

Early clinical markers of metabolic syndrome among secondary school adolescents in Dar Es Salaam region 2019.

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ABSTRACT

Background Metabolic syndrome is one of the non-communicable disorders which have recently gained attention worldwide. This is due to its association with chronic diseases such as coronary artery disease, type 2 diabetes mellitus, cerebro-vascular disease and chronic kidney disease. Contrary to earlier thoughts, metabolic syndrome is no longer rare among children and adolescents due to the fact that the components that constitute this syndrome are increasingly reported in this population. Obesity and dyslipidemia seem to be the most common occurring components. Others include hypertension and hyperglycemia (impaired fasting blood glucose). Insulin resistance has remained the key underlying pathophysiology of the syndrome. Though pharmacologic agents are available to treat the different components of the syndrome, early detection of the components and timely preventive intervention is the only strategy that is less costly and more effective. Broad objective: To determine the prevalence of early clinical markers of metabolic syndrome among secondary school adolescents in Dar es Salaam.

Methods:

This is a descriptive cross-sectional study conducted among secondary schools in Dar es Salaam region. Special structured questionnaires were used to get demographic data. Blood pressure and anthropometric measurements (body weight, height and waist circumference) were taken by using standardized methods. Fasting blood samples were collected to measure blood glucose, total cholesterol, low density lipoprotein cholesterol, high density lipoprotein cholesterol and triglyceride. v For this study, the International Diabetes Federation (IDF) criteria were used to describe the early clinical markers of metabolic syndrome. Results: A sample of 217 adolescents (69 males and 148 females) was studied. Out of 217 participants; 162(74.7%) and 55(25.3%) were young (14-17 years) and elder (18-19 years) adolescents respectively. Participants from public and private schools were 104(47.9%) and 113(52.1%) respectively. Out of 217 study participants; 94 participants (43.3%) had at least one clinical marker for metabolic syndrome. The most prevalent clinical markers were central obesity (22.1%), dyslipidemia (low levels of high density lipoprotein (18%)) and impaired fasting blood glucose (hyperglycemia) (13%), while hypertension was the least prevalent clinical marker. The prevalence of metabolic syndrome was found to be 1.4%.

Conclusion:

Findings from this study provide evidence for the existence of early clinical markers of metabolic syndrome among adolescents in which central obesity, dyslipidemia and impaired fasting blood glucose (hyperglycemia) dominate with central obesity occurring significantly in young adolescents (10-17 years).

Recommendations:

It is strongly recommended that various measures against obesity and dyslipidemia should be taken early to rescue adolescents from these conditions. Such measures may include encouraging physical activity and healthy diet like unsaturated fats, soluble fibers, complex sugars, fruits and vegetables.
