

Barrier precautions are used inconsistently by critical care clinicians during arterial catheter insertion in the ICU setting” Cohen et al (2015).

Abstract:

Objectives: Recent studies have shown that the occurrence rate of bloodstream infections associated with arterial catheters is 0.9–3.4/1,000 catheter-days, which is comparable to that of central venous catheters.

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In 2011, the Centers for Disease Control and Prevention published new guidelines recommending the use of limited barrier precautions during arterial catheter insertion, consisting of sterile gloves, a surgical cap, a surgical mask, and a small sterile drape. The goal of this study was to assess the attitudes and current infection prevention practices used by clinicians during insertion of arterial catheters in ICUs in the United States.

Design: An anonymous, 22-question web-based survey of infection prevention practices during arterial catheter insertion.

Setting: Clinician members of the Society of Critical Care Medicine.

Subjects: Eleven thousand three hundred sixty-one physicians, nurse practitioners, physician assistants, respiratory therapists, and registered nurses who elect to receive e-mails from the Society of Critical Care Medicine.

Interventions: None.

Measurements and Main Results: There were 1,265 responses (11% response rate), with 1,029 eligible participants after exclusions were applied. Only 44% of participants reported using the Centers for Disease Control and Prevention–recommended barrier precautions during arterial catheter insertion, and only 15% reported using full barrier precautions. The mean and median estimates of the incidence density of bloodstream infections associated with arterial catheters were 0.3/1,000 catheter-days and 0.1/1,000 catheter-days, respectively. Thirty-nine percent of participants reported that they would support mandatory use of full barrier precautions during arterial catheter insertion.

Conclusions: Barrier precautions are used inconsistently by critical care clinicians during arterial catheter insertion in the ICU setting. Less than half of clinicians surveyed were in compliance with current Centers for Disease Control and Prevention guidelines. Clinicians significantly underestimated the infectious risk posed by arterial catheters, and support for mandatory use of full barrier precautions was low. Further studies are warranted to determine the optimal preventive strategies for reducing bloodstream infections associated with arterial catheters.

Reference:

Cohen, D.M., Carino, G.P., Heffernan, D.S., Lueckel, S.N., Mazer, J., Skierkowski, D., Machan, J.T., Mermel, L.A. and Levinson, A.T. (2015) Arterial Catheter Use in the ICU: A National Survey of Antiseptic Technique and Perceived Infectious Risk. *Critical Care Medicine*. 43(11), p.2346-2353.

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