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Dialysis

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Predialysis Hyponatremia and Mortality in Elderly Patients Beginning to Undergo

Dialysis

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Background: Predialysis hyponatremia has been recently reported to be associated with mortality in incident hemodialysis patients. However, whether hyponatremia is associated with unfavorable outcomes in elderly patients remains unknown. We also hypothesized that nephrology referral influences hyponatremia, and aimed to define how nephrology referral associated hyponatremia affects the association between hyponatremia and mortality in the elderly.

Methods: We retrospectively assessed mortality in 599 incident hemodialysis patients aged ≥ 70 at a tertiary university hospital, between 2000 and 2010. We analyzed 90-day and 1-year all-cause mortality (ACM) in relation to predialysis serum sodium (sNa). We divided the patients into 2 groups according to predialysis glucose-corrected sNa: hyponatremia (< 135 mmol/L) and normonatremia (135-145 mmol/L).

Results: The median value of sNa was 137.3 mmol/L (interquartile range, 133.6-140.0 mmol/L). Low estimated glomerular filtration rate, high phosphorus, low albumin, central venous catheter rather than arteriovenous fistula or graft, and late referral were associated with a low sNa in the elderly. Among 599 patients, 106 (17.7%) and 174 (29.0%) patients died at the 90-day and 1-year follow ups, respectively. Each 10-mmol/L increase in predialysis sNa was associated with lower 90-day and 1-year ACM (90-day ACM: HR = 0.638, P = 0.012; 1-year ACM: HR = 0.681, P = 0.006). When the patients were stratified by nephrology referral, hyponatremia was associated with increased mortality in early referral group (90-day ACM: HR = 2.474, P = 0.026; 1-year ACM: HR = 1.954, P = 0.011). However, hyponatremia was not associated with mortality in late referral group.

Conclusion: Predialysis hyponatremia at hemodialysis initiation is associated with late referral and increased short-term ACM in the elderly. Nephrology referral associated

hyponatremia affects the association between hyponatremia and mortality in elderly patients.

Keywords: elderly patient, hemodialysis, mortality, sodium