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## **Maturation Outcomes of Arteriovenous Fistula Versus Graft: A Multicenter Prospective Registry Study**

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**Objectives :** Arteriovenous fistula (AVF) is the preferred vascular access for hemodialysis; however, maturation failure may occur, and additional interventions are sometimes required for maturation. Most vascular access studies conducted in Korea have been based on retrospective designs, which may limit the accurate assessment of clinical outcomes. The aim of this study was to evaluate AVF maturation outcomes in a prospective registry and to compare them with arteriovenous graft (AVG).

**Methods :** This study was a prospective, multicenter (n=21) registry-based study and evaluated patients who underwent AVF or AVG creation between April 2025 and November 2025. The primary outcome was vascular access maturation, assessed by maturation failure and the need for augmentation during maturation. The secondary outcome was defined as catheter insertion after vascular access creation.

**Results :** 998 patients were enrolled: 653 (65.4%) in the AVF group and 345 (34.6%) in the AVG group. The overall mean age was  $65.95 \pm 13.36$  years, 43.5% were female, and the mean follow-up duration was 4.53 months. The vascular access maturation rate was 87.7% in the AVF group and 93.9% in the AVG group, while maturation failure was rare in both groups (0.5% and 0.3%, respectively). Augmentation for maturation was required more frequently in the AVF group (11.8% vs. 5.8%,  $P=0.008$ , Table 1). Kaplan–Meier analysis showed earlier events in the AVF group; however, no significant difference was observed during the follow-up period (log-rank  $P=0.45$ , Figure 1A). Catheter insertion after access creation occurred in 4.9% of the AVF group and 8.7% of the AVG group ( $P=0.026$ ), and the Kaplan–Meier analysis also showed a significantly higher risk of catheter insertion in the AVG group (log-rank  $P=0.011$ , Figure 1B).

**Conclusions :** AVF was associated with more frequent interventions during maturation but fewer catheter insertions during follow-up, suggesting more stable access function.

Table 1.jpg



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**Table 1. Primary and secondary outcomes by access type**

| Primary outcome (maturation)                         |                |            |            |         |
|------------------------------------------------------|----------------|------------|------------|---------|
|                                                      | Overall, n (%) | AVF, n (%) | AVG, n (%) | P-value |
| Mature                                               | 894 (89.8)     | 571 (87.7) | 323 (93.9) | 0.008   |
| Maturation failure                                   | 4 (0.4)        | 3 (0.5)    | 1 (0.3)    |         |
| Mature after augmentation                            | 97 (9.7)       | 77 (11.8)  | 20 (5.8)   |         |
| Secondary outcome (catheter insertion)               |                |            |            |         |
|                                                      | Overall, n (%) | AVF, n (%) | AVG, n (%) | P-value |
| No catheter insertion                                | 936 (93.8)     | 621 (95.1) | 315 (91.3) | 0.026   |
| Catheter insertion                                   | 62 (6.2)       | 32 (4.9)   | 30 (8.7)   |         |
| AVF; arteriovenous fistula, AVG; arteriovenous graft |                |            |            |         |

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Table 1.jpg

