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Potassium Disorders in Dialysis Patients

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Dyskalemia is a frequent electrolyte imbalance observed among the maintenance dialysis patients. The prevalence of hyperkalemia in hemodialysis (HD) patients was reported to be up to 10%. Mortality related to hyperkalemia has been shown to be about 2-5% of deaths among patients with end-stage renal disease (ESRD) and about 24% of patients with HD required emergency hemodialysis due to severe hyperkalemia. Common causes of hyperkalemia in dialysis patients include excess intake of potassium, most often through dietary indiscretion but occasionally from overzealous intravenous or oral supplementation. In addition, inadequate dialytic potassium removal may be a cause of hyperkalemia in patients with ESRD who skip dialysis treatments or cut their sessions short.

In contrast to the hyperkalemia, hypokalemia in maintenance hemodialysis patients is less frequent condition. The precise prevalence of hypokalemia in maintenance HD patients is unknown but the prevalence is various among different centers. Most hypokalemic patients are asymptomatic depending on serum [K] levels but it can be associated with mild muscle weakness to serious sudden cardiac death. It can be caused by low dietary potassium intake, malnutrition, chronic diarrhea, prescription of drugs that can increase colonic [K] excretions such as mineralocorticoids and [K]-exchange resins. Much less attention has been paid to the hypokalemia in hemodialysis patients because of the low prevalence under maintenance hemodialysis patients. However, severe hypokalemia should be also paid attention to prevent cardiac rhythm disturbances and serious neuromuscular weaknesses.

In this lecture, current views of potassium disorders in dialysis patients, its mechanisms, treatment modalities, and approaches to its prevention will be discussed.