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Association of Clinic Vascular Access Monitoring Practices with Clinical Outcomes in Hemodialysis Patients

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Abstract
Background: Early identification of access dysfunctions may be associated with improved patient outcomes. We examined whether patient outcomes were associated with vascular access monitoring practices in an incident dialysis cohort. ***Methods:*** We conducted a national prospective cohort study and analyzed 363 hemodialysis patients who had a first permanent vascular access (arteriovenous fistula or graft) by 6 months after the start of dialysis. Multivariate methods were used to examine associations between monitoring practices and 6-month Kt/V (reaching Kt/V ≥1.2), access intervention, access failure, and 2-year septicemia and all-cause hospitalization and mortality. ***Results:*** Patients who received monitoring weekly or more often (49%) were more likely to have an access intervention (adjusted RH = 1.40, 95% CI, 1.07–1.84) than those who received monitoring less frequently. Additionally, patients treated at clinics that reported performing regular access monitoring (80% of patients) were less likely to be hospitalized for septicemia (IRR = 0.35, 95% CI, 0.21–0.61) or for any cause (IRR = 0.77, 95% CI, 0.60–0.99). There were no statistically significant differences between patients exposed to different vascular access monitoring practices in access failure, achievement of Kt/V, or survival. ***Conclusion:*** Frequent monitoring of dialysis access may initially increase the number of interventions but is beneficial to longer-term outcomes, including septicemia-related and all-cause hospitalization.

Introduction

The preservation of a permanent vascular access is of paramount importance in hemodialysis patient care. In the United States, a significant proportion of hospitalization and overall care costs in hemodialysis patients can be attributed to vascular access [1, 2]. Vascular access problems account for up to 25% of all dialysis patient hospital admissions, and these problems cost the health system USD 1 billion per year [3, 4]. Early identification of potential access dysfunction, prior to clinically significant stenosis or acute thrombosis, may reduce the morbidity and costs of repairing or replacing vascular accesses [5], thereby improving patient outcomes.

The Dialysis Outcomes Quality Initiative (KDOQI) clinical practice guidelines [6] issued by the National Kidney Foundation in 2000 recommend an 'organized monitoring approach with regular assessment of clinical parameters of the AV access and dialysis adequacy' for

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