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Does early conversion to mTOR inhibitors epitomise a decorous choice in renal transplant recipients?

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Objectives : The purpose of this meta-analysis is to consolidate the present evidence of effectiveness in renal functioning and graft survival following early introduction of mTOR inhibitors with or without calcineurin inhibitors (CNI) in renal transplant recipients.

Methods : We analysed the current literature following PROSPERO approval describing the role of immunosuppressive agent, mTOR inhibitors as an alternative to CNI within six months of renal transplant by searching the PubMed, EMBASE, Cochrane, Crossref, and Scopus using MeSH terms.

Results : Six articles of early withdrawal of CNI and introduction of mTOR-inhibitors within six months of renal transplantation were sought. Glomerular filtration rate (GFR) and serum creatinine were significantly better in mTOR inhibitor group with equivalent survival at 12 months, even though Biopsy Proven Acute rejection (BPAR) was significantly higher in mTOR-inhibitor group.

Conclusions : The evidence reviewed in this meta-analysis suggest that early introduction mTOR-inhibitors substantial CNI minimization. The mTOR inhibitors such as everolimus and sirolimus, due to their complementary mechanism of action and favourable nephrotoxicity profile; better glomerular filtration, lower serum creatinine with equivalent survival. Having said that, due to the higher rejection rate, may influence the use of these regimens to patients with moderate to high immunological risk patients.

Keywords : Adverse events, Calcineurin Inhibitors, Graft Failure, Kidney Transplantation, mTOR Inhibitors