

## **Which type of anti-infective-treated central venous catheters should be used?**

The following question was answered by a systematic review of the literature:  
When anti-infective-treated central venous catheters are used, which type of anti-infective-treated central venous catheter should be used?

This review is published in *Intensive Care Med.* 2007 Dec;33(12):2058-68. Epub 2007 Oct 17.

Anti-infective-treated central venous catheters: a systematic review of randomized controlled trials.

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**OBJECTIVE:** This systematic review assesses the effect of anti-infective-treated central venous catheters (CVCs) on catheter-related bloodstream infection (CRBSI) in the acute care setting. **METHODS:** Randomized controlled trials were retrieved from Medline and the Cochrane Library up to 15 January 2007. Two reviewers independently assessed trial quality and extracted data. Data for CRBSI were combined where appropriate, using a random effects model. The impact of the risk for CRBSI in the control group (baseline risk) on the benefit of anti-infective CVCs was studied by using meta-regression based on the binomial normal bivariate meta-analysis model. **RESULTS:** Twenty-one trials were included in the review. Mainly intensive care (IC) patients were studied. Eighteen trials showed that anti-infective CVCs reduced the risk of CRBSI. The number needed to treat (NNT) varied from 182 to 12, with baseline risks ranging from 1% to 10%. Nearly all trials had serious methodological shortcomings. Three trials comparing minocycline-rifampicin-treated catheters with antiseptic-treated catheters showed inconsistent results. One trial suggested that there is not any difference in CRBSI between heparin- and antiseptic-treated CVCs. **CONCLUSION:** Because the NNT is large when the baseline risk is low, the use of anti-infective-treated CVCs in the acute care setting should only be considered in situations in which background rates of CRBSI are high. The magnitude of benefit as calculated in this review should be interpreted with caution because of strong arguments in favor of a systematic overestimation of the effect. Which type of anti-infective catheter is most effective could not be established from the available data.