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Immunogenetical Investigation on Children Experiencing Anaphylatic Reactions Following Vaccination

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The study was undertaken to investigate immunologic characteristics of children experiencing anaphylatic or anaphylactoid reactions following vaccination. We determined genetic polymorphism of interleukin-4 receptor alpha chain and compared with that of normal or allergic children without vaccine-induced anaphylaxis. Levels of plasma histamine or IgE were also compared between the two groups. Regarding the polymorphism, Both Q576R and I50V mutation (glutamine to arginine and isoleucine to valine substitution) was 22%, and I50V mutation with no mutation on Q576R was 66%. Plasma histamine level was significantly higher for the anaphylactic children than the allergic children with no anaphylaxis (1.1ng/ml vs 0.5ng/ml). Plasma IgE levels was also higher in the anaphylactic children than the control. Levels of stress hormone (epinephrine and cortisol) were elevated in the anaphylaxis children. We'll also discuss the functional aspects of T and B lymphocytes.

Keyword : anaphylaxis, children, IL-4R genetic variation, histamine