

Histamine Skin Reactivity Increased with Body Mass Index in Korean Children

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Abstract : Objective: Histamine skin prick testing is most commonly used to diagnose immunoglobulin E (IgE)-mediated allergic diseases, and histamine reactivity is used as a standardized positive control in the interpretation of a skin prick test. However, reactivity to histamine differs among individuals for reasons that are poorly understood. The present study aimed to evaluate the potential association between body mass index (BMI) and histamine skin reactivity in children. Methods: A total of 451 children (246 boys, 205 girls) aged 7-8 years were enrolled in this study. The skin prick test was performed with 26 aeroallergens commonly found in Korea. Other information was collected, including sex, age, BMI, parental allergy history, and parental smoking status. Multivariate analysis was used to confirm the association between histamine skin reactivity and BMI. Results: The histamine wheal size was revealed to be associated with BMI (Spearman's Rho 0.161, $p < 0.001$). This association was confirmed by multivariate analysis, after adjusting for sex, age, parental allergy history, parental smoking status, and allergic sensitization (coefficient B 0.071, 95% confidence interval 0.030-0.112). Conclusions: Skin responses to histamine were primarily correlated with increased BMI. Further studies are needed to understand the clinical implication of BMI when interpreting the results of skin prick test.

Keywords : allergy, body mass index, histamine, skin prick test

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