

"The present study aimed to describe the epidemiology of causative microorganisms of catheter-related infection and colonization according to the insertion site" Buetti et al (2020).



Abstract:

OBJECTIVES: Little is known on causative pathogens of intravascular catheters infection according to the catheter insertion site. The present study aimed to describe the epidemiology of causative microorganisms of catheter-related infection and colonization according to the insertion site. **DESIGN:** Multicenter observational study using data from four large randomized controlled trials investigating different prevention strategies in which extensive prospective high-quality data collection at catheter insertion and catheter removal was performed. **SETTING:** Twenty-five ICUs in France. **PATIENTS:** Patients were recruited from 2006 to 2014 as soon as they required a catheterization with a short-term central venous catheter or peripheral arterial catheter with an expected duration of use of more than 48 hours. We described the distribution of microorganisms in central venous catheter and arterial catheter-related bloodstream infections and colonization according to the insertion type (femoral vs nonfemoral) included in the four studies. **INTERVENTIONS:** None. **MEASUREMENTS AND MAIN RESULTS:** A total of 7,235 patients and 15,259 catheters were included. Among central venous catheter, the distribution of microorganisms associated with catheter-related bloodstream infection and colonization was significantly different between femoral and nonfemoral sites. Among central venous catheter catheter-related bloodstream infection, nonfermenting Gram-negative bacilli were more frequently detected at the femoral site (31% vs 4% for nonfemoral site; $p < 0.01$). After adjustment for confounding factors, the

femoral site was still associated with an increased risk for catheter-related bloodstream infection due to nonfermenting Gram-negative bacilli (odds ratio, 6.33; 95% CI, 1.59-25.28; $p < 0.01$). Among colonized arterial catheters, the distribution of microorganisms was significantly different between femoral and radial site ($p < 0.01$). Colonized arterial catheters due to nonfermenting Gram-negative bacilli were more frequently observed at the femoral site (20% vs nonfemoral site 12%; $p = 0.01$). CONCLUSIONS: The proportion of intravascular catheter infections due to nonfermenting Gram-negative bacilli was high for the femoral insertion site. Empirical antipseudomonal therapy should be considered if a femoral catheter-related bloodstream infection is suspected.

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Reference:

Buetti, N., Ruckly, S., Lucet, J.C., Perozziello, A., Mimos, O., Souweine, B. and Timsit, J.F. (2020) The Insertion Site Should Be Considered for the Empirical Therapy of Short-Term Central Venous and Arterial Catheter-Related Infections. *Critical Care Medicine*. February 20th. doi: 10.1097/CCM.0000000000004270. .

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