

# Effect of conversion from Tacrolimus to Cyclosporine on glucose metabolism and graft function in New Onset Diabetes Mellitus After Transplantation

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**Aim:** To study the effect of conversion from Tacrolimus to Cyclosporine based immunosuppression on the blood sugar control and on graft function.

**Inclusion Criteria:** (1) Renal transplant recipients of either gender above 18 years and on Tacrolimus as primary immunosuppressive agent. (2) Patients who developed NODAT according to the diagnostic criteria of American Diabetes Association FBS > 126 mg/dl and PPBS > 200 mg/dl on two separate occasions

**Exclusion criteria:** Patients with diabetes at the time of transplantation Hypersensitivity to Cyclosporine, Tacrolimus or any of its known excipients

**Study design:** Open label randomized prospective study. Patients randomly assigned to two groups .First group was switched from Tacrolimus to Cyclosporine at the time of diagnosis of NODAT (50 mg Cyclosporine to 1 mg Tacrolimus ) Dose modifications based on drug levels. Second group was continued on Tacrolimus Followed up at 4, 8, 12, 24 and 52 weeks .Blood sugar control assessed by fasting and post prandial blood sugars and the Insulin requirement .Graft function assessed by serum creatinine and urine protein measurement .Renal biopsy performed when appropriate. Statistical analyses done with independent samples t test .P value less than 0.05 taken as statistically significant. 10 patients in each group All were males Similar doses of MMF and Steroid were given. other medications include Insulin Antihypertensives and Statins

**Results :**FBS significantly low at 52 wks in CsA group [P value 0.05]. Blood Sugar Control PPBS not significantly different Less Insulin requirement in CsA group[Not statistically significant]. S.Creatinine significantly high in CsA group at 4 wks[p 0.041], 8 wks [p 0.02], 12 wks [0.017]. No significant difference at 52 wks[0.151]. 1 patient in CsA group had rejection [ACR]. No rejection episodes in Tacrolimus group. No significant proteinuria in either group Mean cholesterol level and Mean Diastolic blood pressure higher in the CsA group[Not statistically significant].

**Conclusion:** Switching over to Cyclosporine is associated with early graft dysfunction. Graft function was similar in both groups at 52 weeks. Conversion from Tacrolimus to Cyclosporine based immunosuppression is associated with a better effect on glucose metabolism in patients with New Onset Diabetes Mellitus after transplantation

Baseline characteristics	Tacrolimus	Cyclosporine	P value
Age	34.6	36.4	0.478
S creatinine	1.09	1.173	0.426.
FBS	157.6	172.4	0.516
PPBS	241.1	302.8	0.149
Cholesterol	226.2	235.9	0.468
SBP	137.6	134.2	0.533
DBP	82.4	85.2	0.433
Onset of NODAT	72	96.7	0.329