Vinpocetine for Acute Ischemic Stroke

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Vinpocetine, a vasoactive vinca alkaloid, is claimed to be a neuroprotectant due to its sodium and calcium channel blocker and antioxidant effects. Vinpocetine decreased the size of cerebral infarction after middle cerebral artery occlusion in rats and mice. In controlled human studies, vinpocetine increased cerebral perfusion and oxygen extraction and prevented the worsening of attention in patients with multiple cerebral infarcts. Vinpocetine has been used to treat stroke in several countries in Europe (eg, Hungary, Poland, Germany, and Russia) and in Asia (eg, China and Japan).

Objective
The objective of this study was to determine if vinpocetine treatment decreases the rate of early (within 1 month) and late (between 3 and 6 months) case fatality and dependency if administered within 2 weeks of ischemic stroke onset.

Search Strategy
We searched the Cochrane Stroke Group Trials Register, MEDLINE (1966 to February 2007), and Scopus (1960 to February 2007). We also searched the Internet Stroke Center.

Figure. A, The effect of vinpocetine on death or dependency at 1 month after stroke. B, The effect of vinpocetine on case fatality at 1 month after stroke.

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Stroke Trials Registry, Google Scholar, the science-specific search engine Scirus, and Wanfang Data, the leading information provider in China. We contacted researchers in the field and 4 pharmaceutical companies that manufacture vinpocetine. Searches are complete to February 2007.

Selection Criteria
Selection criteria were unconfounded randomized trials of vinpocetine compared with placebo or any other reference treatment in people with acute ischemic stroke. Trials were included if treatment started no later than 14 days after stroke onset.

Data Collection and Analysis
Two reviewers independently applied the inclusion criteria. One reviewer extracted the data that was then checked by the second reviewer. Trial quality was assessed. The primary outcome measure was death and dependency.

Main Results
Two trials involving 40 and 30 patients were included. Data of 63 patients were reported in the 2 trials combined. For early outcome (3 to 4 weeks after stroke), there was no significant difference between the treatment and control groups in death or dependency if dependency was measured by the modified Rankin Scale (Peto OR: 0.44; 95% CI: 0.15 to 1.27; Figure A) or by the Barthel score (Peto OR: 0.52; 95% CI: 0.11 to 2.54). Data on death or dependency at 3 months were available only in the study with 30 patients, and there was no statistically significant difference between the treatment and control groups when dependency was measured by the modified Rankin Scale (Peto OR: 0.34; 95% CI: 0.06 to 1.79) or by the Barthel score (Peto OR: 0.63; 95% CI: 0.10 to 4.15). There was no statistically significant difference between the groups in case fatality (Peto OR: 7.94, 95% CI: 0.47 to 133.26 at 1 month, Figure B; Peto OR: 2.05, 95% CI: 0.20 to 21.36 at 3 months). No adverse effects were reported.

Reviewers’ Conclusions
The CIs for the outcome measures were wide and included the possibility of both significant benefit and significant harm. Therefore, there is no evidence to support the routine use of vinpocetine in all patients with acute ischemic stroke. Further trials are needed to decide if the routine application of vinpocetine decreases case fatality and the proportion of dependent survivors in acute ischemic stroke. This is a brief summary of our review with the full text available in the Cochrane Library.1

Disclosures
One of the reviewers (DB) was supported by an unrestricted travel grant for a Cochrane training course, and both reviewers participated in clinical studies sponsored by one of the manufacturers of vinpocetine (Gedeon Richter Ltd, Budapest, Hungary). The company did not have any influence on selection of subject, on the design, conduct, analysis and reporting of this systematic review.

Reference

Key Words: ischemic stroke ■ vinpocetine ■ systematic review
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