



# METABOLIC SYNDROME IN AYURVEDIC PERSPECTIVE

Dr. Tanya Chadha<sup>1</sup>, Dr. Shradha<sup>2</sup>, Dr. Pooja Rana<sup>3</sup>, Dr. Sanjay Kumar Singh<sup>4</sup>

<sup>1</sup>P.G. Scholar, Department of Rog Nidan Evum Vikriti Vigyan, Rishikul Campus, UAU.

<sup>2</sup>P.G. Scholar, Department of Rog Nidan Evum Vikriti Vigyan, Rishikul Campus, UAU.

<sup>3</sup>P.G. Scholar, Department of Rog Nidan Evum Vikriti Vigyan, Rishikul Campus, UAU.

<sup>4</sup>Professor, Department of Rog Nidan Evum Vikriti Vigyan, Rishikul Campus, UAU.

## ABSTRACT

Metabolic syndrome is a group of disorders, associated with several pathological and metabolic conditions that leads to risk of developing cardiovascular disease, Type 2 Diabetes Mellitus and other such life threatening conditions. In the present scenario, Metabolic Syndrome (MS) is spreading globally and thus the need of education and awareness regarding this condition is of utmost importance. It requires immediate clinical attention directed towards it's prevention because it has a strong association with premature morbidity and mortality. The Metabolic syndrome is common in adult populations all over the world and it's incidence is increasing rapidly in the Indian subcontinent. With trends such as urbanization, increasing obesity and sedentary lifestyle it is important to know it's complex etio-pathogenesis. According to *Ayurveda* it can be considered under *Santarpanjanya Vyadhi*. *Ayurved* has a vast scope in the management of metabolic syndrome. Integrative approach of modern medicine and *Ayurveda* is essential for this. For this to work we need to understand the concept of this condition under *Ayurveda*.

Keywords: Metabolic syndrome, *Santarpanjanya vyadhi*, *Sthaulya*, Obesity, *Medovridhi*

## INTRODUCTION

Metabolic syndrome is an emerging problem of today's time and a lot of attention has been given towards such problems in past few years. Metabolic syndrome, sometimes known by other names like insulin resistance syndrome or syndrome X, is a group of at least three out of the five following medical conditions, i.e. abdominal (central) obesity, elevated fasting plasma glucose, elevated blood pressure, high serum triglycerides and low high-density lipoprotein (HDL) levels. The pathogenesis of this condition is complex but central obesity seems to be a prime factor to develop metabolic syndrome. It is a major health hazard in the developed countries and gradually spreading in developing countries too, which leads to other hazardous complications such as Cardiovascular diseases, Type 2 Diabetes Mellitus, Polycystic Ovarian Disease, etc.

Metabolic Syndrome can be compared with *Santarpanjanya vyadhi* (Comprise of diseases due to over nutrition and defective tissue metabolism). Its main sign is central obesity so it can be correlated with *Medovridhi* or *Sthaulya*. For prevention and treatment of metabolic syndrome, it is important to understand metabolic syndrome from the perspective of *Ayurveda*. So this research article has been prepared to enlighten the topic of metabolic syndrome in *Ayurveda*, so that further preventive and curative measures can be taken.

## MATERIAL AND METHODS:

Ayurvedic classics, Modern medicine text books, relevant published research articles and internet sources related to this topic has been used for present research work.

### Cause

The syndrome is thought to be caused by an underlying disorder of energy utilization and storage. The imbalance between intake and expenditure causes accumulation of extra calories.

The unhealthy and high caloric diet along with sedentary life style causes central obesity which increases the risk of insulin resistance by the release of abundant free fatty acids in the circulation which occupies insulin receptors and cause a pre diabetic state or hyperglycemic state which in turn leads to metabolic syndrome. If this state is ignored, condition of metabolic syndrome emerges. Over a period of time if not cured this condition may transform in to other major complications.

### Diagnostic criteria:

The US National Cholesterol Education Program Adult Treatment Panel III (2001) suggested presence of at least three of the following five conditions for the diagnosis of metabolic syndrome:

- Central obesity: waist circumference  $\geq 102$  cm or 40 inches (male),  $\geq 88$  cm or 35 inches (female)
- Dyslipidemia: TG  $\geq 1.7$  mmol/L (150 mg/dl)
- Dyslipidemia: HDL-C  $< 40$  mg/dL (male),  $< 50$  mg/dL (female)
- Blood pressure  $\geq 130/85$  mmHg
- Fasting plasma glucose  $\geq 6.1$  mmol/L (110 mg/dl)

### Ayurvedic perspective

*Sthaulya* is mentioned as a *Santarpanajanya vyadhi* in *Ayurveda* which reflects *Nidan* similar to present time. For the diagnosis of Metabolic Syndrome, obesity is the most important condition. The causative factors of the disease are similar in both metabolic syndrome and *Medoroga* i.e., *Atisampurana* (Excessive intake of diet specially *Madhur, Sheet, Snigdha Ahara*), *Avyayam* (less physical work), *Diwaswapna* (sleeping at day time), *Harsha*, *Achintana* (lack of mental activity), *Beeja Dosha* (Genetic /Hereditary factor).

*Acharya Sushruta* has mentioned that the state of *Sthaulya* and *Karshya* depends on *Rasa*. *Rasa* does *Tarpana* i.e. gives nourishment to the body. Consumption of diet dominant in *Madhura, Amla, Lavana Rasa* which cause *Kapha Prakopa* leads to the condition of *Sthaulya*.

High calorie diet and sedentary life style have been considered as the primary etiological factors for obesity and Metabolic Syndrome. This causes an imbalance between intake of calories and its expenditure, thus causing accumulation of extra calories in the form of fat. Role of genetic factor in causing obesity and Metabolic Syndrome has been supported after discovery of OB gene which codes for leptin protein which maintains the use of energy in body and suppresses hunger. Leptin can also cause hypertension due to the activation of sympathetic nervous system.

Similarly pathogenesis of *Sthaulya* is given in *Ayurved* i.e. all the dietary, lifestyle and genetic factors causes *Kapha Prakopa* which leads to *Khavaigunya* in *Medovaha Srotasa* which ultimately results in *Jatharagni Mandya* and *Ama* production. *Ama* develops affinity towards *Meda Dhatwagni Mandya* and *Apakva Meda Dhatu* formation in excessive quantity which causes *Medovaha Srotodushti* and malnourishment of other *Dhatu*. Clinical features of *Medo Roga* and obesity are also similar. Vitiated *Meda Dhatu* which is immobile in nature is stored as *Badha Meda* in various sites i.e. *Udara, Sphika, Stana, Gala, etc.*

The vitiated *Meda* which is in the form of *Abadha Meda* circulates in the body which can be understood as the condition of Dyslipidemia. This can be understood the cause for elevated Triglycerides and low HDL. Further vitiation of *Meda Dhatu* and increased *Abadha Meda* in circulation leads to condition of *Hridaya Roga* indicating the condition of cardiovascular diseases like Artherosclerosis and other fatal conditions. This also contributes in pathogenesis of Hypertension.

If *Medovaha Strotas* is vitiated, it causes *Meda Dhatu Dushti* which is expressed as *Prameha Poorvaropa* along with *Sthaulya* which indicates the pre diabetic stage with obesity. In this condition if further *Nidan Sevana* is continued it leads to manifestation of *Prameha*. All the dietary and lifestyle factors causes *Kapha Prakopa* and leads to the condition of *Bahudrava Sleshama* which has been stated by *Acharya Charak* as causative factor for developing *Prameha*. Also in the *Samprapti* of *Prameha Meda* is said as *Pradhan Dushya*. So all these conditions leads to the development of Diabetes Mellitus.

The concept of Metabolic Syndrome also resembles to the condition of *Vyadhisankar* in *Ayurveda* because of presence of many diseases together.

## Discussion

In today's era, the condition Metabolic Syndrome is becoming common from young aged to middle aged people and is turning as a fatal condition causing risk of life due to development of cardiovascular diseases and other such conditions. *Ayurveda*, a traditional system of medicine considers Metabolic Syndrome as a result of an imbalance in *Doshas* and impaired digestion.

The main factor found in it is obesity and similarly in *Ayurveda* also the condition of *Atisthula* is said to be most dangerous. *Acharya Charak* has mentioned that among eight *Nindaniya Purush*, *Atisthul* is said to be most fatal. Other conditions associated with obesity i.e. Diabetes, Dyslipidemia and Hypertension also leads to the development of many serious diseases. So this justifies that this condition is a spreading hazard for today's generation. In later stages of metabolic syndrome leads to complication of specific diseases like acute pancreatitis, Coronary Artery Disease due to hyper triglyceridemia, Diabetic retinopathy, neuropathy, nephropathy etc. due to diabetes mellitus and cerebral hemorrhage, hypertensive cardio-myopathy, hyper tensive retino and nephro pathy due to hypertension.

## Conclusion

Metabolic syndrome is a group of interconnected physiological, biochemical, clinical and metabolic factors that directly increase the risk of CVD and Type 2 Diabetes Mellitus. The whole story of Metabolic Syndrome revolves around obesity and in today's clinical practice large number of patients are suffering from this condition. So a better understanding of this condition from the perspective of *Ayurveda* is important for it's management.

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