

Premetabolic Syndrome is a Major Cardiovascular Disease Risk in Indian Population

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The metabolic syndrome (MS) is characterized by several cardiovascular (CV) risk factors and is associated with an increased incidence of diabetes, CV events and mortality. The prevalence of MS is increasing in epidemic proportions worldwide, but presently it is most common in India. MS is characterized by the presence of abdominal obesity, high fasting glucose, atherogenic dyslipidemia and high blood pressure.^[1] MS is related to other comorbidities including, prothrombotic state, proinflammatory state, non-alcoholic steatohepatitis and reproductive disorders. MS is also associated with increased risk of type 2 diabetes, CV disease and all-cause mortality. Furthermore, there is evidence that MS is an effective clinical tool to identify individual's predisposition to high risk of CV disease and type 2 diabetes. Prevalence of MS is increasing in epidemic proportions in both developed countries and developing countries. The worldwide prevalence of MS in the adult population is estimated between 20% and 25%. According to data from the National Health and Nutrition Examination Survey (NHANES) 2009–2010, about one-fifth of the adult population of the United States had high cardiometabolic risk, with the prevalence of MS (adjusted for age) being estimated at 22.9%.^[2] In Indian population, the prevalence of MS is more than 40% above the age of 40 years.^[3] Recently, the incidence of preobesity, prediabetes and prehypertension has increased enormously in the society and therefore the concept of the pre-metabolic syndrome (pre-MS) as a disease has emerged to adopt the plan to initiate the intervention early in the process of metabolic dysfunction to prevent the onset of full-blown metabolic diseases and the complications associated with them. Pre-MS is defined as having not less than two components of MS, but do not meet the criteria for the diagnosis of MS.^[4] India has rapidly emerged as the largest economy in the world. Due to rapid economic growth, the lifestyle of the general Indian population has changed considerably.^[5] Increased income of the family has made a larger section of the public in India rich compared to other Asian countries. There is rapid proliferation of hotel industries in all towns and cities. With access to varieties of food and having money to purchase and eat enough food, the country which was starving few decades before has now become the country of plenty. In addition

to this, the process of home deliveries of fast food items by different home-delivery companies, has made easy and instantaneous accessibility to all the variety of food items. Also, recently the purchase and use of two-wheelers and cars have increased in the community that has significantly resulted in reduction in physical activity. All these factors have contributed to the obesity and overweight, the conditions of excess adiposity.^[6] Due to faulty eating habit and lack of physical activities at workplace and at home, the general population has gained more body weight and many are pre-obese. Recently it has been observed that the state of overweight has many health problems, especially the future risks of developing metabolic diseases, particularly the CV problems.^[7] Especially, overweight people in Indian subcontinent are more prone to have CV risks. Therefore, range of Body Mass Index (BMI) for overweight Indians and Asians in general is currently much lower (BMI 23–27.5) compared to the population in western countries (BMI 25–29.9).^[8] The prevalence of diabetes, hypertension, heart disease and related complications such as stroke has been observed to be quite high and comparable to the prevalence that is seen in obesity, especially in Indian population.

The risks of developing insulin resistance, hyperlipidemia, prediabetes and prehypertension are exceedingly high in preobesity. The risk of developing heart failure goes up 11% for every one-point increase in BMI. It has been observed that decrease in body weight reduces the risk of developing heart failure in a wide variety of clinical spectrum. However, additional research is warranted to ascertain whether intentional weight reduction to optimal levels in overweight and obese individuals, together with improved physical activity, would lessen the probability of heart failure. The Framingham Heart Study suggests that men and women who are overweight without necessarily being obese can have a significant heart-failure risk and that “perhaps a BMI <25 kg/m² represents an optimal goal for the primary prevention of heart failure”. The CV risks have been reported to be comparable in both obesity and preobesity.^[9]

Due to increased work stress, the prevalence of Pre-MS has been found to be currently high among the health professionals.^[4] Particularly the doctors among the health professionals are more prone

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to develop Pre-MS due to heavy workload and the stress of patient management. Especially, the younger population in the country in the age range of 30 to 50 years are found to have insulin resistance, prediabetes, preobesity and prehypertension. The prevalence of Pre-MS in the society could be much more than the predicted. As CV disease risk is quite high in Pre-MS, it is time to have the policies and strategies to address the problem, especially adopting to its early detection and intervention.

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