Clinical characteristics and the serial changes of specific IgE in children with tolerance of egg allergy: preliminary report

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Introduction: Some of children with egg allergy usually outgrow until late childhood while the others persist. In this study, we evaluated the clinical characteristics and the serial changes of egg specific IgE levels relating with oral tolerance in children with egg allergy.

Methods: The children who visited to the Severance children hospital at Seoul from January, 2011 to December, 2014 with egg allergic symptoms were evaluated. The egg allergy was defined as a positive egg white specific IgE (egg sIgE >0.35 kU/L) and the clinical history relevant to egg allergy which was confirmed by a pediatric allergy specialist. An egg sIgE was measured over three times every 3 to 24 months and the oral tolerance was evaluated by clinical history at the last visit.

Result: In 44 children with egg allergy, an initial diagnosed age was 1.1±0.7 years old and the 31 (67%) children were male. Forty children had atopic dermatitis and the total IgE level was 155.5 kU/L (60.3-454.8 kU/L) and the initial egg white specific IgE level was 13.9 kU/L (1.8-29.4 kU/L). Among a total of 44 children, 22 children outgrow and the outgrowing age was 3.1±1.2 years old. The initial diagnosed age was lower and the serial decreasing tendency of egg specific IgE were shown in children with tolerance than in those without tolerance. The children with tolerance had more peanut allergy than those without tolerance. Considering the cutoff level of egg sIgE for predicting of egg allergy which was reported as 2 kU/L with 95% probability of reaction to egg in children younger than 2 years of age and 7 kU/L in children older than 2 years of age, in children with egg specific IgE above this cutoff level, the serial decreasing tendency of egg specific IgE were shown in children with tolerance than in those without tolerance.

Discussion: The serial decrease of egg sIgE may the most important to predict the tolerance in children with egg allergy regardless of egg sIgE level. A further study about component allergen testing or IgG4 of the more children with egg allergy will give more concrete information about predicting of tolerance of egg allergy.