

Benefit of neuroprotection in acute ischaemic stroke, shall we dare to hope?

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Calcium influx is the final pathway of death in hypoxia. Numerous randomized clinical trials have been conducted to assess the effect of calcium channel blockade for neuroprotection in acute ischaemic stroke but the majority of them failed to show any benefit.

What is the study under consideration?

"Ginsenoside-RD improves the outcome of acute ischaemic stroke", is the randomized double blind placebo-controlled multicenter trial by Liu et al which described that Ginsenoside-RD, a receptor operated calcium channel antagonist that improved the functional outcome in patients with acute ischaemic stroke.

What was the study design?

This study enrolled patients aged 18-75 years with the clinical diagnosis of primary ischaemic stroke, who presented within 72 hours after onset of the symptoms. They selected the patients with NIHSS score of 5-22 (moderate strokes). These patients received the daily infusion of Ginsenoside-RD or placebo for 14 days.

What was the outcome?

They noticed that Ginsenoside- RD markedly improved the mRs at 3 months with no short term improvement of neurological function in non-lacunar stroke. For lacunar stroke they reported that the improvement of short term neurological function determined by NIHSS score was present on day 15.

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What were the conclusions?

They concluded that Ginsenoside-RD has its early effect on free radical scavenging pathway by protecting the mitochondria, restoring the energy and inhibiting the apoptosis. It has late anti-inflammatory effect as well. This agent does not cause hypotension.

Why is this study important?

Of the 15 million stroke deaths, two thirds occur in developing countries. We have only one option for the reduction of disability from acute stroke in the form of tissue plasminogen activator which has a very narrow window period of 3 to 4.5 hours with risk of bleed as well. We need safer agents with longer therapeutic windows to treat more patients. Ginsenoside-RD has a long window period of 72 hours which will enable more patients to fall in this window. It is interesting that this agent is showing neuroprotective effects, since most trials have hitherto failed to do so. It does raise the hope for neuroprotection in stroke.

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Recommended Reading

1. Liu X, Wang L, Wen A, Yang J, Yan Y, Song Y, et al. Ginsenoside-Rd improves outcome of acute ischaemic stroke - a randomized, double-blind, placebo-controlled, multicenter trial. *Eur J Neurol* Jun; 19: 855-63.