Antimicrobial bathing for the prevention of central line–associated bloodstream infections in non-intensive care units: a scoping review

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Introduction

Daily chlorhexidine gluconate (CHG) bathing is an antimicrobial strategy with strong evidence for reducing infections in intensive care units (ICU) but effectiveness in other settings remains uncertain.

We evaluated evidence for the antimicrobial bathing to prevent central line–associated blood stream infections (CLABSI) in non-ICU settings.

Methods

Scoping review followed JBI guidance and the PCC framework. Databases searched included BDENF, CINAHL, Embase, LILACS, PubMed, SciELO, Scopus, and Web of Science.

Inclusion criteria: primary studies, conference abstracts, clinical trial registrations evaluating repeated antimicrobial bathing in clinical settings were included, with no language or date restrictions.

Two reviewers independently conducted study selection, screening, and full-text assessment. Extracted data were synthesised to summarise study characteristics and reported CLABSI outcomes.

Results

1125 studies screened → 77 full-text studies assessed → 53 studies excluded → 24 studies included

1 (4.2%) Clinical trial registration

11 (45.8%) Research papers

12 (50.0%) Conference abstracts

Most of all were prospective (n=23; 95.8%)

The sample sizes ranged from 14 to 2.292 participants

20 (83.3%) studies were in adults

4 (16.7%) studies were in paediatrics

All studies used **CHG** as the antimicrobial agent and implemented **daily bathing** (Table 1)

Table 1. Studies characteristics

Category	Variable	Results
Study design	RCTs	2 (8.3%)
	Quasi-experimental	11 (45.8%)
	Observational	11 (45.8%)
Clinical settings	Hematology/oncology	6 (25.0%)
	Bone marrow transplant / transplant	7 (29.2%)
	Medical/surgical	7 (29.2%)
	Long-term acute care	3 (12.5%)
	Hemodialysis unit	1 (4.2%)
Catheter type	Central venous catheters (CVCs)	23 (95.8%)
	Hemodialysis catheters	1 (4.2%)
Intervention (antimicrobial bathing)	CHG % not specified	12 (50.0%)
	CHG 2%	8 (33.3%)
	CHG 4%	2 (8.3%)
	CHG 2% and 4%	2 (8.3%)
Outcome: CLABSI (n=23)	Statistically significant reduction	8 (34.8%)
	Reduction without statistical significance / not reported	13 (56.5%)
	No reduction observed	2 (8.7%)

Conclusion

CHG bathing may reduce CLABSI in non-ICU settings but robust, well-designed studies are needed to confirm its effectiveness.

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