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Efficacy of Silver-Coating Central Venous Catheters

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Bach and coinvestigators from the University of Heidelberg compared silver-coated and uncoated double-lumen central venous catheters in a prospective, randomized, clinical trial among ICU patients after cardiac surgery.

Sixty-seven adult patients were prospectively randomized to receive either a silver-coated (S group, n=34) or an uncoated control (C group, n=33) DLC. Blood cultures were drawn at catheter removal, and removed catheters were analyzed

with quantitative cultures of three segments: the catheter tip, an intermediate section, and the subcutaneous portion. The frequency of colonization of at least one catheter segment was 52.9% for the silver-coated catheters and 57.6% for the control catheters ($P=.44$), without any significant differences in the colonization of corresponding catheter segments. Lower colony counts were found with the silver-coated catheters, but the difference was not significant. Pattern analysis after PFGE demonstrated that approximately 70% of the isolates found on the catheter tip were identical with those on the skin at the insertion site, whereas approximately 75%

were identical with those recovered from the hub. In 29% of colonized catheters, identical bacteria were found on the hub and the skin at the insertion site.

It was concluded that silver-coating did not significantly reduce bacterial catheter colonization. The skin around the insertion site must be regarded as the main source of organisms involved in catheter-related infections.

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