Prevalence and risk factors of hyperkalemia early period after kidney transplantation

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Background: Electrolyte abnormality after kidney transplantation (KT) is common complications owing to immunosuppressive agents, prophylactic antibiotics, anti-hypertensive agents and uncontrolled diabetes. Hyperkalemia is a fatal electrolyte abnormality that often leads to arrhythmia and sudden cardiac arrest. However, there are few studies on incidence and factors related to hyperkalemia after KT. We evaluated the prevalence of hyperkalemia and related factors for early period after transplantation.

Methods: We analyzed database of patients who conducted KT in our institute from April 2019 to January 2021. Among 26 kidney transplant recipients (KTRs), 11 patients (42.3%) had experienced hyperkalemia for 6 months after KT. We divided into two groups of normokalemic KTRs group (n=15) and hyperkalemia KTRs group (n=11) according to hyperkalemia. Hyperkalemia was defined as serum potassium over 5.1 mmol/L or use of potassium lowering agent owing to hyperkalemia. We compared clinical data between the two groups.

Results: The mean age of the patients was 52.0±9.5 years with 15 patients (57.7%) for male sex. Dialysis modality before transplantation was hemodialysis (n=23, 88.5%) in the most patients. A major cause of KT was diabetes (n=11, 42.3%), then followed to hypertension (n=8, 30.8%) and chronic glomerulonephritis (n=3, 11.5%). The hyperkalemic KTRs group compared with the normokalemia KTRs group was older age (56.3 years vs. 48.9 years, P=0.045), longer dialysis vintage (61.5 months vs. 29.6 months, P=0.045), more deceased donor KT (81.8% vs. 26.7%, P=0.005) and more acute rejection (54.5% vs. 93.3%, P=0.05).

Conclusions: KTRs with older age and longer dialysis vintage need more stringent surveillance for hyperkalemia, especially if they received a transplant from deceased donor and treated acute rejection.

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