

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

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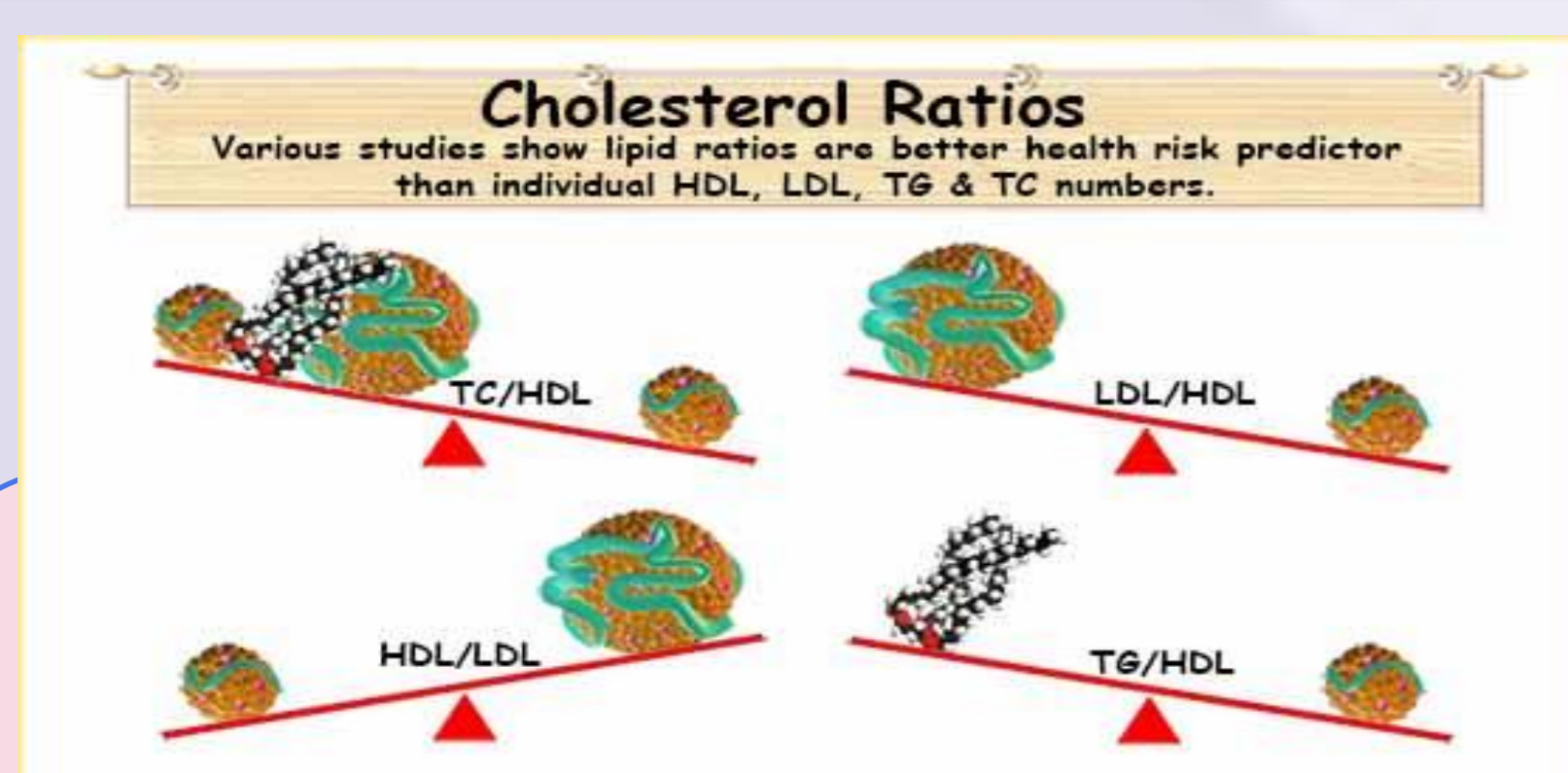
Atherosclerosis begins in childhood and progresses silently. Triglycerides/HDL ratio (TG/HDL) is a risk factor for cardiovascular diseases.

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).

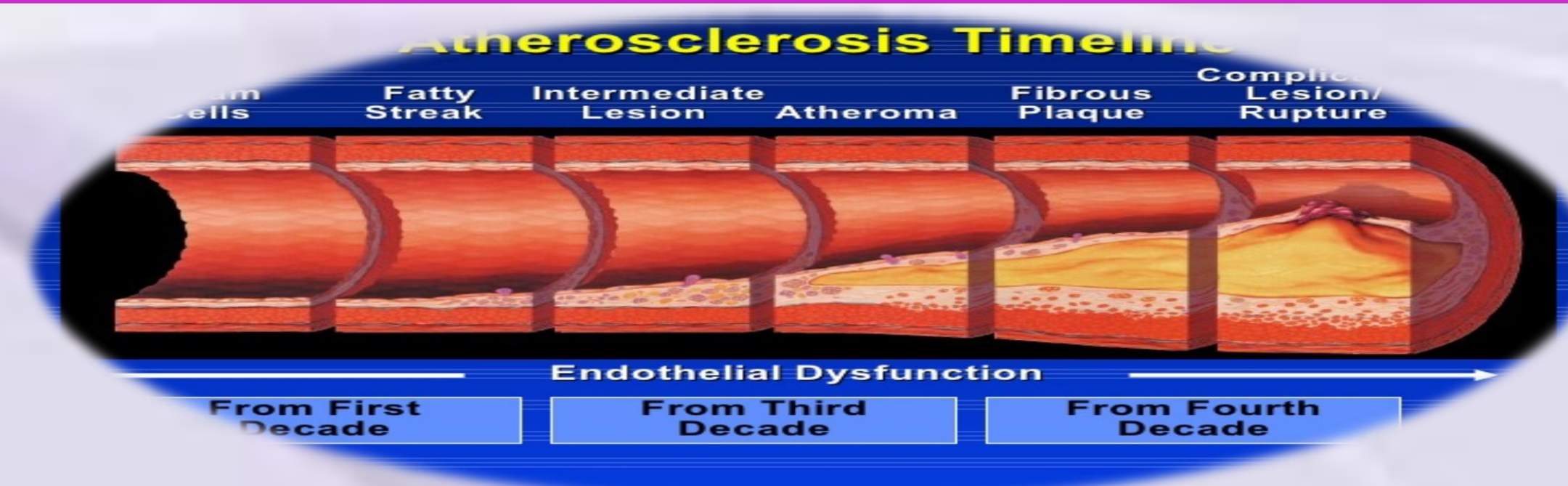
Children without predisposition for MetSyn

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.**

