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Percutaneous vascular interventions versus intravenous thrombolytic treatment for acute ischaemic stroke

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Randomised trials have shown that percutaneous vascular interventions are superior to usual care in patients with stroke due to large artery occlusion. We have searched the literature for studies comparing percutaneous vascular interventions with intravenous thrombolytic treatment in patients with acute ischaemic stroke.

Objectives

The objective of our review¹ was to assess the effectiveness and safety of percutaneous vascular interventions compared with intravenous thrombolytic treatment for acute ischaemic stroke.

Search Methods

We searched the Cochrane Stroke Group Trials Register (last search: August 2018). In addition, in September 2017, we searched the following electronic databases: CENTRAL, MEDLINE, EMBASE, Science Citation Index; Stroke Trials Registry, and ClinicalTrials.gov.

Selection Criteria

Randomised controlled trials that directly compare a percutaneous vascular intervention with intravenous thrombolytic treatment in people with acute ischaemic stroke.

Data Collection and Analysis

Two review authors applied the inclusion criteria, extracted data, and assessed risk of bias. We obtained both published and unpublished data. We assessed the quality of the evidence using the GRADE approach.

Main Results

We included four trials with 450 participants²⁻⁵. Data on functional outcome and death at end of follow-up were available for 443 participants from three trials.³⁻⁵

Compared with intravenous thrombolytic therapy, percutaneous vascular intervention did not improve the proportion of participants with good functional outcome at end of follow-up (modified Rankin Scale score 0 to 2 at 3 months, risk ratio (RR) 1.01, 95% confidence interval (CI) 0.82 to 1.25, $P=0.92$; Figure). The quality of evidence was moderate (because outcome assessment was blinded, but not the treating physician or participants).

There was also no reduction in the proportion of participants who died in the percutaneous vascular intervention group (RR 1.34, 95% CI 0.84 to 2.14, $P=0.21$), and no difference in the proportion of participants with symptomatic intracranial haemorrhage (RR 0.99, 95% CI 0.50 to 1.95, $P=0.97$). The quality of evidence was low (because confidence intervals were wide).

Authors' Conclusions

We found no evidence that percutaneous vascular interventions are superior to intravenous thrombolytic treatment in patients with acute ischaemic stroke.

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Disclosures

KBS is currently employed by F. Hoffmann-La Roche (Roche Norge AS). The data included in this review are based on research done before this employment and was not influenced by F. Hoffmann-La Roche by any means. The views expressed in this review are the personal views of KBS and should not be understood or quoted as being made on behalf of or reflecting the position of F. Hoffmann-La Roche.

The other authors report no conflicts.

Footnotes

This paper is based on a Cochrane Review.¹ Cochrane Reviews are regularly updated as new evidence emerges and in response to feedback. The Cochrane Library should be consulted for the most recent version of the review.

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Figure legend

Figure. Odds ratio of good outcome (modified Rankin Scale score 0-2) in patients with acute ischaemic stroke treated with percutaneous vascular interventions versus intravenous thrombolytic treatment

