the daily physical activity and changes in diet are initial step in the management of metabolic disorders.

**KEYWORDS:** Ayurveda, Diet, Lifestyle intervention, metabolic disorders, *Pathya*.

## INTRODUCTION

Metabolic syndrome is a multi-factorial disease, frequently associated with a cluster of pathologies including obesity, hyper-triglyceridemia, impaired glucose tolerance, and insulin resistance, all these conditions referred to as the metabolic syndrome (formerly known as syndrome X and insulin resistance syndrome). Metabolic syndrome is associated with the risk of developing cardiovascular disease and type 2 diabetes.<sup>[1,2]</sup> It is need a heightened awareness of the metabolic syndrome and a subsequent increase in clinical attention directed towards prevention, due to it leads with premature morbidity and mortality.<sup>[3]</sup>

According to Ayurved it can be taken under umbrella of Medovaha Sroto-Dusti. Ayurved treatment of metabolic syndrome depends on its various stages. The lifestyle and dietary regimen can be choice of treatment to prevent the ailments. Dhatu Samyata through Sama Agni is mandatory to maintain healthy state. Prana, Tejas and Ojas which are directly related with Vata, Pitta and Kapha depend on Agni. Purusha (Sharira) is related with Snehasara. Prana is also Snehabhuyistham means Prana depends on Sneha.<sup>[4]</sup> Meda is Dhatu which maintains Snehana at the level of Sharira as well as Manas. Sthaulya and Karshya also depend on Rasa Dhatu<sup>[5]</sup> or it can be stated that Sthaulya and Karshya depend on Sneha Ansha of Rasa Dhatu. Ayu, Varna, Bala, Swasthya, Utsaha, Upachaya and Prabha are related with Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra Dhatu respectively.<sup>[6]</sup> It is clear that Swasthya (healthy state) ultimately depends of proper formation of Meda Dhatu.

Ayurved Concept of metabolic syndrom is result of improper metabolism. In Ayurveda metabolism is considered the function of Agni.<sup>[7]</sup>

### Need and significance

There is not any effective and safe treatment for metabolic syndrome in Modern medical science. World is looking with hope for prevention and treatment of metabolic syndrome from Ayurveda. For prevention and treatment of metabolic syndrome, it is must to understand metabolic syndrome with Ayurved perceptive.

### AIMS AND OBJECTIVES

Review metabolic syndrome according to classics and modern era. Review and discuss effect of diet and life style modification in the treatment or prevention of metabolic disorders.

## MATERIAL AND METHODS

Ayurved classical literature, Modern medicine text books, relevant published research article and internet source related this topic has been used for present research work.

## DISCUSSION

Causes of metabolic syndromes includes sedentary lifestyle, oily, heavy food, excessive calory consumption and lack of exercise or physical exertion etc. mainly vitiate *Agni* especially *Medodhatvagni* is responsible. Above *Nidana* vitiate *Agni*, produce *Aam*, *Kapha* and *Meda* leads to disease, metabolic syndrome can be said *Santarpana Janya Vyadhi*. Obesity, diabetes mellitus and dyslipidemia are come under *Santarpanottha Vyadhi*. In Ayurveda above features have been mentioned as the result of *Medovaha Sroto Dushti*. So initial stage of metabolic syndrome can be compared with *Medovaha Sroto Dusti*. Further middle stage metabolic syndrome turns in to type 2 diabetes mellitus and coronary artery diseases and condition like *Sankara Vyadhi*. So with the gradual progress of the disease it becomes difficult conditions to treat. So it is better to treat this disease before it reaches to middle or later stage condition involving *Vyadhi Shankarya* and *Upadrva*. *Medovaha Sroto Dushti* is the initial stage of metabolic syndrome.

Dyslipidemia is condition related with *Kapha*, *Meda* and *Margavarana* (obstruction in the passage) but typically it refers to impediment in *Rakta Marga* rather than other channels within the body. *Rasa* and *Rakta* circulate collectively all over the body so it can be measured together.

Whenever *Sleshma*, *Meda*, *Rasa* and *Kleda* in *Prakritavastha*, *Sleshma* has the action of *Dharana*, *Bandha*, *Sthiratva*, *Snigdhatva*, and *Bala*. It can be co-related as cellular cholesterol. *Meda* is *Sampurna Shariragata Sleshma* (Triglyceride). *Sweda* has the *Karma* of *Kleda Vidhriti* and *Mutra* is having function of *Kleda Vahanam*. *Rasa* can be correlated as *Dhatu Poshana Snehansha-Ahararasa* (chylomicrons). Due to *Sneha Dushtikara Nidanas* which are *Guru*, *Sheeta*, *Snigdha*, *Ushna*, *Pichhila*, *Sandra*, *Madhura Ahara*, *Viruddha Ahara*, *Adhyashana*, *Diwaswapna*, *Asyasukha*, *Avyayama*, *Lolupatwa*, *Moha*, *Nidradhikya* and *Tamodhikya Vikrita-Avastha* of *Sneha* occurs (state of Dyslipidemia). There can be two type of *Samprapti* (1) *Kleda Janya* (2) *Ama Janya*. Because of vitiation of *Snigdha*, *Drava*, *Sandra*, *Madhura*, *Sara*, *Pichhila*, *Guru Guna Kleda Bahula Samprapti* like, *Nija Vrana*, *Medoroga*, *Kushtha*, *Prameha* results which may lead to *Margavarana* and it may involve *Tri Marma* (*Shira*, *Hridaya*, *Basti*).

The various *Udarka* (complication) of *Kapha Medo Margavarana* are as discussed here after. In the limbs it generates *Vatarakta* (ischemic limb disease). In the peripheral circulation atherosclerosis cause intermittent claudication and gangrene and can jeopardize limb viability. The same pathogenesis causes *Hridroga* (ischemic heart disease) when it involves the *Hridaya Marma*. Atherosclerosis of coronary artery commonly causes myocardial infarction and angina pectoris.

Dyslipidemia, obesity and diabetes is primarily *Amabahula* and *Santarpanajanya Vyadhi*, *Langhana* is *Chikitsa* (treatment protocol) for it. Among 10 type of *Langhana*<sup>[8]</sup> *Upavasa* (*Laghu Anna* or *Ek Kala Bhojana*) and *Pachana* are indicated . Other disorders like *Prameha*, *Sthaulya*, *Hridroga*, and other *Santarpanotha Vyadhi* indicated as *Pachaniya Langhana*.<sup>[9]</sup>

*Langhana* (*Laghu Anna* or *Ek Kala bhojana*) and *Pachana* with *Dhanyaka* and *Shunthi* are having qualities of *Ama* and *Dosha Pachana* and *Agni Vriddhi*<sup>[10]</sup>

*Langhana* is main treatment of *Santarpanajanya Vyadhi* which includes important treatment of metabolic conditions like Dyslipidemia. As mentioned in classics, *Langhana* is a treatment for *Amaja Vikara*, *Sleshma Vikara*, *Amashayagata Vyadhi* and *Rasapradoshaja Vikara* etc. *Eka Kala Bhojana* is considered as *Sukha Parinamakara*<sup>[11]</sup> Proper and easy digestion of food leads to proper nutrition of all *Dhatu* and ultimately production of *Prakrita Dhatu*. *Mudga Yusha* is *Kaphaghna*, *Dipana*, *Hridya* and *Pathya Ahara* for *Vrani* (wound healing).<sup>[12]</sup> Research suggests that *Mudga* is Anti atherosclerotic. it works to lower blood fat of the experimental hyperlipemia rabbit, thus relieve coronary arterial lesions, further experiment find that phytosterols in *Mudga* has similar structure as cholesterol, phytosterols compete with cholesterol to get, lipid enzyme, thus many cholesterol cannot be esterified reducing the absorption of cholesterol in the intestine, also *Mudga* bean can reduce the serum cholesterol.<sup>[13]</sup>

*Mudga* has *Kashaya* and *Swadu Rasa*, *Laghu*, *Sheeta*, *Ruksha* and *Vishada Guna*, *Katu Vipaki* and *Kaphapittaghna Karma*<sup>[14]</sup> *Laghu*, *Ruksha*, *Sheeta* and *Vishada Guna* of *Mudga* can reduce the *Kleda* in *Rasa*, *Rakta Dhatu* of individual.<sup>[15]</sup>

**Preventive measures**

Various strategies have been proposed to prevent the development of metabolic syndrome. These include increased physical activity (such as walking 30 minutes every day)<sup>[16]</sup>, and a healthy, reduced calorie diet.<sup>[17]</sup>

**Initial stage *Pathyapathya***

Patients are advised to do Nidana Parivarjana and Pathya Palana as mentioned for Santarpanoth Vyadhis in Ayurvedic classics. Nidana Parivarjana: Like Heavy, oily foods, milk and dairy products, sweets, butter, Ghee, cheese, Paneer, red meat, cold drinks, refined carbohydrate, hydrogenated oil, smoking, excess alcohol intake, sedentary life, stress life etc. Pathya Palana: Diet like light and dry food substances, eat old rice, Chapatti, Mudga, Kullatha, Kodrava, horse gram, green gram, green leafy vegetable and salads, dried beans, peas, pulses, old honey, Takra, drinking warm water before meals, daily active exercise.

Daily exercise, Jirne Bhojana (to take food after complete digestion of previous food), Maximum use of Yava (Barely) and Purana Godhuma (Old Wheat) for food preparation.

Apathya Ahara: High calorie diet, like fast foods, Fatty, heavy and oily food substances, Excessive and daily use of meat, Excessive use of milk/dairy products like curd, paneer, ghee, sweets, Excessive alcohol consumption Vihara, Lack of exercise, Day time sleep, Adhyasana, Vishamashana.<sup>[18]</sup>

**Probable mode of action of *Langhana***

*Langhana* as *Upavasa* is useful in conditions resulting due to *Agnimandya* or *Ama* as it starts purification from *Amashaya*. The *Pachaka* as well as *Ranjaka Pitta* are stimulated due to it, which helps to digest *Ama*. Thus stimulated *Agni* helps in digesting abnormally increased properties of *Prithvi* and *Jala Mahabhuta*. Due to *Kapha-Meda-Mutrakara Ahara* and *Vihara*, it leads to disturb *Sleshma* as well as *Ashraashrayi Sharira Bhava* (*Rasa, Mamsa, Meda, Majja, Shukra, Mutra*) in quantitatively and qualitatively (*Dravyatah* and *Gunatah*). *Sleshma* is having *Guru, Sheeta, Mrudu, Snigdha, Sthira* and *Pichhila Guna*. *Langhana* is treatment with exactly opposite *Guna* viz., *Laghu, Ushna, Tikshna, Ruksha, Sara* and *Vishada*. *Mudga Yusha* is *Dipana, Hridya* as well as reduces *Sama Kapha* in *Srotasa*.

**Use of Dhanyaka**

*Aruchi, Apakti, Nishthiva, Malasanga, Anila Mudhata* are mainly due to *Ama* and *Balabhransha*, *Gaurava, Alasya* and *Klama* are mainly due to *Kleda*. *Dhanyaka* is having function of *Mutrala* as *Kleda Nirharana* through *Basti* and *Shunthi* is having functions of *Ama Pachana* which remove obstruction due to *Kapha* and *Vata* (*Kaphavata Vibandhanuta*).

**CONCLUSION**

Metabolic Syndrome is a *Santarpana Janya Vyadhi*. With help of Ayurveda by proper diet and life style changes is better option to prevent and cure metabolic disorder. Also dietary management is safe and cost effective treatment for metabolic syndrome.

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