The aim of this review was to synthesize and evaluate what is known about catheter complications and prevention strategies in the PN population” Reitzel et al 92019).

Abstract:

Patients receiving parenteral nutrition (PN) as their primary source of nutrition are at high risk for both infectious and noninfectious catheter complications (catheter-related infections, catheter occlusion, and venous thrombosis). The aim of this review was to synthesize and evaluate what is known about catheter complications and prevention strategies in the PN population. Three electronic databases (Medline, Embase, and CINAHL) were screened for studies published between January 2012 and February 2019 regarding infectious and noninfectious catheter complications in patients receiving PN. Rates of infectious and noninfectious catheter complications, prevalence of causative pathogens, potential risk factors, and prevention strategies via the use of antimicrobial lock therapy (ALT) were assessed. Fifty-three catheter complication studies and 12 ALT studies were included. Studies were grouped by definition of complication: catheter-related bloodstream infections (CRBSI) or central line-associated bloodstream infections (CLABSI). Random effects summary rates per 1000 catheter days were 0.85 CRBSI episodes (95% CI 0.27-2.64) and 1.65 CLABSI episodes (95% CI 1.09-2.48). Use of taurolidine or ethanol ALT was efficacious in reducing infectious catheter complications; however, several studies had concerns for adverse mechanical complications. Potential risk factors for catheter complications were highly varied and often contradictory between studies. The rates of catheter complications were higher
among catheterized patients receiving PN compared with nationally reported rates of complications in all catheterized patients. Risk factors for catheter complications need to be better understood for targeted prophylactic use of ALT. Future studies are warranted; however, they should be conducted using more standardized definitions and criteria.

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