Proteinuria and Baseline Renal Function Predict the Mortality and Renal Outcome after Sirolimus Conversion in Liver Transplantation Recipients- A Ten-year Experience

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Sirolimus (SRL), a mammalian target of rapamycin (mTOR) inhibitor, is used to reduce or replace doses of calcineurin inhibitors to reduce the risk of chronic kidney disease (CKD) after liver transplantation (LT). The aims of this study were to investigate the role of proteinuria before and after SRL initiation on renal outcomes and mortality. Data on 576 adult LT recipients who initiated with SRL from 2005 to 2014 were reviewed. The primary outcome was the incidence of eGFR reduction > 50% from baseline, chronic dialysis and mortality rate. Proteinuria was identified using dipstick results (>30 mg/dL) at baseline and 12 months following SRL therapy. The impact of proteinuria and other characteristics on study outcomes was assessed using Cox proportional hazards model with significance level at $p<0.05$. In total, 135 patients (25.3%) had renal function reduction > 50% and chronic dialysis; 68 patient deaths (11.8%). The mean eGFR at baseline was 78.6 (+/- 42.94) and 14% patients with proteinuria at baseline. Among LT recipients with baseline eGFR < 60 ml/min/1.73m^2, patients with baseline proteinuria revealed significantly lower survival ($p<.001$) and higher rate of renal function progression than their counterparts ($p<.0001$). Persistent and new onset proteinuria were associated with low survival rate and worsen renal outcome during the follow-up. After adjustments, new onset proteinuria within first 12 months follow-up and baseline eGFR significantly increased risk of renal function deterioration. Diabetes (before and after LT) were the independent determinants of new onset proteinuria following SRL therapy. In conclusion, both baseline and new onset proteinuria among SRL users were significantly associated with renal function deterioration. These findings may facilitate effective prevention strategy targeting CKD risk modification in practice.