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## Use of In Vivo-Generated Biofilms from Hemodialysis Catheters To Test the Efficacy of a Novel Antimicrobial Catheter Lock for Biofilm Eradication In Vitro



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### ABSTRACT

This biofilm study was conducted to assess the in vitro activity of tetrasodium EDTA on catheters that had been routinely removed from hemodialysis patients at Leeds Teaching Hospitals Trust due to maturation of fistula. Catheters were screened by culture of through-catheter flush, and isolates were identified by standard methodologies; 20 isolates were found to be biofilm positive. Initial biofilm cell count levels averaged above  $10^5$  CFU/1-cm catheter section. Bacteria identified in the biofilms were gram-negative (1 isolate), gram-positive (11 isolates), or mixed species (8 isolates). After a 24-h lock, 40 mg of tetrasodium EDTA per ml was effective at eradicating the total biofilm viable count in almost all cases. The efficacy of tetrasodium EDTA as a catheter lock potentially shows that this agent could substantially reduce catheter-related infections and be used to treat patients with limited access.

This Article

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