TITLE: Thrombolytics for Pre-Hospital ST Segment Elevation Myocardial Infarction Patients: Clinical Effectiveness

DATE: 23 January 2017

RESEARCH QUESTION

What is the clinical effectiveness of thrombolytics for pre-hospital ST segment elevation myocardial infarction patients?

KEY FINDINGS

Two non-randomized studies were identified regarding the clinical effectiveness of thrombolytics for pre-hospital ST segment elevation myocardial infarction patients.

METHODS

A limited literature search was conducted on key resources including PubMed, The Cochrane Library, 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, and non-randomized studies. Where possible, retrieval was limited to the human population. The search was also limited to English language documents published between January 1, 2012 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.
**Table 1: Selection Criteria**

<table>
<thead>
<tr>
<th>Population</th>
<th>Patients with ST segment elevation myocardial infarction (STEMI) in the pre-hospital setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td>Thrombolytics (e.g., tissue plasminogen activators [alteplase, reteplase, tenecteplase], anistreplase, streptokinase, urokinase)</td>
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<tr>
<td>Comparator</td>
<td>No thrombolytics</td>
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<tr>
<td>Outcomes</td>
<td>Clinical effectiveness, mortality</td>
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<tr>
<td>Study Designs</td>
<td>Health technology assessments, systematic reviews, meta-analyses, randomized controlled trials, non-randomized studies</td>
</tr>
</tbody>
</table>

**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 and non-randomized studies.

Two non-randomized studies were identified regarding the clinical effectiveness of thrombolytics for pre-hospital ST segment elevation myocardial infarction patients. 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**

Two non-randomized studies\(^1\)\(^2\) were identified regarding thrombolytics for pre-hospital ST segment elevation myocardial infarction (STEMI) patients. The authors of one study\(^1\) examining long-term survival of STEMI patients concluded that thrombolysis resulted in a significant survival benefit at 28 days, one year, five years, 10 years, and 15 years when compared with no thrombolysis. In another study\(^2\), patients with suspected STEMI received electrocardiograms performed by emergency medical personnel. A diagnosis of STEMI was confirmed by a physician and the patients then received either thrombolytic therapy or primary percutaneous coronary intervention (PPCI).\(^2\) The mean time to treatment was 32 minutes for the thrombolysis group and 76 minutes for the PPCI group.\(^2\) The overall mortality rates were similar between treatment groups.\(^2\)
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

   PubMed: PM25715964

   PubMed: PM22494815

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APPENDIX – FURTHER INFORMATION:

Previous CADTH Reports


Systematic Reviews – Alternate Comparator


Non-Randomized Studies – Alternate Intervention


Clinical Practice Guidelines – Uncertain Methodology


Review Articles


Additional References


Case Series
