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Are Sodium-Glucose Cotransporter-2 (SGLT-2) Inhibitors a Game Changer for Improving Posttransplant Outcomes?

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Sodium-glucose cotransporter 2 (SGLT2) inhibition is an emerging therapeutic option. SGLT2 is located in the early proximal tubule of the kidney, reabsorbing glucose from the glomerular filtrate selective SGLT2 inhibition results in substantial amounts of urinary excreted glucose, thereby lowering blood glucose levels independent of insulin. Empagliflozin has been shown to reduce both cardiovascular death and progression of diabetic nephropathy. These effects seem to be independent of glucose lowering effects. Possible explanations for the renal protective effects include a reduced glomerular capillary pressure and an amelioration of glomerular hyperfiltration. Recent data suggest that the effect of SGLT2 inhibition is additional to the effects of angiotensin-converting enzyme inhibitors/angiotensin receptor blockers. Further extrarenal effects of SGLT2 inhibition include reductions in body weight and blood pressure, possibly augmenting renoprotective effects. SGLT2 inhibitors are a promising drug class, yielding a reduction of micro- and macrovascular complications and an enormous potential in the high-risk group of kidney transplant recipients. On the other hand, SGLT2 inhibition carries the potential risk of side effects including volume depletion and urinary tract infection due to glucosuria, both to which kidney transplant recipients are prone. This is further complicated by the complex situation including the necessity of immunosuppression and a single functioning kidney.
However, these drugs are mostly withheld in a posttransplant setting owing to uncertainty and wariness in this special patient population. Principal concerns comprise volume homeostasis and the risk of AKI, as well as infectious complications.
One simultaneously performed and recently published study showed that SGLT2 inhibition in kidney transplant recipients was feasible. As broader safety data on the use of the SGLT2 inhibitors in kidney transplant recipients are missing to date, SGLT2 inhibitors are currently seldom used in kidney transplant recipients with diabetes, despite the need for inhibition of progression, especially in these patients.