



Effect of *CYP3A5* gene polymorphisms on tacrolimus concentration/dosage ratio in adult liver transplant patients

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ABSTRACT. We examined the influence of the cytochrome P450 3A5 (*CYP3A5*) genes in both donors and recipients on the concentration-dosage ratio (C/D) of tacrolimus in Chinese liver transplant patients. Fifty-one adult liver transplant patients who received tacrolimus were included in this study. The *CYP3A5* polymorphism in donors and recipients was determined at the time of transplantation, and tacrolimus-based immunosuppressive therapy was started based on each patient's genetic constitution. The relationship between the C/D of tacrolimus for 3 months after surgery and the *CYP3A5* genotype was analyzed. A stepwise regression model was used to analyze the relationship between C/D of tacrolimus and genotype, time course, age, and liver weight in liver transplant patients. Three months after liver transplantation, C/D was both affected by the *CYP3A5* genotype of both the donors and

the recipients. The C/D of tacrolimus in patients with the *CYP3A5**1 allele or carrying *CYP3A5**1 allele in the liver was lower than that in *CYP3A5**3/*3 patients with the *CYP3A5**3/*3 genotype in the liver ($P < 0.01$). The *CYP3A5**1 genotype in donors as well as in patients both contributes to interindividual variation in the C/D of tacrolimus in adult liver transplantation.

Key words: Cytochrome P450 3A5; Liver transplantation; Tacrolimus; Pharmacogenomics