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Joint association of Early Steroid Withdrawal and mTORi usage with kidney transplant outcomes

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Objectives : Steroid is the mainstay of maintenance immunosuppression used in organ transplantation. However, there is no consensus on the best time to withdraw steroids after transplantation. The aim of this retrospective study was to determine the outcomes in kidney transplantation following the discontinuation of steroid in 3 months' time after a successful surgery, with or without MTORi used.
Methods : This retrospective single center study enrolled kidney transplant recipients from year 2010 till year 2020. The data was analyzed using resources from the Kaohsiung Medical University Hospital Research Database (KMUHRD). Patients were divided into four groups according to steroid usage of <90 days and ≧90 days, with or without mTORi used. The outcome analysis includes incidences of infection and events of cardiovascular diseases, rejection, graft and patient survival.
Results : The kidney transplant cohort consisted of 155 patients aged >20 years old with male predominant (52.9%). 67.14% of our cohort has cardiovascular(CV) event. As compared to those without steroid use, patients with steroid usage have higher risk for CV events (HR:1.53[CI:1.01-2.31], P=0.045). The subgroup without steroid and mTORi usage has lower risk of CV death (HR:0.36[CI:0.13-0.96], P=0.042). In terms of patient survival and graft rejection, there was no significant difference among all groups.
Conclusions : Steroid withdrawal at <90 days after transplantation was not associated with superior graft and patient survival. Nevertheless, long-term steroid use may have adverse effects, such as increased risk for CV events and death. It is important to consider other associated factors, including multi-agent immunosuppressive therapy and the patient's comorbidity including post-transplant metabolic syndrome in future analyses for optimal results in assessing the timing of steroid withdrawal.