

## Evaluation of Adiposity-Related Parameters in Obese Children

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**Abstract :** The aim of the study was to evaluate possible relations among biochemical parameters thought to be related with adiposity-related mechanisms in children with normal body mass index (N-BMI), obese (OB) children and children with metabolic syndrome (MetS). Weight, height, as well as waist, hip, head and neck circumference values were taken and body mass index values were calculated. Children with 6-18 years old were investigated. Forty-four children, whose BMI percentiles were 85-15, 88 children above 95th percentile, and 44 children with MetS were defined as control, OB and MetS groups, respectively. Serum leptin, ghrelin, adiponectin, asprosin, liver-expressed antimicrobial peptide 2 (Leap2), obestatin and interleukin-6 levels were determined using ELISA. Statistical analyses were performed using SPSS for Windows. As leptin concentrations were increasing with the development of obesity, decreases were recorded in ghrelin concentrations. Interleukin-6, as a proinflammatory marker, increased in obese groups compared to those in control group. Adiponectin appeared to be a parameter, which can not be used for the discrimination of OB children from those with MetS. Interleukin-6 was correlated with fasting blood glucose (FBG) in MetS group. Strong correlations were obtained among asprosin, Leap-2 and obestatin in all groups. Strong correlations among asprosin, Leap-2 and obestatin suggested possible close relations with each other using various mechanisms in different phases of the metabolism. The association between FBG, as a predictor of MetS, and interleukin-6 in MetS group may point out the necessity of interleukin-6 to be included in MetS component list. This study was funded by Scientific Research Projects Coordination Unit of Tekirdağ Namık Kemal University. Project number: NKUBAP.02.GA.19.192.

**Keywords :** adiposity, interleukin-6, metabolic syndrome, obese children

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