Our aim was to determine factors that influence time to removal of tunneled hemodialysis catheter (THC), probability of repeat vascular access creation, and time to repeat vascular access.” Copeland et al (2019).

Abstract:

BACKGROUND: Our aim was to determine factors that influence time to removal of tunneled hemodialysis catheter (THC), probability of repeat vascular access creation, and time to repeat vascular access.

METHODS: The Optum Clinformatics Data Mart claims database was queried from 2011 to 2017 for patients who initiated hemodialysis with a THC. Time from initial arteriovenous fistula (AVF)/graft (AVG) to THC removal and time to repeat AVF/AVG were analyzed using Cox proportional hazards. The likelihood of repeat AVF/AVG was analyzed using logistic regression.

RESULTS: A total of 8941 vascular access met the inclusion criteria: 6913 (77%) AVF and 2028 (23%) AVG. Median follow-up was 595 days among AVF patients (range, 1-2543 days) and 579 days among AVG patients (range, 1-2529 days). Patients undergoing AVF were younger, more likely to be male, of white race, and obese. Patients undergoing AVF were also slightly less likely to have diabetes, cardiac arrhythmia, congestive heart failure, and peripheral vascular disease than patients undergoing AVG. At 90 days and at 180 days after
index access creation, significantly more patients who underwent index AVG had their THC removed compared with patients who underwent index AVF. By day 365, 78% of patients in both AVF and AVG had their THC removed. A total of 2550 (28.5%) patients underwent a repeat vascular access creation during the follow-up period: 30% of index AVF and 24% of index AVG. At 90 days, 180 days, and 365 days, significantly more patients in the index AVF group underwent a repeat vascular access creation than those in the index AVG group. Multivariate analysis demonstrated a significant interaction between vascular access type and age ≥70 years (P < .001) for time to THC removal, likelihood of repeat vascular access, and time to repeat vascular access. In the age <70 group, patients who underwent AVG were 60% more likely to have a shorter time to THC, had a 50.4% lower odds of repeat vascular access, and were 47% more likely to have a longer time to repeat vascular access compared with patients who underwent index AVF. In the age ≥70 group, patients who underwent AVG were 98% more likely to have a shorter time to THC removal, had 69.7% lower odds of repeat vascular access, and were 66% more likely to have a longer time to repeat vascular access.

CONCLUSIONS: Creation of AVG vs AVF significantly decreases the time to THC removal in dialysis-dependent patients, with a larger difference in patients aged ≥70 vs <70. Initial AVG was associated with lower odds of repeat vascular access and longer time to repeat vascular access. These results suggest that the dictum of "fistula first" is not appropriate for all patient populations and supports judicious use of AVG in achieving the more recent shift toward "catheter last."

You may also be interested in...

Personalised approach to vascular access for pregnant dialysis patients
Dialysis catheter inadvertently perforated the left innominate vein
Current status of dialysis vascular access in Japan

Reference:
Vascular access outcomes in patients initiating dialysis with a tunneled catheter | 3