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## **Native arteriovenous fistula is the best permanent vascular access in elderly Korean population based on National Health Insurance Service database**

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**Objectives:** As nearly half of patients with end-stage kidney disease (ESKD) who initiate hemodialysis are over 65 years old (commonly defined as elderly), the fistula first strategy is controversial even in hemodialysis (HD) patients  $\geq$  65 years.

**Methods:** In Korea's National Health Insurance Service (NHIS) database from 2008 to 2019, 41,989 elderly ( $\geq$  65 years) HD patients were retrospectively reviewed to identify their clinical characteristics and outcomes. Vascular access patencies, risk factors associated with patencies and patient survival between arteriovenous fistula (AVF) and arteriovenous graft (AVG) were compared.

**Results:** Elderly AVF group (n = 28,467) had superior primary, primary assisted, and secondary patencies than elderly AVG group (n = 13,522) (all p values are  $<$  .001, Fig. 1A, 1B & 1C). 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): 1.307; 95% confidence interval (CI): 1.272–1.343; p  $<$  0.001), primary patency (adjusted HR: 1.745; 95% CI: 1.701–1.790; p  $<$  0.001), primary assisted patency (adjusted HR: 2.163; 95% CI: 2.095–2.233; p  $<$  0.001), and secondary patency (adjusted HR: 3.718; 95% CI: 3.533–3.913; p  $<$  0.001).

**Conclusions:** Our study demonstrated that as a permanent vascular access (VA) for HD, AVF should be strongly considered in elderly ( $\geq$  65 years) ESKD Korean patients. The age limit for AVF creation in ESKD patients should be adjusted more upward.

Figure 1