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Modifiable Risk Factors Affecting the Outcome of Hemodialysis Graft

Jeeun Park*¹, Hye Ryoun Jang¹, Jung Eun Lee¹, Wooseong Huh¹, Yoon-Goo Kim¹, Ha Young Oh¹, Dae Joong Kim¹

¹Nephrology Division, Department of Medicine, Samsung Medical Center, Sungkyungwan University School of Medicine, Seoul, Korea, Republic Of

Background: Arterio-venous graft (AVG) for hemodialysis has poorer outcome than arterio-venous fistula (AVF) with its frequent stenosis and thrombosis. We investigated modifiable risk factors affecting the outcome of AVG.

Methods: A single-center cohort of 254 patients receiving AVG for hemodialysis access from September 2010 to October 2014 were included. Demographics, laboratory data, comorbidities, and medications were collected from the medical records. Surgical factors related to AVG operation including the type and diameter of connected vessels, graft site, and type of operation (elective or emergent) were also recorded. End points were the interval from initial access formation to any intervention intended to restore patency (primary patency, days) and the total access survival duration (secondary patency, days).

Results: Data of 225 patients were analyzed. During the follow-up period, 139 (62%) patients received intervention and 45 (20%) patients underwent permanent failure. Survival analyses using Kaplan-Meier method was shown in the figure. In multivariate analysis, primary patency duration was associated with RAS inhibitor (hazard ratio [HR] 1.67, 95% confidence interval [CI] 1.13-2.46), and upper arm graft (HR 0.62, 95% CI 0.40-0.94). Secondary patency duration was associated with serum albumin level (HR 0.28, 95% CI 0.13-0.61), diastolic blood pressure (BP) (HR 0.93, 95% CI 0.89-0.98) and warfarin (HR 5.80, 95% CI 2.04-16.46).

Conclusion: Patients' nutritional status reflected by serum albumin levels and diastolic BP could be modified for favorable outcome of AVG.

Keywords: AVG, Primary patency, Secondary patency