

Asian Women in Transplantation - Gender Issues in Transplantation-Biologic Perspectives

Genes, hormones, and alloimmunity

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In patients undergoing liver transplantation (LT), an optimized immunosuppressive protocol developed on the basis of immune monitoring would be useful. For individual evaluations of the recipients' immune status, we have clinically applied a multiparametric mixed lymphocyte reaction (MLR) assay using an intracellular carboxyfluorescein diacetate succinimidyl ester (CFSE) labeling technique. In addition, we investigated the association between functional polymorphism of Foxp3 gene and the severity of alloimmune-responses determined by the MLR after LT. We analyzed the relationship between FOXP3 SNPs and ACR. We found no statistical association between the FOXP3 SNP genotype frequencies and ACR incidence. But, the proportion of rs3761548 was significantly different among patients with and without episode of SSAR or SRAR ($P = 0.0005$). Of note, all five patients suffering from SRAR exhibited the rs3761548 A carrier, while all 11 patients suffering from SSAR exhibited C/C genotype.

It is well known that regulatory T(Treg) cells play a pivotal role in the maintenance of immune homeostasis and, where the X-linked master transcription factor FOXP3 determines Treg cell development and function. FOXP3 SNPs have been reported to influence genetic susceptibility to various autoimmune diseases. In general, females are more susceptible to some auto immune disease. In this study, we present the gender influence on acute rejection focused on the role of FOXP3 gene variants in liver transplantation.