Platelet glycoprotein IIb/IIIa receptor antagonists in cardiovascular disease

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Authors’ objectives
To review the effectiveness of platelet glycoprotein IIb/IIIa receptors in cardiovascular disease.

Searching
The authors searched the MEDLINE database (1993-1998) for English language publications using the search headings of 'platelet glycoprotein IIb/IIIa', 'unstable angina', 'myocardial infarction', and 'percutaneous transluminal coronary angioplasty'. The authors also searched the reference lists of selected articles and for abstracts and presentations from major national and international cardiology meetings through November 1998.

Study selection
Study designs of evaluations included in the review
Randomised controlled trials (RCTs) with more than 500 participants.

Specific interventions included in the review
Intravenous platelet glycoprotein IIb/IIIa (abciximab, eptifibatide, and tirofiban at approved doses) and placebo.

Participants included in the review
Patients undergoing percutaneous intervention.

Outcomes assessed in the review
Death or non-fatal myocardial infarction at 30 days.

How were decisions on the relevance of primary studies made?
The authors do not state how the papers were selected for the review, or how many of the authors performed the selection.

Assessment of study quality
The authors assessed data validity (including publication or presentation venue) but the method is not reported. The authors do not state how the papers were assessed for validity, or how many of the authors performed the validity assessment.

Data extraction
The authors do not state who, or how many of the authors, performed the data extraction.

data were extracted for the categories of: approved indication and dose, trial identification, number of participants, type of IIb/IIIa treatment, comparison group’s treatment, results of treatment for intervention and control group at 30 days, and the odds ratio for the individual trial with 95% confidence interval.

Methods of synthesis
How were the studies combined?
A pooled odds ratio (OR) was calculated with 95% confidence intervals (CIs).

How were differences between studies investigated?
The authors do not state how differences between the studies were investigated.
Results of the review
Ten RCTs were included in the review with 32,735 participants. The reported RCTs were trials with at least 1,000 participants. Six trials reviewed percutaneous coronary intervention and 4 trials reviewed acute coronary syndromes.

Odds ratios of death or myocardial infarction at 30 days range from 0.42 to 0.84 for the drugs in the review.

In patients with the acute coronary syndromes, the odds ratios for death or myocardial infarction at 30 days ranged from 0.70 to 0.89. The pooled OR for all 10 trials was 0.79 (95% CI: 0.73, 0.85) which was statistically significant.

The data for oral agents for chronic GP IIb/IIIa receptor antagonism have not been studied sufficiently and the relative efficacy of the platelet glycoprotein IIb/IIIa receptor antagonists remains to be determined.

No increase in intracerebral hemorrhage was observed with GB IIb/IIIa receptor antagonists. Most bleeding occurred in patients who underwent percutaneous intervention. The majority of these patients reported bleeding events involving vascular access puncture sites. Thrombocytopenia occurs infrequently with abciximab and tirofiban. No increase in the incidence of thrombocytopenia was observed in eptifibatide-treated patients compared with those who received placebo.

Authors' conclusions
For patients undergoing percutaneous revascularisation, these agents have demonstrated efficacy in reducing death, myocardial infarction, or urgent re-intervention.

CRD commentary
The authors have clearly stated their research question and some inclusion but not exclusion criteria. The literature search is good but the authors may have missed studies published outside the United States by restricting the searches to the MEDLINE database and searching for only English language publications.

The quality of the included studies was not formally assessed and the authors have not reported on how the articles were selected, or how many of the reviewers were involved in the data selection and extraction.

The data extraction is reported in tables and text and the statistical pooling was appropriate although the method for pooling was not reported. There were no tests for heterogeneity but the authors have discussed several methodological and data limitations in the review.

The authors conclusions appear to follow from the results but should be viewed with caution because of the stated methodological limitations of the review.

Implications of the review for practice and research
The authors did not state any implications for further research or practice, other than waiting for the results of ongoing trials in order to make determinations about the efficacy of administration in different treatment situations.

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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.