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Citicoline in the treatment of acute ischaemic stroke: an international, randomized, multicentre, placebo-controlled study (ICTUS trial) Is the use of Citicoline is beneficial for acute ischaemic stroke?

Fauzia Nomani, Ayeesha Kamran Kamal

Stroke is the leading cause of disability in the world population. Citicoline is an exogenous form of cytidine 5'-diphosphatecholine, an important component of the cellular membrane, is a medication believed to have combined neurovascular protection and repair effects. It is extensively studied in many clinical trials in patients including ischaemic stroke however promising results on meaningful clinical recovery and reduction of disability is lacking.

What was the trial?

ICTUS trial was an international randomized multicentre placebo-controlled trial to confirm the results of pooled data in a large clinical trial available on the effect of Citicoline on the recovery of patients with moderate to severe acute ischaemic stroke at 3 months.

Who were patients and what was the intervention?

A total of 2298 patients from centers in Europe were recruited during a period of six years. Patients had moderate to severe anterior circulation stroke categorized by the use of 3 scales (NIHSS, modified Rankin score, Barthel index) for neurological impairment & functional disability along with the physical examination & radiological evidence. Patients were randomly assigned to two groups. Treatment group was given 2000mg/day of Citicoline initially intravenous then oral for a total of 6 weeks, in a double blinded fashion. rt-PA was used if required in both groups. Both groups were comparable in

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term of age, gender, time from stroke onset.

What were the results?

Primary outcome e.g. global recovery at 90 days was similar in both groups with adjusted odds ratio for primary outcome was 10.3(95% CI). Secondary objective (rate of favourable response on single scale) showed no difference with the treatment with citicoline.

What were the conclusions?

The author concluded that the trial failed to prove any benefit of Citicoline treatment in the recovery from ischaemic stroke in 90 days. Although previous Metaanalysis showed some benefit of the treatment with citicoline.

Why is this important?

Citicoline adds no clinical improvement to the patient's clinical condition and is not a feasible choice for patients; rather it increases the cost of care. In a resource poor region these resources should be rationally utilized.

Acknowledgement and Disclosure Statement

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Recommended Reading

1. Davalos A, Alvarez-Sabin J, Castillo J, Diez-Tejedor E, Ferro J, Martinez-Vila E, et al. Citicoline in the treatment of acute ischaemic stroke: an international, randomised, multicentre, placebo-controlled study (ICTUS trial). *Lancet* 2012; 380: 349-57.