TITLE: Thromboelastography for Major Trauma: Clinical and Cost-Effectiveness

DATE: 18 May 2011

RESEARCH QUESTIONS

1. What is the clinical effectiveness of thromboelastography for massive transfusion in trauma patients?

2. What is the cost-effectiveness of thromboelastography for massive transfusion in trauma patients?

KEY MESSAGE

While systematic review evidence is inconclusive, evidence from non-randomized studies suggests that thromboelastography may be an effective method of determining blood product requirements in trauma patients.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library (2011, Issue 4), 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. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2006 and May 5, 2011. 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.

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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 economic evaluations.

One systematic review and two non-randomized studies were identified regarding the clinical effectiveness of thromboelastography for massive transfusion in trauma patients. No health technology assessment reports, randomized controlled trials, and no literature was identified regarding the cost-effectiveness of thromboelastography for massive transfusion in trauma patients. Additional references of potential interest can be found in the appendix.

OVERALL SUMMARY OF FINDINGS

The identified systematic review\(^1\) compared the benefits and harms of transfusions guided by thromboelastography (TEG) versus standard treatment in patients with severe bleeding. No statistically significant effect on overall mortality was found, but application of a transfusion strategy guided by TEG appeared to reduce the amount of bleeding. Authors concluded that additional research is needed to determine the significance of TEG for patients presenting with severe bleeding.

The two non-randomized studies\(^2,3\) examined the use of TEG to evaluate coagulation in trauma patients. One study\(^2\) found that TEG assays could assess several parameters of blood composition including coagulopathy, platelet dysfunction, and hyperfibrinolysis at an early stage posttrauma and help healthcare workers identify appropriate interventions for the patient. The second study\(^3\) found that TEG was a more accurate indicator of blood product requirements compared to traditional methods and the authors concluded that TEG can be used as a tool to guide blood transfusion requirements.

No literature was identified regarding the cost-effectiveness of TEG for massive transfusion in trauma patients.
REFERENCES SUMMARIZED

Health technology assessments
No literature was identified.

Systematic reviews and meta-analyses


Randomized controlled trials
No literature was identified.

Non-randomized studies


Economic evaluations
No literature was identified.

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APPENDIX – FURTHER INFORMATION:

Review articles


Case Studies


Ongoing clinical trials

Additional references
