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CLEAR: the intraventricular haemorrhage thrombolysis trial.

Anjum Akhtar
Aga Khan University

Ayeesha Kamran Kamal
Agha Khan University, ayeesha.kamal@aku.edu

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Availability of a well-equipped stroke unit, intravenous thrombolysis and expert stroke teams has dramatically improved stroke outcomes for acute ischaemic stroke. Stroke from intracerebral haemorrhage (ICH), however, still carries a high mortality rate. ICH related to high blood pressure accounts for 10 to 20% of the stroke worldwide with a mortality of 50 to 80% in those with intraventricular extension due to associated obstructive hydrocephalous and perilesional oedema. Any strategy to overcome this obstacle will help to minimise the future morbidity.

What is the study under consideration?

CLEAR is a phase III clinical trial testing low dose thrombolytic therapy in patients presenting with ICH with intraventricular extension within 4 hours. The sample constituted 48 patients enrolled from 14 centres. Adults aged 18 to 75 years with supratentorial ICH of less than 30 ml with massive IV extension and an external ventricular drain already in place for treatment of obstructive hydrocephalous were selected for this trial.

What was the study design?

The patients were randomised to treatment with 3mg intraventricular rtPA through external ventricular drain or placebo (3ml of normal saline). Medicine or placebo were given 12 hourly and continued till they found the evidence of resolution of clot which was 7.5 days for rtPA and 12 days for placebo. Clot resolution was measured with daily CT scan of the brain.

Stroke Service and Vascular Fellowship Program, International Cerebrovascular Translational Clinical Research Training Program (Fogarty International Center and National Institute of Neurologic Disorders and Stroke), Aga Khan University Hospital, Karachi, Pakistan.

Correspondence: Ayeesha Kamran Kamal. Email: ayeesha.kamal@aku.edu

What were the results?

Rate of clot resolution was significantly higher in the rtPA treated group which was 18%/day versus 8%/day in the placebo treated patients. This was statistically significant.

Why is this study important?

We have had very little option in improving the outcome of the patients with ICH up till now. Intraventricular thrombolysis may prove to be beneficial in ICH. Though several other small clinical trials have also shown the significant benefit of low dose thrombolysis using intraventricular catheter, but further data is needed to support this evidence.

What this means for Pakistan?

We should be on the alert for future data on this therapeutic option, since our outcomes may be even better than reported given the young, frequent ICH with intraventricular extension in our region.

Acknowledgement and Disclosure Statement

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Recommended Reading

1. Naff N, Williams MA, Keyl PM, Tuhrim S, Bullock MR, Mayer SA, et al. Low-dose recombinant tissue-type plasminogen activator enhances clot resolution in brain haemorrhage: the intraventricular haemorrhage thrombolysis trial. Stroke 2011; 42: 3009-16.