Association of Calprotectin with Obesity in Prepubertal Children

Jong Seo Yoon\(^1\), Eun Young Kim\(^2\), Kyung Hee Yi\(^3\), Young Suk Shim\(^4\), Il Tae Hwang\(^5\)

\(^1\)Department of Pediatrics, Hallym University School of Medicine, Seoul, Republic of Korea
\(^2\)Department of Pediatrics, Chosun University School of Medicine, Gwangju, Republic of Korea
\(^3\)Wonkwang University Sunbon Medical Center, Gunpo, Republic of Korea
\(^4\)Ajou University College of Medicine, Suwon, Republic of Korea

INTRODUCTION

Perturbation of inflammation is critically linked to nutrient metabolic pathways and obesity-associated complications, such as insulin resistance and type 2 diabetes (T2DM). The S100 family of proteins, including S100A8/A9 (calprotectin), have been implicated in disease pathogenesis and investigated as potential markers of inflammation. In adults, increased circulating levels of calprotectin have been reported in obesity-related chronic low-grade inflammation.

AIM

The present study aimed to investigate the differences in calprotectin levels in prepubertal children with normal-weight and overweight/obesity and to investigate whether these relationships remained significant after adjustment for possible confounders.

METHOD

1. Inclusions: 59 prepubertal children aged 6-9 years
2. Exclusions: hypothyroidism, Cushing syndrome, Prader-Willi syndrome, and T2DM
3. The subjects were divided into two groups: normal weighted group (BMI <85 Percentile, n=26) and overweight/obese group (BMI ≥85 Percentile, n=33)
4. Calprotectin and IL-6 were measured using Commercial ELISA kit (Buhlmann Laboratories AG, Schorenbuch, Switzerland) and ELISA assay kit (LSBio, Seattle System, Minneapolis, MN, USA), respectively
5. Pearson's coefficient of correlation (r) between calprotectin and clinical parameters were calculated. Multiple linear regression analyses was used to evaluate the independent association between calprotectin and obesity.

CONCLUSIONS

- Our results showed that the calprotectin was independently associated with obesity after adjustment for age, sex, and IL-6.
- Our results confirm a potential utility of calprotectin as a marker of obesity-associated chronic low-grade inflammation in children.

ACKNOWLEDGEMENTS

None

REFERENCES


CONTACT INFORMATION

Hallym University Kangdong Sacred Heart Hospital, Hallym University College of Medicine
E-mail: yj1202@hds.or.kr