Approximately one-third of hemodialysis patients who used tunneled CVCs during 1 to 2 years experienced complications” Poinen et al (2019).

Abstract:

RATIONALE & OBJECTIVE: Clinical practice guidelines discourage the use of central venous catheters (CVCs) for vascular access in dialysis. However, some patients have inadequate vessels for arteriovenous fistula creation or choose to use a dialysis catheter. The risks associated with CVC use and their relationship to patient age are poorly characterized.

STUDY DESIGN: Observational retrospective cohort study.

SETTING & PARTICIPANTS: Cohort of 1,041 patients older than 18 years from 5 Canadian dialysis programs who initiated outpatient maintenance hemodialysis therapy with a tunneled CVC between 2004 and 2012 and who had no creation of an arteriovenous fistula or arteriovenous graft.

EXPOSURES: Age, sex, body size, initiating dialysis therapy in the hospital, and comorbid conditions.

OUTCOMES: CVC-related procedures, hospitalization, and death.
ANALYTICAL APPROACH: Complications were reported as a cumulative risk at 1 and 2 years. Cox proportional hazards regression for recurrent events was used to evaluate risk factors for study outcomes.

RESULTS: At 1 year, risks for CVC-related bacteremia, malfunction, and central stenosis were 9%, 15%, and 2%, respectively. Risks for any CVC-related complication at 1 and 2 years were 30% and 38%, respectively. Death related to CVC complications occurred in 6 of 1,041 (0.5%) patients. Compared with patients younger than 60 years, patients aged 70 to 79 and those 80 years or older experienced lower rates of CVC complications: HRs of 0.67 (95% CI, 0.52-0.85; \(P = 0.001\)) and 0.69 (95% CI, 0.52-0.92; \(P = 0.01\)), respectively.

LIMITATIONS: This Canadian dialysis population may not be representative of populations in other countries. CVC use was not compared with other types of hemodialysis vascular access.

CONCLUSIONS: Approximately one-third of hemodialysis patients who used tunneled CVCs during 1 to 2 years experienced complications. Bacteremia occurred in ~9% of patients at 1 year and were the most common cause of CVC-related hospitalizations. CVC-related death was infrequent. This information could be used to communicate the risk for CVC complications to patients treated with this type of hemodialysis vascular access.

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