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Editorial

Obesity and Metabolic Health

Obesity is defined as a state of abnormal or excessive accumulation of fat in the body that pose a great risk for health. Obesity is now a global health issue and is a major contributor of global epidemic of type 2 diabetes mellitus, fatty liver disease, and cardiovascular disease. Along with global increase, the prevalence of obesity is increasing gradually in Bangladesh. This may be due to lifestyle changes and changes in dietary habits, which need to be addressed adequately and where our physicians can play a vital role. In Bangladesh, 17% of adult population in urban areas are obese or overweight.[1] The age standardized frequency of overweight and obese at rural population in Bangladesh were 17.7% and 26.2% in 2013.[2] *Body mass index* (BMI), a measure of obesity, established by WHO in 1997 and updated in 2015 is calculated by weight of an individual in kilogram divided by height in square meter. BMI cut-off values are: 18.5-24.9 kg/m² as normal weight, 25.0-29.9 kg/m² as overweight and ≥30 kg/m² as obese are well accepted worldwide. Many of our physicians possibly are not aware of the lower cut-off points for BMI as recommended by WHO for Asian population, which is applicable to Bangladeshi population also. Asian cut-off points for BMI are: 18.5-22.9 kg/m² as normal weight, 23.0-27.4 kg/m² as overweight and ≥27.5 kg/m² as obese.[3-4] This means that Asian people having same BMI are at increased risk of developing cardiovascular and metabolic disorders compared to their European counterparts.

As the obesity and overweight have direct impact in the causation of cardiovascular diseases, type 2 diabetes mellitus, fatty liver disease, cerebrovascular disease and many types of malignancies and considering the huge health impact of obesity, American Medical Association recently recognized it as a separate disease entity.[5]

Obesity related disorder is mainly due to adipocyte dysfunction. Adipocytes produce a number of hormones and cytokines collectively called adipokines that is related to adipocyte dysfunction, resulting in the development of various disorders like type 2 diabetes mellitus, hypertension, atherosclerosis, and cardiovascular diseases. But recently, it was observed that a group of obese individuals have no cardiometabolic risk.

On the other hand, a subset of population with normal weight and BMI possesses high level of cardiometabolic risk. To solve the issue a new term "Metabolic obesity (MO)" came into being used, which is defined as individual with unhealthy metabolic profile irrespective of BMI. The basis of MO is the presence of components of metabolic syndrome (MetS). The definition of MetS required the presence of ≥3 of the following components: waist circumference (≥94 cm in men and ≥80 cm in women), plasma HDL-cholesterol level (<1.0 mmol/l in men and <1.3 mmol/l in women), elevated blood pressure (BP) (systolic BP ≥130 mmHg and/or diastolic BP ≥85 mmHg) or antihypertensive drug treatment or history of hypertension, elevated fasting plasma glucose ≥5.6 mmol/l or drug treatment.[6] Individual having ≥3 components abnormal is considered as metabolically unhealthy. There are other methods proposed by different researcher to define MetS and MO. Metabolic abnormalities which are usually associated with obesity, does not, however, affect all obese people and they are insulin sensitive, have normal BP, a favourable lipid profile, a lower proportion of visceral fat, less liver fat and a normal glucose tolerance. They are classified as "Metabolically healthy obese". On the other hand, a subset of normal weight individual suffers from metabolic disturbances characteristic of obesity.

So, we should use Asian cut-off values of BMI to find out the obese individual in our population. Otherwise, we will miss a number of obese persons and they will remain out of medical attention. Along with this, we have to assess the metabolic risk by the MetS criteria, which will identify all the people at risk of developing disease arising out of metabolic obesity and will be able to address the issue more accurately.

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