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Transforming Growth Factor-Beta 1 Gene Polymorphism in Tuberculosis Patients

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ABSTRACT Tuberculosis (TB) is a curable infectious disease that kills around half million individuals every year in India. Cytokines play a vital role in the pathogenesis of this deadly disease. Transforming growth factor-beta 1 (TGF-β1) is one of the important anti-inflammatory cytokine found to be elevated in TB patients. Single nucleotide polymorphisms (SNP) in the promoter of TGF-β1 cytokine gene are known to alter the production of this important cytokine. Given its immunosuppressive nature increased production of this cytokine is implicated towards susceptibility to TB. The C/T polymorphism in TGF-β1 promoter at -509 site is strongly associated with circulating levels of this cytokine and T allele is shown to be associated with its high production. Thus, in the present study we looked for association of TGF-β1 (C-509T) SNP with TB. A total of 245 subjects (145 TB patients and 100 normal healthy controls) were recruited for study. The -509 polymorphism was studied using Amplification Refractory Mutation System- Polymerase Chain Reaction (ARMS-PCR). The distribution of C/T alleles in TB patients and normal healthy controls did not reveal any statistically significant association of this polymorphism with TB ($\chi^2 = 0.04$; $p = 0.85$).