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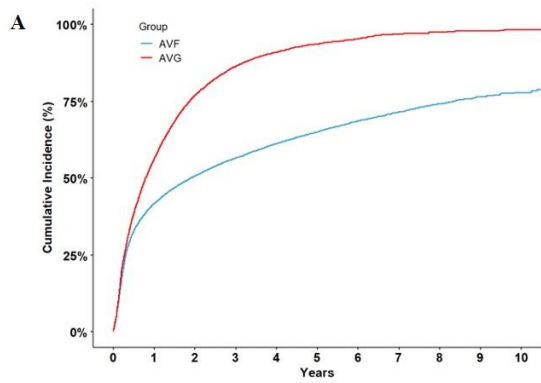
**Objectives:** As nearly half of patients with end-stage kidney disease (ESKD) who initiate hemodialysis are over 65 years old (commonly defined as elderly), the fistula first strategy is controversial even in hemodialysis (HD) patients  $\geq 65$  years.

**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;  $p < 0.001$ ).

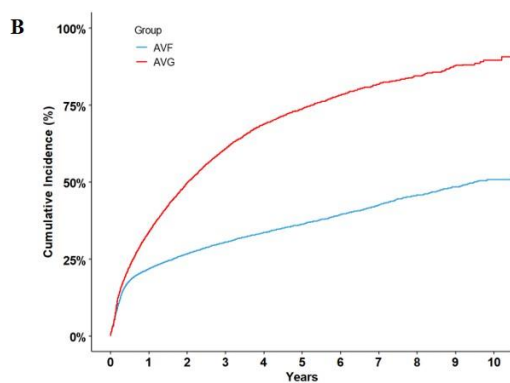
**Conclusions:** Our study demonstrated that as a permanent vascular access (VA) for HD, AVF should be strongly considered in elderly ( $\geq 65$  years) ESKD Korean patients. The age limit for AVF creation in ESKD patients should be adjusted more upward.

Figure 1



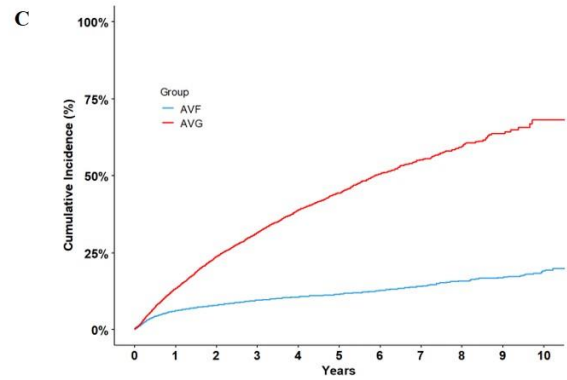
Number at risk

AVF	28467	14036	9387	6345	4194	2747	1725	1037	596	307	110
AVG	13522	4689	1936	856	454	237	130	56	23	13	3



Number at risk

AVF	28467	18763	13679	9760	6737	4522	2973	1848	1056	530	198
AVG	13522	6999	4022	2282	1357	817	471	262	121	48	12



Number at risk

AVF	28467	22225	16404	11833	8247	5512	3576	2228	1266	635	224
AVG	13522	8952	5588	3386	2047	1242	736	398	173	63	14