

## **Use of peripherally inserted central catheters has expanded rapidly, but the consequences for patients who eventually require hemodialysis are undefined” McGill et al (2016).**

### Abstract:

**BACKGROUND AND OBJECTIVES:** Use of peripherally inserted central catheters has expanded rapidly, but the consequences for patients who eventually require hemodialysis are undefined.

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**DESIGN, SETTING, PARTICIPANTS, & MEASUREMENTS:** Our national, population-based analysis included 33,918 adult Medicare beneficiaries from the US Renal Data System who initiated hemodialysis with central venous catheters as their sole vascular access in 2010 and 2011. We used linked Medicare claims to identify peripherally inserted central catheter exposures and evaluate the associations of peripherally inserted central catheter placement with transition to working arteriovenous fistulas or grafts and patient survival using a Cox model with time-dependent variables.

**RESULTS:** Among 33,918 individuals initiating hemodialysis with a catheter as sole access, 12.6% had received at least one peripherally inserted central catheter. Median follow-up was 404 days (interquartile range, 103-680 days). Among 6487 peripherally inserted central catheters placed, 3435 (53%) were placed within the 2 years before hemodialysis initiation, and 3052 (47%) were placed afterward. Multiple peripherally inserted central catheters were placed in 30% of patients exposed to peripherally inserted central catheters. Recipients of peripherally inserted central catheters were more likely to be women and have comorbid diagnoses and less likely to have received predialysis nephrology care. After adjustment for clinical and demographic factors, peripherally inserted central catheters placed before or after hemodialysis initiation were independently associated with lower likelihoods of transition to any working fistula or graft (hazard ratio for prehemodialysis peripherally inserted central catheter, 0.85; 95% confidence interval, 0.79 to 0.91; hazard



ratio for posthemodialysis peripherally inserted central catheter, 0.81; 95% confidence interval, 0.73 to 0.89).

**CONCLUSIONS:** Peripherally inserted central catheter placement was common and associated with adverse vascular access outcomes. Recognition of potential long-term adverse consequences of peripherally inserted central catheters is essential for clinicians caring for patients with CKD.

Reference:

McGill, R.L., Ruthazer, R., Meyer, K.B., Miskulin, D.C. and Weiner, D.E. (2016) Peripherally Inserted Central Catheters and Hemodialysis Outcomes. Clinical Journal of the American Society of Nephrology. June 23rd..

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