

## Evaluation of Systemic Immune-Inflammation Index in Obese Children

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**Abstract :** A growing list of cancers might be influenced by obesity. Obesity is associated with an increased risk for the occurrence and development of some cancers. Inflammation can lead to cancer. It is one of the characteristic features of cancer and plays a critical role in cancer development. C-reactive protein (CRP) is under evaluation related to the new and simple prognostic factors in patients with metastatic renal cell cancer. Obesity can predict and promote systemic inflammation in healthy adults. BMI is correlated with  $hs$ -CRP. In this study, SII index and CRP values were evaluated in children with normal BMI and those within the range of different obesity grades to detect the tendency towards cancer in pediatric obesity. A total of one hundred and ninety-four children; thirty-five children with normal BMI, twenty overweight (OW), forty-seven obese (OB) and ninety-two morbid obese (MO) participated in the study. Age- and sex-matched groups were constituted using BMI-for age percentiles. Informed consent was obtained. Ethical Committee approval was taken. Weight, height, waist circumference (C), hip C, head C and neck C of the children were measured. The complete blood count test was performed. C-reactive protein analysis was performed. Statistical analyses were performed using SPSS. The degree for statistical significance was  $p \leq 0.05$ . SII index values were progressively increasing starting from normal weight (NW) to MO children. There is a statistically significant difference between NW and OB as well as MO children. No significant difference was observed between NW and OW children, however, a correlation was observed between NW and OW children. MO constitutes the only group, which exhibited a statistically significant correlation between SII index and CRP. Obesity-related bladder, kidney, cervical, liver, colorectal, endometrial cancers are still being investigated. Obesity, characterized as a chronic low-grade inflammation, is a crucial risk factor for colon cancer. Elevated childhood BMI values may be indicative of processes leading to cancer, initiated early in life. Prevention of childhood adiposity may decrease the cancer incidence in adults. To authors's best knowledge, this study is the first to introduce SII index values during obesity of varying degrees of severity. It is suggested that this index seems to affect all stages of obesity with an increasing tendency and may point out the concomitant status of obesity and cancer starting from very early periods of life.

**Keywords :** children, C-reactive protein, systemic immune-inflammation index, obesity

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