TITLE: Dedicated Central Lines for Delivery of Total Parenteral Nutrition: Safety and Guidelines

DATE: 24 January 2017

RESEARCH QUESTIONS

1. What is the clinical evidence regarding the safety of providing total parenteral nutrition via a dedicated central line?
2. What are the evidence-based guidelines regarding the delivery of total parenteral nutrition via a dedicated central line?

KEY FINDINGS

One non-randomized was identified regarding the safety of providing total parenteral nutrition via a dedicated central line. In addition, three evidence-based guidelines were identified regarding the delivery of total parenteral nutrition via a dedicated central line.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2017, Issue 1), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. Methodological filters were applied to limit retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies and guidelines. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2011 and January 9, 2017. Internet links were provided, where available.

The summary of findings was prepared from the abstracts of the relevant information. Please note that data contained in abstracts may not always be an accurate reflection of the data contained within the full article.
SELECTION CRITERIA

One reviewer screened citations and selected studies based on the inclusion criteria presented in Table 1.

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<th>Table 1: Selection Criteria</th>
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| Outcomes                    | Q1: Safety and harms (e.g., infection)  
Q2: Evidence-based guidelines regarding the delivery of total parenteral nutrition via a dedicated central line, including recommendations for dedicated line labelling. |
| Study Designs               | Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies, evidence-based guidelines |

RESULTS

Rapid Response reports are organized so that the higher quality evidence is presented first. Therefore, health technology assessment reports, systematic reviews, and meta-analyses are presented first. These are followed by randomized controlled trials, non-randomized studies, and evidence-based guidelines.

One non-randomized study and three evidence-based guidelines were identified regarding the delivery of total parenteral nutrition via a dedicated central line. No relevant health technology assessments, systematic reviews, meta-analyses, or randomized controlled trials were identified.

Additional references of potential interest are provided in the appendix.

OVERALL SUMMARY OF FINDINGS

One non-randomized study\(^1\) described central line-associated blood stream infections as they were reported in a longitudinal registry of patients receiving parenteral nutrition in their homes. The authors identified that patients with double lumen catheters had more infections than those with single lumen catheters or central or peripherally inserted catheters.\(^1\)

Three relevant evidence-based guidelines were identified.\(^2,4\) A single lumen catheter should be used for the administration of total parenteral nutrition.\(^2,3\) When multi-lumen catheters are used, one lumen should be dedicated for the administration of nutrition solution.\(^2,3\) The 2011 guideline from the Centers for Disease Control and Prevention indicates there was insufficient evidence at the time of the guideline development to recommend the need for a dedicated line for parenteral nutrition.\(^4\)
REFERENCES SUMMARIZED

Health Technology Assessments
No literature identified.

Systematic Reviews and Meta-analyses
No literature identified.

Randomized Controlled Trials
No literature identified.

Non-Randomized Studies


Evidence-Based Guidelines


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APPENDIX – FURTHER INFORMATION:

Clinical Practice Guidelines – Methodology Not Specified

See: #6, page 2

See: 7. Routes of administration of P.N., page 10

See: Central Line Selection, 3rd bullet, page 6