Diagnosis of intravascular catheter infection may be affected by the definition and procedures applied in the absence of blood culture data” Austin et al (2016).

Abstract:

Background: Diagnosis of intravascular catheter infection may be affected by the definition and procedures applied in the absence of blood culture data.

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Aim: To examine the extent to which different definitions of catheter infection and procedures for handling absent blood culture data can affect reported catheter infection rates.

Methods: Catheter infection rates were established in a cohort of hospitalized patients administered parenteral nutrition according to three clinical and four published definitions. Paired and unpaired comparisons were made using available case analyses, sensitivity analyses and intention-to-categorize analyses.

Findings: Complete data were available for each clinical definition (N=193), and there were
missing data (4.1–26.9%) for the published definitions. In an available case analysis, the catheter infection rate was 13.0–36.8% for the clinical definitions and 2.1–12.4% for the published definitions. For the published definitions, the rate was 1.6–32.1% in a sensitivity analysis and 11.4–16.9% in an intention-to-categorize analysis, with suggestion of bias towards a higher catheter infection rate in those with missing data, in keeping with the analyses of the clinical definitions. For paired comparisons, the strength of agreement between definitions varied from ‘poor’ (Cohen’s kappa <0.21) to ‘very good’ (Cohen’s kappa ≥0.81).

Conclusion: The use of different definitions of catheter infection and procedures applied in the absence of blood culture data produced widely different catheter infection rates, which could compromise measurements or comparisons of service quality or study outcome. As such, there is a need to establish and use a valid, consistent and practical definition.

Reference:


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