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Clinical Outcomes of Hemodialysis in Elderly Patients with Kidney Failure: A Korean Nationwide Population-Based Cohort Study

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Objectives : Chronic kidney disease (CKD) prevalence increases with age, making dialysis initiation challenging due to multiple comorbidities and varying survival outcomes in elderly. This study aims to assess the survival outcomes of hemodialysis (HD) compared to conservative treatment in elderly patients.
Methods : A retrospective cohort study was conducted using data from 2013 to 2019 of the National Health Insurance Service. Of the total 56,652 patients aged ≥65 years with kidney failure treated by HD or without kidney replacement therapy, 37,938 HD patients and 18,714 conservatively treated patients were included and followed up until 2022. Survival outcomes were analyzed using the Cox proportional hazards models.
Results : The HD group was younger (75.7±6.5 vs. 79.0±7.3 years), with fewer patients over 85 years (9.96% vs. 23.52%), and men were more prevalent (55.39% vs. 50.30%). HD patients had higher rates of hypertension (96.13% vs. 91.35%), diabetes mellitus (75.25% vs. 66.42%), and greater comorbidity burden compared to conservatively treated patients. More HD patients received long-term nephrology care for more than 12 months (65.04% vs. 41.43%). The overall mortality rate was significantly lower in HD groups compared to conservative groups, with a hazard ratio of 0.68 (95% CI: 0.67-0.70, $p<0.001$), and this survival benefit was pronounced within the first 30 days (HR=0.22, 95% CI: 0.20-0.23, $p<0.001$). The benefit was attenuated over a longer follow-up period of 3 years (HR=0.62, 95% CI: 0.60-0.63, $p<0.001$), but remained significant. HD was consistently associated with lower mortality risk across all age groups (HR=0.78 for 65-74 years, 95% CI: 0.74-0.81, $p<0.001$; HR=0.81 for 75-84 years, 95% CI: 0.79-0.84, $p<0.001$; HR=0.82 for over 85 years, 95% CI: 0.78-0.86, $p<0.001$).
Conclusions : This study demonstrates significantly lower mortality rates in elderly HD patients compared to conservatively managed kidney failure patients, supporting the recommendation of HD even for those over 85 years, considering underlying medical conditions.