



Relationship between cytokine gene polymorphisms and acute rejection following liver transplantation

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ABSTRACT. Acute rejection (AR) recurrence after liver transplantation (LT) is one of the major complications that leads to chronic graft dysfunction. It has been reported that the polymorphisms in some cytokine genes are associated with human liver allograft rejection. This study mainly investigated the associations between polymorphisms in the genes encoding interleukin-10 (*IL10*), transforming growth factor- β 1 (*TGF β 1*), and tumor necrosis factor- α (*TNF*), and the risk of AR recurrence. We enrolled 359 LT recipients; they were divided into two groups: an AR group (N = 165) and a non-AR group (N = 194) according to whether they experienced rejection within the first month following liver transplantation. After providing informed consent, blood was collected and DNA was extracted. The single nucleotide polymorphisms of *IL10* (-1082, -819, and -592), *TGF β 1* (+869 and +915), and *TNF* (-308) were investigated according to the methods used in previous studies. A significant difference was observed in the

distribution of allelic frequencies at position +869 in *TGFBI* between the AR and non-AR groups ($P = 0.000$). However, no significant differences ($P > 0.05$) were found in the genotype distributions in *IL10*, *TNF*, and *TGFBI* between the AR and non-AR groups. Our study suggests that the +869 gene polymorphism of *TGFBI* is significantly associated with liver graft rejection, while the other gene polymorphisms investigated in *IL10*, *TNF*, and *TGFBI* are probably not risk factors for AR in LT recipients.

Key words: Cytokines; Liver transplantation; Acute rejection; Single nucleotide polymorphism