

# Carotid Intima-media thickness in childhood and adolescent obesity relations to abdominal obesity, high triglyceride level and insulin resistance

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### **Abstract :**

**Aim:** To investigate risk factors which impact on common carotid artery intima media thickness (IMT).

**Methods:** A total of 86 obese children and adolescents and 22 healthy children and adolescents with normal weight were enrolled. Moreover, 23 of 86 obese children and adolescents were diagnosed with metabolic syndrome (MetS). The clinical, biochemical data and the IMT of the common carotid artery were measured in all subjects.

**Results:** Obese and obese with MetS subjects demonstrated a significantly ( $p < 0.01$ ) thicker intima media (0.69mm, 0.66mm) as compared to the control group (0.38mm), but there was no significant difference of IMT between obese and MetS group. IMT was correlated to body weight, body mass index, waist circumference, waist to hip ratio, systolic blood pressure, diastolic blood pressure, fasting insulin, homoeostasis model assessment-insulin resistance, triglyceride, high-density lipoprotein-cholesterol, low-density lipoprotein-cholesterol, alanine aminotransferase, aspartate aminotransferase and fatty liver. Waist circumference, waist to hip ratio, triglyceride and homoeostasis model assessment-insulin resistance were independent determinants of mean IMT level.

**Conclusion:** Obesity especially abdominal obesity, high TG and insulin resistance may be the main risk predictors of increased IMT.

### **Key Word :**

obesity, metabolic syndrome, intima-media thickness, children, adolescents

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