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Uptodate review of the management of diabetes in hemodialysis patients

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Given the increased prevalence of ESKD due to diabetes, it is worth considering various factors that cause special difficulties in providing the best treatment for this population. Blood glucose control in hemodialysis patients causes many difficulties because both uremia and dialysis can affect insulin secretion and sensitivity. These factors contribute to large fluctuations in blood glucose levels and exogenous insulin requirements. Hemoglobin A1c (HbA1c) is the established gold standard indicator for assessing long-term glucose control in diabetes.

However, patients undergoing hemodialysis have erythrocytes with a reduced shelf life. Other markers of diabetes control such as fructosamine and glycated albumin can prevent problems related to the half-life of hemoglobin and provide alternatives to HbA1c. The latest KDIGO guidelines highlight the inaccuracy of HbA1c, and suggest the use of continuous monitoring devices as an alternative. Continuous glucose monitoring (CGM) is a clinical tool for the treatment and management of diabetes. Devices that perform continuous transcutaneous interstitial glucose monitoring provide a means to facilitate diabetes control, resulting in better HbA1c levels, less glucose variability, less frequent hypoglycemic episodes, better quality of life, and more lifestyle flexibility. In patients undergoing dialysis treatment, the use of CGM emerges as a promising tool for the assessment of glycemic control, allowing the tracking of the physiological dynamics of glucose in greater detail, both in relation to meals and hemodialysis sessions.

However, up to date, experience with CGM in CKD patients on dialysis is limited and it warrants further investigations. Titration of insulin therapy may become quite challenging, as hemodialysis treatment often impacts insulin requirements. New medications have significantly improved the ability of the clinician to provide effective therapies for the management of diabetes, but have also raised an equal amount of uncertainty with respect to their safety and efficacy in the HD population. Glucagon-like peptide-1 receptor agonists (GLP-1 RAs) reduce hyperglycemia by inducing satiety and stimulating insulin secretion and postprandial glucagon release. GLP-1 RAs would become a treatment option for patients with hemodialysis therapy because most of them can be prescribed regardless of renal function. Several large trials have reported the efficacy of GLP-1 RAs in preventing cardiovascular events in patients with T2D, along with their glucose-lowering effects. Future studies should confirm the safety and clinical benefit of GLP-1 RA for patients undergoing hemodialysis treatments, for whom there are limited data.