

ASSOCIATION OF FASTING TRIGLYCERIDES TO HIGH-DENSITY LIPOPROTEIN RATIO WITH RISK FOR METABOLIC SYNDROME IN CHILDREN

Maria Efthymia Katsa, Anastasios Ioannidis, Sofia Zyga, Athanasios Sachlas, Andrea Paola Rojas Gil



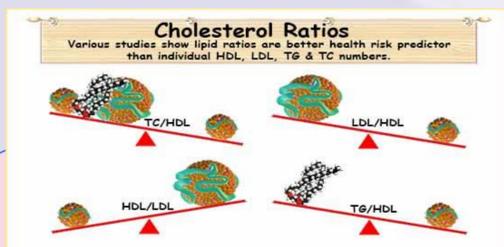
Atherosclerosis begins in childhood and progresses silently. Triglycerides/HDL ratio (TG/HDL) is a risk factor for cardiovascular diseases.

Aim:

To investigate TG/HDL as possible predictive factor for metabolic disorders in children.

Methods:

Descriptive correlation, with 110 children (6-12 years old) in Sparta, Greece. Anthropometric and biochemical analyzes were performed.

Results**Total Population**

17.27% of children were predisposed for MetSyn

- ❖ **ROC analysis** showed that the **TG/HDL** has a **high sensitivity** (73.7%) and **specificity** (68.1%) for diagnosing MetSyn **with 1 as a cutoff point**.
- ❖ For the total population, the relative probability that a child suffers from MetSyn with a **TG/HDL ≥ 1** is **almost six times greater than when a child has TG/HDL < 1** (OR=5.986; 95% CI=1.968–18.205).

- ❖ **TG/HDL** is **positively correlated** with **cholesterol** (p=0.006), **LDL** (p=0.001), **ALT/SGPT** (p=0.033), **γGT** (p<0.001) and the **cholesterol/LDL (CAD)** ratio (p<0.001).
- ❖ **Multivariate analysis** showed that children with **TG/HDL ≥ 1** had a 1.4 times greater odds for **increased levels of cholesterol** (OR=2.411; 95% CI=0.713–8.158), 2.6 times greater odds for **increased LDL** (OR=3.614; 95% CI=1.561–8.365), and 58.5% greater odds for **increased ALT/SGPT** (OR=1.585; 95% CI=0.215–11.698).

Children without predisposition for MetSyn

As the TG/HDL increases

- ❖ the body weight (p=0.035),
- ❖ uric acid levels (p=0.002),
- ❖ and CAD (p<0.001) also increase.

Children with predisposition for MetSyn

- ❖ Children with TG/HDL ≥ 1 had 3.5 times greater odds for increased value of uric acid (OR=4.519; 95% CI=0.393–51.988).
- ❖ Additionally, TG/HDL ratio is positively correlated with CAD (p<0.001).

**Conclusion**

- ❖ Atherosclerosis is associated with TG/HDL due to the high concentration of both triglycerides and very low density lipoprotein in plasma which leads to the production of small, dense LDL particles during the lipolysis.
- ❖ Previous studies report that the **TG/HDL > 4** in adults is a powerful predictive factor for the coronary disease.
- ❖ **The current study showed that children may be affected for metabolic disorders when TG/HDL > 1.**

