

Debate about whether certain antimicrobial agents traditionally considered vesicants increase the risk of catheter complications has led to uncertainty in venous catheter placement protocols” Keller et al (2018).

Abstract:

OBJECTIVES: Debate about whether certain antimicrobial agents traditionally considered vesicants increase the risk of catheter complications has led to uncertainty in venous catheter placement protocols. To understand whether patients requiring home-based outpatient parenteral antimicrobial therapy (OPAT) should receive peripheral catheters (such as midline catheters) versus central venous catheters, and to understand whether certain antimicrobial agents place home-based OPAT patients at higher risk for catheter complications, we investigated associations between antimicrobial agent(s) and catheter complications.

METHODS: We performed a prospective cohort study of patients requiring home-based OPAT discharged from two urban tertiary care academic medical centers, including telephone surveys and chart abstractions. Multivariable Poisson regressions were used to evaluate: (1) associations between antimicrobial agents traditionally considered vesicants, based on pH or osmolarity, and catheter complication rates, and (2) associations between antimicrobial agent and rates of catheter complications.

RESULTS: Vesicant antimicrobials defined using pH or osmolarity criteria were not associated with an increased rate of catheter complications (adjusted incidence rate ratio : 1.63, 95% confidence interval : 0.89-2.96). Vancomycin was associated with an increased rate of catheter complications, as was daptomycin (aIRR: 2.32 [95% CI: 1.20-4.46] and 4.45 [95% CI: 1.02-19.41], respectively). Staphylococcus aureus infections were also associated with an increased rate of catheter complications (aIRR: 2.13, 95% CI: 1.09-4.19), as were midline catheters (aIRR: 9.44, 95% CI: 2.12-41.97).

CONCLUSIONS: Our study supports recent guidance identifying vancomycin as a vesicant, among a subset of antimicrobial agents, and removal of pH criteria for identification of vesicants.



Reference:

Keller, S.C., Dzintars, K., Gorski, L.A., Williams, D. and Cosgrove, S.E. (2018) Antimicrobial Agents and Catheter Complications in Outpatient Parenteral Antimicrobial Therapy. *Pharmacotherapy*. March 1st. .

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