MEDIBEATS
The Medical Bulletin

Guest Editorial

Dr. Bidita Khandelwal
General Physician
Gangtok

Association of Neck Circumference with Cardiovascular risk factors.

Cardiovascular diseases (CVD) are a major cause of mortality and morbidity and the cardiovascular (CV)) risk factors (DM, HTN, dyslipidemia and obesity) are a target for intervention. Association between various anthropometric parameters like Body Mass Index, Waist Circumference (WC), Waist Hip ratio (WHpR) and Waist Height ratio (WHtR) with increased cardio metabolic risk is well established. It's a well-known fact that regional deposition of fat especially in the upper body segment is a better predicator of obesity related complications. So, can Neck Circumference (NC) be representative of upper body adiposity and be a better predictor of CV risk?

NC is measured with a non- stretchable plastic tape with subject standing upright and looking straight. Measurement is done in centimeters at midpoint between the base of the neck and upper part of sternum; in males, it is done just below the laryngeal prominence. NC has the advantage of being a simple procedure with an economical readily available tool, has no diurnal variations and has good inter rater and intra rater variability. It predicts central obesity better than general obesity. The limitation of WC, WHpR and WHtR, like diurnal variation (pre/ postprandial), influence of respiration, difficulty in measuring during winters and in crowded places, socially unacceptable by certain sections of population and hindrance by abdominal belly in obese persons can all be overcome by NC.

The limitation is that it cannot be used in goiter, cervical lymphadenopathy, cervical spine abnormalities and Cushing's syndrome. Unavailability of age specific, gender specific and ethnic specific validated reference values is a challenge for establishing NC as a criterion for Metabolic Syndrome and as a predictor of CV risk.

Increased NC is also associated with obstructive sleep Apnea Syndrome and repeated hypoxia in it leads to endothelial dysfunction and increased CV risk. Systematic review and meta-analysis have proved that increased neck circumference is associated with Metabolic Syndrome as well as with increased CV risk. But further longitudinal studies are required in different geographical locations to establish the cut off values for different ethnic groups and gender. Additionally, whether reduction in NC, following weight loss or post bariatric surgery, can lead to cardio metabolic improvement, is an important aspect to be studied.