Early magnetic resonance imaging in transient ischaemic attack and minor stroke

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Why is this study Important?

The usage and yield of MRI after minor stroke or TIA can be affected by timing of imaging. As this valuable resource is very expensive and limited in many countries, this study aimed to find the impact of scanning the patient early versus late after TIA or minor stroke to best inform practice.

Who were the participants?

CATCH is a prospective cohort study of TIA and minor stroke patients enrolled between April 2008 and September 2010. Patients who had TIA and minor cerebrovascular events identified through MRI were selected for the study. Total of two hundred sixty three TIA or minor stroke (NIHSS score of ≤ 3) who had baseline MRI done within 24 hours of event and a followup MRI at 90 days were included.

How MRI images were assessed?

MRI images were obtained on a 3.0-T GE scanner. DWI, fluid-attenuated inversion recovery, T2 and MRI angiography of the intracranial circulation were included at base line and follow-up after 90 days. Stroke neurologist and neuro-radiologist, who were blinded to the results of the baseline MRI, jointly interpreted 90-day follow up MRI. Following were the categories: no definitive stroke, single territory sub-cortical only stroke, multiple territories sub-cortical only strokes and multiple strokes in one territory including a cortical stroke. All these categories were not mutually exclusive.

What were the results?

Stroke lesions in any location were more common on baseline MRI versus 90-day MRI (68% versus 56%; $p<0.005$). Interestingly, 30% of patients with lesions at the baseline MRI had no findings at 90-day follow up MRI. When interpreted blinded to the baseline scan, the presumed relevant lesion on the 90-day MRI scan was the correct lesion in only 53% patients. Almost one third patients (34%) had different lesions at base line MRI as compared to the follow up scans. Ninety percent (80/89) had more lesions on the baseline MRI and 10% (9/89) had new lesions on the 90 day MRI.

What were the conclusions?

This study suggests that delayed MRI after TIA or minor stroke lowers the diagnostic yield and results. It is advisable that patients with TIA or minor stroke should undergo MRI early after symptom onset, and delayed imaging should be interpreted with caution.

What does this mean to our patients?

In a country like Pakistan where MRI resources are limited and expensive, unfortunately not every patient can utilize it. Evidence suggests that early MRI after TIA and minor stroke may suggest the etiology that a delayed MRI may miss. At least in those who can afford MRI after TIA, delays should be avoided as they do not assist diagnosis.

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Acknowledgements and Disclosures

Dr. Quratulain Nauman Shaikh is a neurovascular research fellow whose mentored research practicum training is currently funded by Award Number D43TW008660 from the Fogarty International Center and the National Institute of Neurologic Disorders and Stroke. The content is solely the responsibility of the authors and does not necessarily represent the official views of the Fogarty International Center, National Institute of Neurologic Disorders and Stroke or the National Institute of Health.

Recommended Reading

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