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

DATE: 30 March 2010

RESEARCH QUESTIONS:

1. What is the clinical effectiveness of intravenous infusion pumps for transfusion of blood products (red blood cells and intravenous immunoglobulin)?

2. What are the guidelines for use of intravenous infusion pumps for transfusion of blood products (red blood cells and intravenous immunoglobulin)?

METHODS:

A limited literature search was conducted on key health technology assessment resources, including PubMed, the Cochrane Library (Issue 3, 2010), University of York Centre for Reviews and Dissemination (CRD) databases, ECRI (Health Devices Gold), EuroScan, international health technology agencies, and a focused Internet search. The search was limited to English language articles published between 2005 and March 2010. Filters were applied to limit the retrieval to health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, controlled clinical trials, observational studies, and guidelines. 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:

HTIS 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, controlled clinical trials, observational studies, and evidence-based guidelines.
One controlled clinical trial was identified regarding the clinical effectiveness of intravenous infusion pumps for transfusion of blood products. No relevant health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, or observational studies were identified. No evidence-based guidelines were identified regarding the use of intravenous infusion pumps for transfusion of blood products. An additional article of potential interest can be found in the appendix.

**OVERALL SUMMARY OF FINDINGS:**

One clinical study observed the damage to red cells by two different infusion pumps. Packed red cells were run through both pumps and pre- and post-pumping samples were examined for potassium, free hemoglobin, and cell damage. No cell damage was observed in any sample. The authors of this study concluded that both pumps used were safe to use for red cell transfusion.
REFERENCES SUMMARIZED:

Health technology assessments
No literature identified

Systematic reviews and meta-analyses
No literature identified

Randomized controlled trials
No literature identified

Controlled clinical trials


Observational studies
No literature identified

Guidelines and recommendations
No literature identified

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APPENDIX – FURTHER INFORMATION:

Clinical practice guidelines


Note: see 5.3.7 Use of Infusion Pumps, page 42