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ASSOCIATION BETWEEN PRE-KIDNEY TRANSPLANT SERUM SODIUM AND POST-TRANSPLANT OUTCOMES:

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Post-kidney transplant (KT) dysnatremia is associated with poor outcomes; however, post-KT outcomes related to pre-KT serum sodium (SNa) are unknown. This study aims to examine the association between SNa during 6-mo pre-KT and post-KT outcomes.

KT patients from the TCKKD study, a retrospective cohort study examining 102,477 US veterans with late-stage nondialysis-dependent CKD transitioning to kidney replacement therapy, were categorized based on 6-mo pre-KT SNa into 5 groups: <135, 135 - <137, 137 - <140(ref.), 140 - <143, and \geq 143 mmol/L. The association between the pre-KT SNa and post-KT outcomes was examined by Cox regression.

Of 1,220 patients, the mean \pm SD age of 60 \pm 10 yrs, 1,172 patients were male, and baseline pre-KT SNa was 139 \pm 3 mmol/L. 107 patients died with a median time at risk of 2.35 yrs and the incidence rate was 3.37 death/100 person-yrs. There was a positive association between corrected SNa and all-cause mortality. However, the association was a J-shape with the lowest all-cause mortality rate in the reference group. Patients with the highest corrected SNa had a 2.15 times higher risk of all-cause mortality compared to the reference group (adjusted HR 2.15, 95%CI 0.95,4.87); while, the death risk was greatest among the highest uncorrected SNa group (HR 2.57, 95%CI 1.11,5.93). Using a spline term, the all-cause mortality increase was 7.48% for every 1 mmol/L increase in SNa among patients with the pre-KT corrected SNa \geq 138 mmol/L (HR 1.07, 95%CI 0.97,1.19); whereas, the risk increased only 0.02% for patients with pre-KT corrected SNa <138 mmol/L (HR 1.0002, 95%CI 0.86,1.16) (Figure 1). There were no differences in the CV and infectious mortality and death-censored and all-cause graft loss among different SNa groups. Length of stay (LOS) decreased 0.47 and 0.38 days for every 1 mmol/L increase in corrected and uncorrected SNa ($p < 0.001$ and 0.004 , respectively).

High pre-KT SNa is associated with post-KT all-cause mortality, but with shortened LOS for KT admission.