

Catheter-related Infection: Diagnosis, Prevention and Treatment

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Abstract

Introduction: Catheter infection continues to be a serious problem in critically ill patients. This review will examine the incidence, epidemiology, microbiology, diagnosis, risk factors for and treatment of catheter-related bloodstream infections. **Methods:** Relevant articles were culled from a Medline search and other review articles on catheter-related infection. Important abstracts presented within the past year were included in the review if the data had not been published in a peer-reviewed journal. **Results:** Catheter-related bloodstream infections (CRBSI) increase morbidity and the cost of care of patients. The predominant organisms associated with CRBSI are coagulase negative staphylococci, enterococci and *Staphylococcus aureus*. Diagnosis usually requires catheter removal and culture but newer techniques such as “differential time to positivity” may permit diagnosis of CRBSI in situ. Reducing risk factors for infection are important: education of house staff, use of the subclavian insertion site, skin preparation with chlorhexidine solutions, use of maximum barrier precautions during catheter insertion and catheter maintenance with chlorhexidine sponges. If infection rates are still high after institution of these measures, use of antiseptic or antibiotic-impregnated catheters should be considered. Treatment of CRBSI in critically ill patients mandates catheter removal and treatment with systemic antibiotics. **Conclusions:** The best treatment for CRBSI is prevention. Ongoing studies are evaluating the effectiveness of newer antiseptic catheters, the risk of developing antibiotic resistance when using antibiotic-impregnated catheters and the contribution of multiple interventions on the development of CRBSI.

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