402

BONE MINERAL DENSITY IN OBESE CHILDREN

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Total body composition by dual energy X-ray absorptiometry (DEXA) can be used as an specific method of measuring body composition to identify the individual risk of metabolic complications in children.

Objective: To investigate serum leptin level and its relationship with bone mineral density in obese children.

Materials and methods: 91 children with obesity (male / female = 52/39, mean age 12,81 ± 0,5 years) were involved. DEXA was used to determine bone mineral density and body composition. BMI were average 95 percentile for age and sex. Serum leptin was measured using ELISA by "DRG Diagnostics" (USA). All the data were performed non-parametric (ANOVA, test of Mann-Whitney U) and parametric (t-Student criterion) methods.

Results: The mean BMI m/f (29,7 ± 0,68/28,3 ± 0,52 kg/m^2) (p = 0,05).

A significant gender differences were revealed in "total body" criteria, more pronounced in girls. Decrease of the mineral density by Z-score(-2,5 Standard Deviation) were found in 20% of boys and 22% of girls at puberty age. A correlation bone mineral density and lean mass were observed in prepubertal (r = 0,9) and early pubertal (r = 0,79) boys groups. This correlations wasn't noted in girls. Serum leptin level was positively correlated with mineral density (m / f) prepubertal (r = 0,3 / 0,46), early pubertal (r = 0,32 / 0,49), pubertal (r = 0,4 / 0,58) groups, more expressed in girls (p> 0,01).

Conclusions: Serum leptin level was positively correlated with mineral density. A lean mass was significantly correlated with mineral density in boys.