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Impact of Conversion from Cyclosporine to Tacrolimus on Glucose Metabolism and Cardiovascular Risk Profiles in Long-Term Stable Kidney Transplant Recipients

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Objectives:

Compared with tacrolimus, cyclosporine increases cardiovascular risk. Furthermore, tacrolimus has a negative effect on glucose metabolism compared with cyclosporine. This study investigated the effect of the conversion from cyclosporine to tacrolimus for immunosuppressive therapy on glucose metabolism and cardiovascular risk profiles in long-term stable kidney transplant recipients (KTRs).

Methods: In this prospective, open-label, single arm study, 36 KTRs were enrolled. Three were excluded. Patients were evaluated for glucose metabolism and cardiovascular risk factors at baseline, 3-, and 6-months after conversion of medication. Serial changes were analyzed by repeated measures analysis of variance.

Results: The mean duration from transplantation was 12.6 ± 4.0 years and baseline serum creatinine levels were 1.10 ± 0.23 mg/dL. After conversion, fasting plasma glucose levels increased sequentially from 101.7 ± 18.5 to 107.4 ± 21.3 mg/dL (P=0.007), and glycated hemoglobin levels increased from 5.7 ± 0.8 to 6.0 ± 1.2 % (P=0.016). Among cardiovascular risk factors, fibrinogen levels were decreased (P=0.015), but other factors including blood pressure and lipid profile were not changed (all P>0.05). There was no change in renal function, including the serum creatinine (P=0.611) and urine protein-to-creatinine ratio (P=0.092). Body mass index levels were decreased (P=0.037) and body weight showed a decreasing tendency (P=0.063).

Conclusions:

Switching of immunosuppressant to tacrolimus has an apparent negative effect on glucose metabolism and an unclear advantage on cardiovascular risk profiles for long-term stable KTRs.