Percutaneous central venous catheter-related sepsis in the neonate: an analysis of the literature from 1990 to 1994

Trotter C W

Authors' objectives
To evaluate methods of reducing catheter-related sepsis (CRS) in high-risk neonates.

Searching
MEDLINE, CINAHL and Dissertation Abstracts International were searched from January 1990 to September 1994.

Study selection
Study designs of evaluations included in the review
The author does not state that any specific study designs were excluded.

Specific interventions included in the review
Any method used to reduce CRS.

Participants included in the review
High-risk neonates receiving parenteral nutrition through percutaneous central venous catheters were included.

Outcomes assessed in the review
The outcome was CRS.

How were decisions on the relevance of primary studies made?
The author does not state how the papers were selected for the review, or how many of the reviewers performed the selection.

Assessment of study quality
The author does not state that they assessed validity.

Data extraction
The author does not state how the data were extracted for the review, or how many of the reviewers performed the data extraction.

Methods of synthesis
How were the studies combined?
The studies were combined in a narrative review, with study characteristics presented in tabular format.

How were differences between studies investigated?
Different methods were discussed separately.

Results of the review
One randomised (double-blind) controlled trial (93 catheters in 70 neonates) and one prospective, non-random descriptive pilot study (26 central lines in 23 neonates) were included.

A low-dose vancomycin infusion (25 mg) added to the parenteral alimentation solution reduced CRS from 15% in the control group to 0% in the intervention group (p=0.004).
The CRS rate from national data was found to be comparable to the CRS rate when transparent dressings were used.

**Authors' conclusions**
Carefully designed and controlled studies evaluating appropriate catheter maintenance strategies are lacking in the literature. Nurses are in a unique position to develop hypotheses regarding these issues, and to identify the strategies that need to be studied to optimise patient outcome.

**CRD commentary**
Very little information is presented on the methods of this review. Literature searches were performed from 1990 onwards as the author states that she had previously reviewed literature published prior to 1990; however, no reference for this is provided.

**Implications of the review for practice and research**
There is a need for randomised controlled trials of methods to reduce CRS.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.