

Section Editor: Graeme J. Hankey, MD, FRCP

Piracetam for Acute Ischemic Stroke

Stefano Ricci, MD; Maria Grazia Celani, MD; Teresa Anna Cantisani, MD; Enrico Righetti, MD

Piracetam is a drug which has been marketed in several countries for many years as a “nootropic” agent (that is, a drug which has metabolic activity on human brain), and for the treatment of myoclonus. Recently, a Cochrane review has been published on efficacy of piracetam on ameliorating language in aphasic stroke patients; the drug has been reconsidered for acute stroke treatment as well.

Objectives

The objective of this review was to assess the effects of piracetam in acute presumed ischemic stroke.

Selection Criteria

Randomized trials comparing piracetam with control, with at least mortality reported and entry to the trial within \approx 48 hours of stroke onset.

Data Collection and Analysis

Two reviewers (S.R., M.G.C.) extracted data and assessed trial quality, and this was checked by the other 2 reviewers. Study authors were contacted for missing information.

Main Results

Three trials involving 1002 people were included, with 1 trial contributing 93% of the data. Participants' ages ranged from 40 to 85, and both sexes were equally represented. Piracetam was associated with a statistically nonsignificant increase in death at 1 month (\approx 31% increase, 95% CI 81% increase to 5% reduction; Figure). 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, dependency or proportion of patients dead or dependent. Adverse effects were not reported.

Discussion

The results of this review do not show any statistically significant effect of piracetam on early or late death. There is, however, an unfavorable trend toward early death in the Piracetam in Acute Stroke Study (PASS), which accounted for 93% of data; this may well be attributable to an imbalance in stroke severity between the 2 groups, as stated by the authors; however, very severe patients were not included in this study, and therefore the

imbalance in severity is based on a difference in a neurological scale which, in itself, is not statistically significant ($P=0.2$), and the trend toward an increased risk of early death among piracetam allocated patients is a concern. Post-hoc subgroup analysis of the PASS study suggests a benefit of very early piracetam use, a hypothesis which has been tested in PASS II. However, this systematic review cannot be updated to include these results, because they will not become available: we tried to obtain data from the PASS II study; unfortunately, the drug company who owned the interim results eventually refused to give us the trial data for updating this review.

It seems very unlikely that any further trial, seeking reliably to establish the effect of this drug in acute stroke, comparing piracetam with control, will now be conducted.

Implications for Practice

Trials on piracetam do not provide definite evidence of a beneficial or harmful effect on death in acute ischemic stroke. The available data do not support the routine use of piracetam in the management of patients with acute ischemic stroke.

Implications for Research

If the data from PASS II were made available, it might be possible to reassess the need for further randomized controlled trials of this agent in acute stroke. However, for now, the available evidence does not suggest that further controlled trials of piracetam in acute stroke are justified.

Note: The full text of this review is available in the Cochrane Library (for subscribers <http://www.mrw.interscience.wiley.com/cochrane/clsysrev/articles/CD003436/frame.html>). The full article should be cited as: Ricci S, Celani MG, Cantisani TA, Righetti E. Piracetam for acute ischemic stroke. *The Cochrane Database of Systematic Reviews*, 2006 issue 2.

Acknowledgments

We are grateful to the Cochrane Neurological Network and to the Chinese Cochrane Group for their help in the translation of the Chinese article. UCB sent us data on PASS study.

Disclosures

None.

KEY WORD: acute ischemic stroke ■ piracetam

Received April 13, 2006; accepted May 1, 2006.

From the UOCD Neurologia e Ictus, USL 2 dell' Umbria, Perugia, Italy; and Neurofisiopatologia (T.A.C.), Azienda Ospedaliera, Perugia, Italy.

Correspondence to Dr S. Ricci, UOCD Neurologia e Ictus, IUSL 2, Via Cestellini, 06087 Perugia, Italy. E-mail istitaly@unipg.it

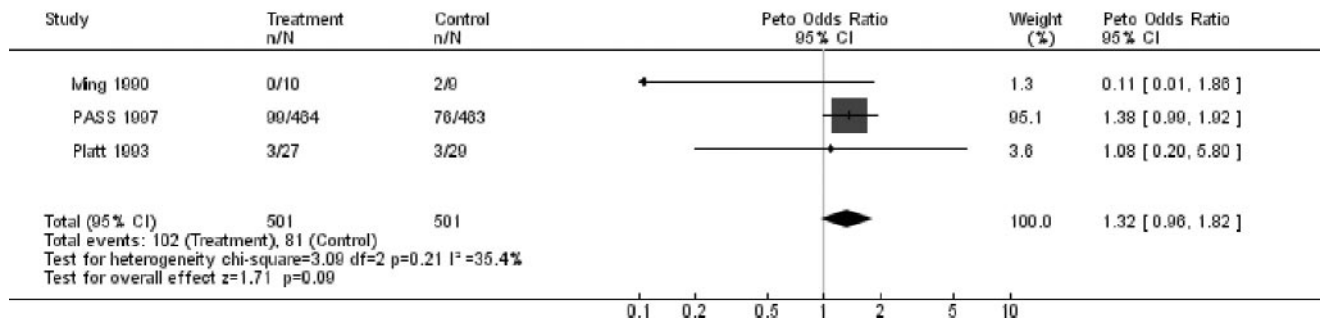
(*Stroke*. 2006;37:2191-2192.)

© 2006 American Heart Association, Inc.

Stroke is available at <http://www.strokeaha.org>

DOI: 10.1161/01.STR.0000231643.42650.a9

Review: Piracetam for acute ischaemic stroke
 Comparison: 01 piracetam vs control
 Outcome: 01 death at approx. 1 month



Piracetam for Acute Ischemic Stroke

Graeme J. Hankey, Stefano Ricci, Maria Grazia Celani, Teresa Anna Cantisani and Enrico Righetti

Stroke. 2006;37:2191-2192; originally published online June 22, 2006;

doi: 10.1161/01.STR.0000231643.42650.a9

Stroke is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231

Copyright © 2006 American Heart Association, Inc. All rights reserved.

Print ISSN: 0039-2499. Online ISSN: 1524-4628

The online version of this article, along with updated information and services, is located on the World Wide Web at:

<http://stroke.ahajournals.org/content/37/8/2191>

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in *Stroke* can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the [Permissions and Rights Question and Answer](#) document.

Reprints: Information about reprints can be found online at:
<http://www.lww.com/reprints>

Subscriptions: Information about subscribing to *Stroke* is online at:
<http://stroke.ahajournals.org/subscriptions/>