

# POSTER PRESENTATION

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## Predictors of Successful Conversion from Central Venous Catheters to Arteriovenous Fistulas or Grafts in Hemodialysis Patients

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### INTRODUCTION

Central venous catheters (CVCs) are frequently used for vascular access in patients initiating hemodialysis. However, long-term reliance on CVCs is associated with higher risks of infection, thrombosis, and central vein stenosis compared to arteriovenous fistulas (AVFs) or arteriovenous grafts (AVGs). Despite the clinical preference for AVFs or AVGs, the conversion success rate varies significantly, influenced by patient-related and vascular access characteristics.

### AIM

This study aims to identify and analyze the patient and vascular access characteristics that predict successful conversion from CVC to AVF or AVG, to inform clinical decisions and optimize outcomes in hemodialysis patients.

### METHODS

A retrospective cohort study was conducted, including hemodialysis patients who underwent attempted conversion from CVC to AVF or AVG between January 2018 and December 2022. Data on patient demographics, comorbid conditions, duration and reasons for CVC use, vascular anatomy, and outcomes of the first conversion attempt were collected from electronic health records.

Logistic regression analysis was used to identify predictors of conversion success, defined as functional use of AVF or AVG for dialysis for at least 90 days post-surgery, without requiring intervention. Kaplan-Meier analysis was employed to estimate the patency rates of successfully converted accesses.

### RESULTS

The study included 392 patients (mean age 62 years, 54% male, 46% diabetic). Successful conversion was achieved in 287 (73.2%) patients. Logistic regression analysis identified non-diabetic status (OR=2.45, 95% CI=1.55-3.89,  $p<0.001$ ), preoperative vein diameter  $\geq 4\text{mm}$  (OR=3.12, 95% CI=2.08-4.69,  $p<0.001$ ), and absence of peripheral vascular disease (OR=1.87, 95% CI=1.22-2.86,  $p=0.004$ ) as significant predictors of conversion success. Kaplan-Meier estimated 1-year patency rates for AVFs and AVGs were 82% and 78%, respectively.

### CONCLUSIONS

Successful conversion from CVC to AVF or AVG in hemodialysis patients is significantly predicted by non-diabetic status, adequate preoperative vein diameter, and absence of peripheral vascular disease. These findings underscore the importance of careful preoperative assessment and patient selection to improve conversion success rates and suggest that targeted interventions to optimize modifiable predictors could enhance vascular access outcomes. Future prospective studies are warranted to validate these predictors and assess the impact of tailored interventions on conversion success and long-term access patency.

