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[Intervention Review]

# Piracetam for acute ischaemic stroke

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## ABSTRACT

### Background

Piracetam has neuroprotective and antithrombotic effects that may help to reduce death and disability in people with acute stroke. This is an update of a Cochrane Review first published in 1999, and previously updated in 2006 and 2009.

### Objectives

To assess the effects of piracetam in acute, presumed ischaemic stroke.

### Search methods

We searched the Cochrane Stroke Group Trials Register (last searched 15 May 2011), the Cochrane Central Register of Controlled Trials (CENTRAL) (*The Cochrane Library* 2011, Issue 2), MEDLINE (1966 to May 2011), EMBASE (1980 to May 2011), and ISI Science Citation Index (1981 to May 2011). We also contacted the manufacturer of piracetam to identify further published and unpublished studies.

### Selection criteria

Randomised trials comparing piracetam with control, with at least mortality reported and entry to the trial within three days of stroke onset.

### Data collection and analysis

Two review authors extracted data and assessed trial quality and this was checked by the other two review authors. We contacted study authors for missing information.

### Main results

We included three trials involving 1002 patients, with one trial contributing 93% of the data. Participants' ages ranged from 40 to 85 years, and both sexes were equally represented. Piracetam was associated with a statistically non-significant increase in death at one month (approximately 31% increase, 95% confidence interval 81% increase to 5% reduction). This trend was no longer apparent in the large trial after correction for imbalance in stroke severity. Limited data showed no difference between the treatment and control groups for functional outcome, dependence or proportion of patients dead or dependent. Adverse effects were not reported.

### Authors' conclusions

There is some suggestion (but no statistically significant result) of an unfavourable effect of piracetam on early death, but this may have been caused by baseline differences in stroke severity in the trials. There is not enough evidence to assess the effect of piracetam on dependence.

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## PLAIN LANGUAGE SUMMARY

### **Piracetam for acute ischaemic stroke**

Ischaemic stroke is the third leading cause of death in developed countries, and the first leading cause of long-term disability in survivors. Piracetam is a drug which has been marketed by drug companies in several countries for many years as a 'nootropic' agent: a drug which has metabolic activity in the human brain. Experiments in animals suggest that piracetam could have beneficial effects in patients with acute stroke. The efficacy and safety of piracetam in patients with acute stroke have not yet been proven. There have been a number of randomised controlled trials of piracetam given to patients within 48 hours of the onset of their stroke. Data from three trials, involving 1002 patients, were available for this review, but almost all came from a single study. The data reviewed did not provide conclusive evidence about the effects of piracetam for acute stroke. One additional, large study has been conducted and interrupted by the manufacturer after some preliminary analyses were carried out, but the results have not been made available to the scientific community.