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Patency of hemodialysis vascular access in the elderly over 80 years of age

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Objectives : In this study, we aim to compare the patency and patient survival of arteriovenous fistula (AVF) and arteriovenous graft (AVG) in patients aged 80 years and older undergoing hemodialysis (HD) in Korea.

Methods : We collected data from the Korean National Health Insurance Service database from January 2008 to December 2019. Total of 8,487 elderly (≥ 80 years) HD patients were retrospectively reviewed to identify their clinical characteristics and outcomes. The collected variables included ICD-10 diagnosis codes, procedure codes, prescription history and patient survival. Vascular access (VA) patencies were analyzed using the time intervals between procedure codes. The risk factors associated with patencies and patient survival between AVF and AVG were compared.

Results : Elderly AVF group (n = 5,124) had superior primary, primary assisted, and secondary patencies than elderly AVG group (n = 3,363) (all p values were <0.001). Patient survival was also better in the elderly AVF group than in the elderly AVG (p <0.001). In multivariate Cox regression analyses for diverse outcomes, AVG (vs. AVF) was identified as a risk factor for all-cause mortality (adjusted hazard ratio [HR]: 1.222; 95% confidence interval [CI]: 1.160–1.288; p < 0.001), primary patency (adjusted HR: 1.764; 95% CI: 1.668–1.865; p < 0.001), primary-assisted patency (adjusted HR: 1.896; 95% CI: 1.770–2.032; p < 0.001), and secondary patency (adjusted HR: 3.177; 95% CI: 2.801–3.603; p < 0.001).

Conclusions : In our study, incident HD with AVF showed better VA patency and patient survival than those with AVG in elderly patients age over 80 years. This result demonstrated that as a permanent VA for HD, AVF should be strongly considered even in the elderly (≥ 80 years) patients with appropriate vascular circumstances. The age itself should not be considered as a limiting factor for VA choice.

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