IGF-II and lipid profile in pediatric obesity: a marker of cardio-metabolic risk?

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Background

IGF-II polymorphisms have been associated with BMI, lipid profile and blood pressure. *IGF-II* methylation status has been linked with lipid profile in obese children. No data are available on blood IGF-II concentrations in obese children.

Objective: to evaluate serum concentrations of IGF-II and determine their relationships with anthropometric, metabolic and body composition parameters in a cohort of obese children.

Methods

82 obese children (44 F/38 M, aged 12.08 ± 2.35 yrs) were studied. Anthropometric, biochemical and metabolic parameters and IGF-II (expressed as SDS) were assessed. Body composition was evaluated by dual X-ray absorptiometry (DXA) in 58 subjects. Results were compared with those obtained in 15 lean children (10F/5M, 10.95 ± 2.58 yrs)

Results

Obese children showed significantly higher IGF-II levels (-0.46±0.78 vs -1.17±0.58 SDS) than lean controls. IGF-II levels correlated with total cholesterol (r=0.27; p=0.016), LDL-cholesterol (r=0.25; p=0.025), and triglyceride levels (r=0.28; p=0.011), triglyceride/HDL ratio (r=0.25; p=0.028), and both AST (r=0.29; p=0.009) and ALT (r=0.30; p=0.006). No association between IGF-II levels and body composition parameters was found.

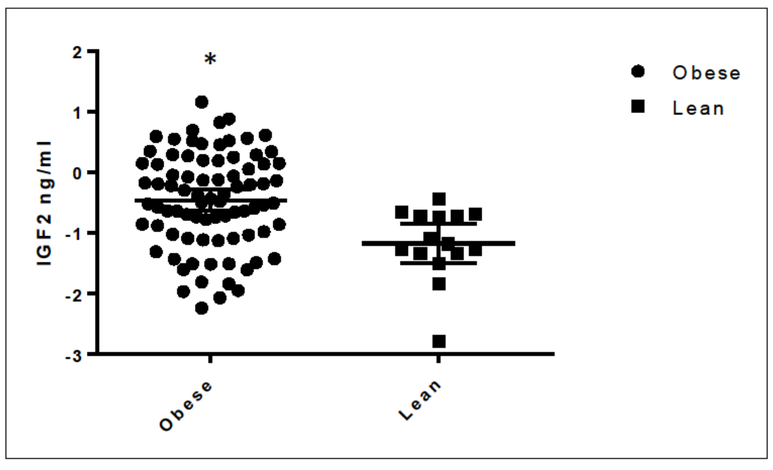

Figure 1. IGF-II levels in obese children vs lean children

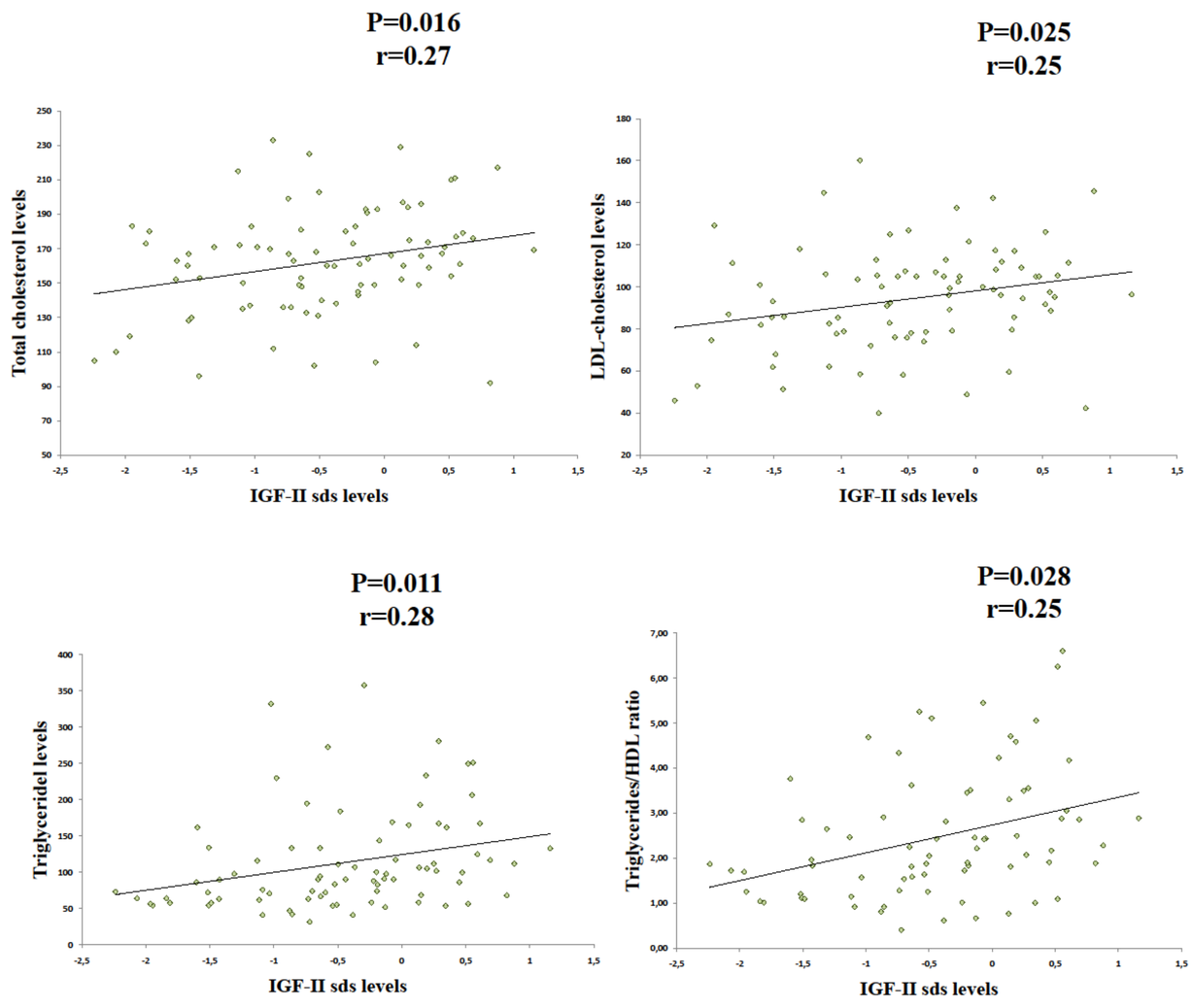

Figure 3 . Correlation between IGF-II levels in obese children and lipid profile

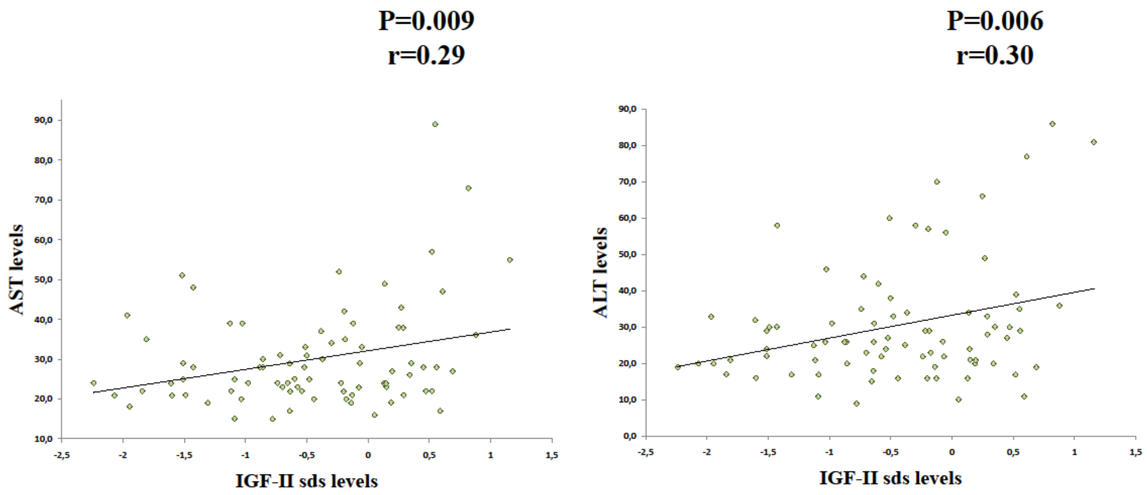

Figure 2. Correlation between IGF-II levels in obese children and transaminases levels

Conclusions

IGF-II serum concentrations are significantly higher in obese children and are associated with a worse lipid profile. IGF-II could be a biomarker of cardio-metabolic risk.

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