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Serum albumin is more predictive marker to predict all-cause mortality in elderly HD patients than in younger HD patients

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Objectives: The average age to initiate hemodialysis (HD) is increasing. Elderly dialysis patients experience not only uremic symptoms but also geriatric syndrome. This study is designed to identify the different clinical characteristics and find the sensitive marker to predict outcomes in elderly HD patients.

Methods: We collected clinical and laboratory data from 447 HD patients from K-cohort. Questionnaire related QOL and physical activity measurement were conducted. The patients were divided into younger (n = 242) and older groups (n = 206) based on age 65.

Results: Mean follow-up period was 43.3 months. Average age was 52.8 ± 8.6 and 73.6 ± 5.9 in younger and older group, respectively. Older group showed lower pre and post-dialysis DBP, pre-BUN, albumin, T3, ferritin and, higher post-dialysis SBP, single-pool Kt/V, urea reduction rate (URR), total cholesterol, beta2-microglobulin, Ca x P, WBC, hs-CRP, comorbidity index than younger group. Almost domains of KD-QOL were lower graded in older group. MMSE and Beck depression index showed not only cognitive function but also depression was worse in older group. Plasma osteoprotegerin, B cell activating factor of the TNF family (BAFF), endocan, IL-6, and MMP-7 was significantly elevated in older patients. All-cause mortality at 24-month was 17.5% and 4.5% in older and younger group, respectively ($p = 0.000$). Multiple regression analysis showed T3 is the most predictive marker for mortality ($B = -0.020$, $p = 0.002$) in younger group. In contrast, serum albumin is the most sensitive marker in older group ($B = -0.287$, $p = 0.004$).

Conclusions: Elderly HD patients were in lower nutritional status, physical function, and QOL, whereas higher comorbid and inflammatory status compared with younger HD patients. Low-albumin might be a sensitive indicator to predict outcome in elderly HD patients