Abstract

Aim: The definition of childhood metabolic syndrome has not been described clearly. Childhood obesity is increasing gradually, and the incidence of childhood metabolic syndrome is also rising. We aimed to show metabolic syndrome components and preventive factors for metabolic syndrome in obese children.

Methods: In the present study, 187 obese children and adolescents 5–18 years old were investigated retrospectively. Demographic data, anthropometric measurements, body mass index, blood pressure values, insulin levels, oral glucose tolerance test results, total cholesterol, high density lipoprotein, and triglyceride levels were obtained from hospital records. A body mass index > 95th percentile was considered obese. Insulin resistance was calculated according to the oral glucose tolerance test with 1.75 g/kg glucose maximum 75 g glucose. The insulin sensitivity index and homeostatic model assessment-insulin resistance (HOMA IR) were calculated and compared. Metabolic syndrome was diagnosed according to the modified WHO criteria adapted for metabolic syndrome in children.

Results: Abnormal glucose homeostasis was detected in 53% of subjects. Dyslipidaemia was present in 45.7% and hypertension in 16.6% of the patients. Metabolic syndrome was identified in 24.6% of obese children and adolescents. High HOMA-IR values and fasting glucose levels, elevated triglycerides and lower HDL levels were an indication of metabolic syndrome.

Conclusion: Obesity and insulin resistance are significant factors for the development of metabolic syndrome in children and adolescents. In obese children higher HDL levels are preventive factor for metabolic syndrome. Preventing obesity and insulin resistance may decrease the prevalence of metabolic syndrome.

Keywords

Childhood obesity, HDL levels, Insulin resistance, Metabolic syndrome.