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The relationship between polymorphisms of ADRB2 gene and wheezing illness in 0-5 years children

Hai-Hao Su

Guangdong Women and Children's Hospital, China

Abstract

Objective: We have got to a common view that the wheezing children under 5 cannot be diagnosed as asthma. Even though there is difficulty in diagnosis, treatment cannot stopped. We are intent to find potential individual intervention of wheezing illness of these children, so we have investigated the association between polymorphism of rs1042713 locus of ADRB2 gene and wheezing illness in 0-5 years children, searched for the trait of this locus' distribution.

Method: 115 patients were enrolled as case group from Guangdong women and children's hospital under the selective standard. The cases were numbered by time. The buccal mucosa epithelia were collected as samples for test of gene locus at the same time. Meanwhile, 118 healthy children who accepted health check were enrolled as the control group in this hospital. Then the samples from buccal mucosa were sent to be tested. DNA was abstracted from the buccal mucosa epithelia. Genotyping was performed by Realtime-Fluorescence PCR.

Results: In 46th locus of rs1042713, there exist nucleotide A and G. When A was altered to G, the Arg16 would be altered to Gly16, and the protein function would be changed. In case group, frequency of allele A was 0.587, G 0.413. Frequency of Genotype A/A was 35.7%, A/G 46.1%, G/G 18.3%. In control group, frequency of allele A was 0.547, G 0.453, frequency of Genotype A/A was 29.7%, A/G 50.0%, G/G 20.3%. The character of target gene polymorphisms in local 0-5 children is similar to Chinese from other district and Japanese. There was no significant difference between genotypes or alleles of case and control group, but significant difference between severity degrees of two groups.

Conclusions: There was no correlation between locus' polymorphism and the susceptibility of local wheezing illness in 0-5 years old children. But there is correlation between the severity of illness and the locus' polymorphism. It showed that 0-5 years wheezing patients with G/G genotype were more susceptible to get more severe degrees.

Biography

Hai-Hao Su has completed his master's degree at the age of 33 years from Guangzhou Medical College. He is the attending doctor of Pediatrics in Guangdong Women and Children's Hospital, specializing in genetics and endocrinology. He has published about 10 papers in domestic and overseas journals, and being a member of committee of Guangzhou Pediatrics Association.