TIMI grade 3 flow and reocclusion after intravenous thrombolytic therapy: a pooled analysis

Barbagelata N A, Granger C B, Oqueli E, Suarez L D, Borruel M, Topol E J, Califf R M

Authors' objectives
To review the effectiveness of intravenous thrombolytic therapy in the treatment of acute myocardial infarction (MI).

Searching
MEDLINE was searched (search dates unclear), as were abstracts from the American Heart Association and American College of Cardiology meetings (from 1988 to 1994). Reference lists of angiographic study reports and related review articles were also examined.

Study selection
Study designs of evaluations included in the review
Prospective studies with 20 patients enrolled, which reported the total number of patients treated and who underwent angiography.

Specific interventions included in the review
Intravenous thrombolysis with accelerated and standard-dose tissue-plasminogen activator (TPA), anisoylated plasminogen streptokinase activator complex (APSAC) and streptokinase.

Participants included in the review
Patients with acute MI and ST-segment elevation (patient criteria are not stated clearly).

Outcomes assessed in the review
Thrombolysis in MI (TIMI) grade 3 flow and reocclusion rates, defined as angiographically-documented occlusion of an infarct-artery that had been patent at a 90-minute angiogram.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, apart from that the studies had to meet predefined selection criteria, or how many of the authors performed the selection.

Assessment of study quality
The authors do not state that they assessed validity.

Data extraction
The authors do not state how the data were extracted for the review, or how many of the authors performed the data extraction.

Methods of synthesis
How were the studies combined?
Point estimate of patency and 95% confidence intervals were calculated.

How were differences between studies investigated?
Formal statistical analyses for differences were not performed for point estimates of patency. The pooled rates of reocclusion were compared for statistical significance using the chi-squared test.

Results of the review
TIMI flow analysis: 15 studies and 5,475 angiographic observations. Reocclusion: 27 studies and 3,147 angiographic observations.

The pooled data show the rate of early TIMI grade 3 flow was lowest with streptokinase (31.5% at 90 minutes), highest with accelerated TPA (57.1 and 63.2%), and intermediate with (and similar) for standard-dose TPA (39.5 and 50.2%) and APSAC (40.2 and 50.1%) at 60 and 90 minutes. Overall reocclusion with standard dose TPA was 11.8% versus 6.0% for accelerated TPA, 4.2% for streptokinase and 3.0% for APSAC.

**Authors' conclusions**
Accelerated TPA is the most effective agent to establish early (90 minute) TIMI grade 3 flow.

**CRD commentary**
Little information is presented on the individual studies included in this review, particularly in terms of patient characteristics and study design: some studies are randomised and some are non-randomised. The results of this review are based on all studies, irrespective of study design and, therefore, the validity of the conclusions are questionable.

**Bibliographic details**

**PubMedID**
9060794

**Indexing Status**
Subject indexing assigned by NLM

**MeSH**
Anistreplase /therapeutic use; Coronary Angiography; Humans; Myocardial Infarction /drug therapy /physiopathology; Plasminogen Activators /administration & dosage; Recurrence; Regional Blood Flow; Streptokinase /administration & dosage; Thrombolytic Therapy; Tissue Plasminogen Activator /administration & dosage; Treatment Outcome; Vascular Patency

**AccessionNumber**
11997000352

**Date bibliographic record published**
31/01/1998

**Date abstract record published**
31/01/1998

**Record Status**
This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.