EDITORIAL

Abdominal Obesity

Obesity is closely associated with increased risk of several chronic diseases, including diabetes, heart disease, arthritis and some types of cancer. Body mass index (BMI) has long been used as an indicator of general body obesity, owing to its ease in measure and calculation (body weight in kg divided by the square of the height in meters). However, it has been demonstrated that body fat distribution, rather than generalised obesity, is a better predictor of morbidity and mortality. Body fat distribution is known to be affected by both genetics and environmental factors. The latter includes alcohol intake, cigarette smoking, physical activity, and timing of onset of childhood obesity.

A predominantly upper body fat distribution increases the risk for several metabolic abnormalities such as dyslipidaemia, hypertension, type 2 diabetes, as well as sleep apnea. Upper body fat is commonly associated with increased visceral fat. There is evidence that some of these metabolic abnormalities are linked to failure to normally suppress elevated free fatty acids (FFA) in response to insulin or meal ingestion. It is not known why visceral fat appears dysregulated in upper body obese persons, resulting in much more post-prandial FFA release than in persons with lower body obesity. Interestingly, weight loss via diet or exercise is able to improve the regulation of FFA whereas surgical removal of fat via liposuction does not. This is believed to be due to the enlarged abdominal or visceral fat cells (adipocytes) seen in upper body obesity, and diet/exercise is able to reduce fat cell size leading to better regulation of adipose tissue lipolysis

The strong link between upper body/visceral fat distribution and the metabolic complications of obesity has led to the increased use of waist circumference as an appropriate index of intra-abdominal fat. Initially, the ratio of waist circumference to hip circumference (WHR) was advocated by the World Health Organization, but it has been replaced by waist circumference, as the latter correlates closely with BMI and WHR. Recent large studies such as the NIH-AARP Diet and Health Study and the EPIC have also supported the use of waist circumference as a risk factor of mortality in adults, in addition to BMI.

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