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Preventing Diabetic Nephropathy Following Kidney Transplant: Key Considerations

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The short-term and long-term clinical outcomes after kidney transplantation have improved with advances in surgical and pharmacological techniques. However, the number of kidney transplant recipients who require metabolic disease management is also increasing. Diabetes mellitus (DM) is the leading cause of end-stage renal disease (ESRD), and careful management of DM is still required after kidney transplantation because immune suppressant including calcineurin inhibitor and corticosteroids can make difficult to control of DM and it is still powerful risk factor for cardiovascular complications and also adverse long-term allograft outcomes. In addition, Post-Transplant Diabetes Mellitus (PTDM) is a common complication after kidney transplantation and is also associated with risks of allograft loss, cardiovascular morbidity, and mortality. Immunosuppressive therapy, by different diabetogenic mechanisms, is the major risk factor for PTDM and also aggravating underlying DM. Although corticosteroids and calcineurin inhibitors are the drugs most related to PTDM, the mechanisms of other drugs have been also investigated. Another risk factors for PTDM include older age, genetic background, obesity, hepatitis C virus infection, hypomagnesemia. Management of PTDM should be started before the transplantation plan to properly screen high risk patients. Recently, various types of newly developed anti-diabetic drugs including DPP4 inhibitor and SGLT2 inhibitors or GLP1-RA showed favorable clinical outcomes not only in lowering glucose level but also, in reducing cardiovascular morbidity in general type 2 DM patients. Of course, those drugs are expected to improve clinical outcomes in PTDM as well. Even though management of DM in kidney transplant recipients is similar to that of general type 2 diabetes, therapeutic approaches must be made with consideration of drug interactions between immunosuppressive agents, glucose-lowering medications, and graft rejection and function. In this presentation, we will introduce the efficacy and safety of new anti-diabetic drugs and also proper management approaches that should help to reduce the possible long-term

adverse consequences of DM in kidney transplant recipients.

Keywords: kidney transplantation, diabetes mellitus, tacrolimus, SGLT2i, GLP1RA