TITLE: Intravenous Infusion Pumps for Transfusion of Blood Products: Clinical Effectiveness and Guidelines

DATE: 14 July 2014

RESEARCH QUESTIONS

1. What is the clinical effectiveness of intravenous infusion pumps for transfusion of blood products?

2. What are the guidelines for the use of intravenous infusion pumps for transfusion of blood products?

KEY MESSAGE

One evidence-based guideline was identified regarding the use of intravenous infusion pumps for transfusion of blood products.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2014, Issue 6), University of York Centre for Reviews and Dissemination (CRD) databases, Canadian and major international health technology agencies, as well as a focused Internet search. No filters were applied to limit the retrieval by study type. The search was limited to English language documents published between Jan 1, 2010 and Jun 30, 2014. 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.

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 evidence-based guideline was identified regarding the use of intravenous infusion pumps for transfusion of blood products. No health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or non-randomized studies were identified regarding the clinical effectiveness of intravenous infusion pumps for transfusion of blood products.

Additional references of potential interest are provided in the appendix.

This report is an update to Intravenous Infusion Pumps for Transfusion of Blood Products: Clinical Effectiveness, Safety, and Guidelines, published August 2010.

OVERALL SUMMARY OF FINDINGS

One guideline\(^1\) by the Dutch Institute for Healthcare Improvement was identified. The guideline recommends the use of volume-controlled infusion pumps or syringe pumps for slow administration or small infusion volumes. Infusion pumps should only be used to administer those blood components that are indicated in the manufacturer’s specifications. The guideline recommends infusion pumps be checked by health care staff at least once an hour when transfusing erythrocytes. If requested, manufacturers must be able to provide evidence that their infusion pump does not result in hemolysis or damage to blood components.

No literature was identified regarding the clinical effectiveness of intravenous infusion pumps for transfusion of blood products.
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
No literature identified.

Guidelines and Recommendations

   See: Infusion Pumps and Syringe Pumps

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APPENDIX – FURTHER INFORMATION:

Guidelines and Recommendations – Methodology Uncertain

   See: VI. Infusion Pumps, page 4

   See: Sections on Infusion Rates, Mechanical Pumps, and Pressure Bags

   "Pump" and "Infusion Pump" mentioned throughout

   See: 6.4 Infusion Devices, page 28

   See: Pressure Infusion Devices

Laboratory Studies

   PubMed: PM21133931

   PubMed: PM21303369

Review Articles


Additional References