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Abstract (publication only)

Association of tumour necrosis factor–alpha gene polymorphisms with susceptibility to respiratory virus infection

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Objectives:Tumor necrosis factor-alpha (TNF-a) is a proinflammatory cytokine that is important in the innate host defense and thus in the defense of infectious agents. It has been known that several TNF- alpha gene polymorphisms in a promoter region are related to TNF-alpha production. Among them, the G to A substitution at the position 308 (TNF- alpha 308A) and at the position 238 (TNF- alpha 238A) in the TNF-alpha promoter are associated with the high or low production of TNF- alpha .The aim of this study was to investigate whether these genetic variants of TNF-a were associated with susceptibility to respiratory virus infection. Methods: This study included 183 children hospitalized as a result of respiratory symptom. DNA was extracted from nasopharyngeal aspirates and tested several times (more than two times) with Seeplex TM RV detection kit. Susceptible group consisted of 137 patients with more than 50% positive ratio in test and non-susceptible group consisted of 46 patients without any positive results. We used five primers and two separate polymerase chain reaction (PCR) to detect the TNF- polymorphism by the multiplex amplification refractory mutation system (ARMS) technique. Results: No statistically significant difference in the -308A and -238A allele frequencies was found between two group. Conclusions: These findings suggest that TNF- alpha polymorphism did not show genetic predisposition with regard to susceptibility to respiratory virus infection