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RESEARCH PAPER

Association Between Circulating Inflammatory and Anti-inflammatory Proteins and Risk of Development of Type II Diabetes Mellitusin Indian Obese Children

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Interleukin 10, Type II diabetes mellitus, HOMA-IR, Obesity, Omentin-1,Visfatin

ABSTRACT : **Background and aim:** Anti-inflammatory IL-10, omentin-1 and inflammatory visfatin dysregulation play a role in the development of metabolic syndrome. The objective of this study was to evaluate the association between circulating IL-10, omentin-1 and visfatin concentration and risk of development of type II diabetesin obese with MS children. **Methods:**Total of 220 obese were enrolled in our case-control study. They were divided according to NCEP ATP III criteria into obese without MS (control) and obese with MS (case) based on their BMI-percentile, obese children subdivided into overweight, obese, severally obese on the basis of BMI (percentile). Fasting blood sample was collected to determine biochemical parameters. Serum IL-10, omentin-1and visfatin plasma level was assessed by ELISA kit method. Association of these proteins with biochemical and anthropometric parameters were studied. **Results:** Obese children with MS showed a borderline significant decrease in serum IL-10 levels, Omentin-1 levels however, significantly increased in visfatin levels as compared to without MS obese children. In correlation analysis, we found all the three proteins were significantly corelated with BMI (percentile) but visfatin was also corelated with fasting plasma glucose. **Interpretation and conclusions:** Our study supports the hypothesis that abnormal production of IL-10, omentin-1 and visfatin may contribute to the development of obesity in children, the correlation between MS and the BMI (percentile) may be an effective parameter in identifying obese children and adolescents at risk for MS. Screening the cases with BMI (percentile) for MS is an important factor for establishing an early diagnosis of diabetes.Risk of development of MS may be a diagnostic parameter for obesity-related complications such as Type II DM.

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