In elderly hemodialysis patients initiating hemodialysis therapy with a catheter, the optimal vascular access selection depends on tradeoffs between shorter catheter dependence and less frequent interventions to make the vascular access (AVG) functional versus longer access patency and fewer interventions after successful use of the vascular access (AVF)” Lee et al (2018).

Abstract:

RATIONALE & OBJECTIVE: National vascular access guidelines recommend placement of arteriovenous fistulas (AVFs) over grafts (AVGs) in hemodialysis patients, but have not been comprehensively assessed in the elderly. We evaluated clinically relevant vascular access outcomes in elderly patients receiving an AVF or AVG after hemodialysis therapy initiation.

STUDY DESIGN: Retrospective cohort study using national administrative data.

SETTINGS & PARTICIPANTS: Claims data from the US Renal Data System of 9,458 US patients 67 years and older who initiated hemodialysis therapy from July 1, 2010, to June 30, 2011, with a catheter and received an AVF (n=7,433) or AVG (n=2,025) within the ensuing 6 months.

PREDICTOR: Arteriovenous access subtype, AVF or AVG.
OUTCOMES: Successful use of vascular access, interventions to make vascular access functional, duration of catheter dependence before successful use of vascular access, frequency of interventions, and abandonment after successful use of vascular access.

ANALYTICAL APPROACH: Multivariable logistic regression analysis was used to compare the need for intervention before successful use of AVFs and AVGs, and negative binomial regression was used to calculate the frequency of intervention after successful use of vascular access.

RESULTS: Unsuccessful use of vascular access within 6 months of creation was higher for AVFs versus AVGs (51% vs 45%; adjusted HR, 1.86; 95% CI, 1.73-1.99). Interventions to make vascular access functional were greater in AVFs versus AVGs (42% vs 23%; OR, 2.66; 95% CI, 2.26-3.12). AVFs had a lower 1-year abandonment rate after successful use compared with AVGs (OR, 0.71; 95% CI, 0.62-0.83) and required one-fourth fewer interventions after successful use (relative risk, 0.75; 95% CI, 0.69-0.81). Patients receiving an AVF had substantially longer catheter dependence before successful use than those receiving an AVG (median time, 3 vs 1 month; P<0.001).

LIMITATIONS: Residual confounding due to vascular access choice, restriction to an elderly population, and 1-year follow-up period.

CONCLUSIONS: In elderly hemodialysis patients initiating hemodialysis therapy with a catheter, the optimal vascular access selection depends on tradeoffs between shorter catheter dependence and less frequent interventions to make the vascular access (AVG) functional versus longer access patency and fewer interventions after successful use of the vascular access (AVF).

Reference:

doi: 10.1053/j.ajkd.2018.03.023.