

Reflection of Gender Differences on the Associations among BMI, Body Fat Percentages, Body Circumference Values, and Cardiometabolic Parameters

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Abstract : The associations among anthropometric measurements, body fat, and cardiometabolic parameters have attracted attention for years due to the importance and topicality of the subject. Gender is also an important factor to be considered during the evaluation of the study findings. Gender is particularly important in the field of pediatrics and during the interpretation of complete blood cell count parameters. These parameters are important because their ratios are being used as valuable and informative markers demonstrating cardiometabolic risk. The aim of this study was to introduce potential differences between male and female children in terms of the associations between these ratios and parameters closely related to obesity development. The study population was composed of six hundred and twenty-seven children. Fifty-eight percent of children were females, and forty-two percent of children were males. The body mass index distribution of the groups was almost the same. The study was evaluated by the Institutional Ethics Committee and approved. Parents have given informed consent forms on behalf of their children to participate in the study. Anthropometric measurements were taken. Complete blood cell count, biochemical and body fat percentage analysis were performed. Body mass index, neutrophil-to-lymphocyte (N/L) ratio, aspartate aminotransferase-to-platelet count ratio were calculated. Statistical evaluations were performed by a statistical package program. Body mass index, circumferences of waist, hip, head, and neck values were higher, and body fat percentages of trunk and extremities were lower in males than females ($p>0.05$). Increased eosinophil percent and alanine aminotransferase-to-aspartate aminotransferase ratio decreased N/L ratio values in males were observed. Positive correlations between total body fat percent and N/L ratio in female children, platelet count in male children were noteworthy. In conclusion, associations of total body fat percent with N/L and platelet count in female children and male children, respectively, point out the importance of N/L and platelet count in different genders for the future development of cardiovascular diseases.

Keywords : body fat percentages, children, gender, neutrophil-to-lymphocyte ratio, platelet count

Conference Title : ICO 2025 : International Conference on Obesity

Conference Location : Istanbul, Türkiye

Conference Dates : February 10-11, 2025