Guest Column

Assessment Tools in Stroke and Transient Ischaemic Attack (TIA)

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Stroke and Transient ischemic attacks (TIA) cause severe mortality and morbidity resulting from the disabilities caused by the neurological deficits. It results in a severe burden of cost on all healthcare systems across the world. Early and aggressive medical intervention including Thrombolysis can result in reduction of disability resulting from a stroke. To provide such advanced medical intervention a stroke needs to be recognised early across the board. This necessitates development of simple and easy to use assessment tools to be used by Non Stroke specialist doctors, Allied health professionals and bystanders to recognise Stroke. Awareness programmes play a vital role to make the general population aware of the importance of recognising stroke early and how to use the assessment tools to do so. We discuss a few assessment tools in common practice in the developed countries below.

FAST

The FAST tool has been developed and in common use in the United Kingdom. It is an assessment tool for use of lay persons and bystanders to quickly recognise Stroke and urgently seek medical help. Significant efforts have been made in recent years to spread the awareness about this tool among general population including widespread campaign through public media. The tool involves quick assessment of facial asymmetry, power of arms and speech of patient within the ability of a layperson as described below.

FACIAL MOVEMENTS

- Ask patient to show teeth, Is there an unequal smile or grimace,
- Note which side does not move well

ARM MOVEMENTS

- Lift the patient's arms together to 90º if sitting, 45º if supine and ask them to hold the position for 5 seconds before letting go, does one arm drift down or fall rapidly?
- If one arm drifts down or falls, note whether it is the patient's left or right.

SPEECH

- Listen for NEW disturbance of speech, or slurred speech.
  Listen for word-finding difficulties with hesitations. This can be confirmed by
  Asking the patient to name common objects like a cup, key or watch.
  IS THIS NORMAL FOR THEM

TIME to ring 999 (emergency assistance number)

The FAST tool have become very popular in recent years and work as an effective means of recognising stroke early and getting immediate medical attention.

ROSIER

The Rosier tool which stands short for Recognition of Stroke in Emergency Room was developed to help early recognition of stroke in the Emergency Department by Non Stroke specialist doctors. There are of course a number of conditions which may mimic stroke at the onset and make diagnosis difficult for non specialists. The ROSIER is specifically aimed to help to differentiate these Stroke mimics from an Acute Stroke.

Stroke Mimics

- Seizures
- Syncope (hypotension)
- Sugar (hypo or hyper)
- Sepsis
- Severe migraine
- Space occupying lesions
- Si-chological

ROSIER SCORING SYSTEM

	Score	
	Yes	No
Has there been loss of consciousness or syncope?	-1	0
Has there been loss of consciousness or syncope?	-1	0
ACUTE onset (including on wakening from sleep) of		
Asymmetric facial weakness	+1	0
Asymmetric arm weakness	+1	0
Asymmetric leg weakness	+1	0
Speech disturbance	+1	0
Visual field deficit	+1	0

A score of 0 or less on the ROSIER tool signifies that stroke is unlikely, whereas a score of 1 or more signifies that a stroke is more than likely.

Transient ischaemic attack & ABCD2 tool

Transient Ischaemic Attacks often called TIA or mini strokes are defined as a sudden focal neurological deficit that lasts for less than 24 hours and is of presumed vascular origin confined to an area of brain or eye perfused by a specific artery. Although the definition mentions resolution of symptoms within 24 hours, in most cases the symptoms last less than 20 minutes. The TIAs are to be looked at warning signs and these patients are at significant risk of developing Acute Stroke in the imminent future. Aggressive medical therapy needs to be instituted as early as possible to reduce this risk. This may even take the form of vascular surgical intervention in the form of Carotid Endarterectomy. Accurate risk stratification of all TIA patients is therefore necessary to access early investigation and specialist input. ABCD2 tool aims at GPs and non specialist doctors to accurately gauge the risk for a patient who has suffered a TIA and access early specialist input.

ABCD2 Score

- B (Blood pressure > 140/90 mmHg); 1 point for hypertension at the acute evaluation,
- A (Age); 1 point for age >60 years,
- C (Clinical features); 2 points for unilateral weakness, 1 for speech disturbance without weakness, and
- D (symptom Duration); 1 point for 10–59 minutes, 2 points for >60 minutes.
- D (Diabetes); 1 point

Guide to ABCD2 Total Score		Stroke risk after TIA at:			
Risk Group	(Score)	2-day	7-day	90-day	Recommended Action
Low	0 - 3	1%	1.2%	3.1%	Clinic Referral
Moderate	4 - 5	4.1%	5.9%	9.8%	Clinic Referral
HIGH	6 - 7	8.1%	12%	18%	ADMIT

Note:

1. Irrespective of the score, admission is recommended if **TIAs are recurrent** (i.e more than 1 episodes in a week).
2. Low score with **strong clinical suspicion** should not be ignored. Please seek advice from the **Stroke team**. (**Dr.Hamsaraj Shetty** on 029 20743867)

The above table illustrates the increasing risk of having a stroke in immediate future for patients who score higher on this tool. Patients who score 6-7 should be admitted immediately for rapid investigation and treatment. Patients who score lower should be started on Aspirin 300 mg OD immediately and referred for specialist input in outpatient clinic. It should be ensured that they get such input fairly quickly, ideally with 1 week.

Conclusion

There is continuing activity in the fields of medical research and important Studies are in progress to find and rationalise evidence based treatment in the fields of Cerebrovascular disease. However we will only be able to provide such advanced medical interventions to a wider population if the recognition of strokes is better and there is increased public awareness that stroke is an emergency. Till date even in the developed countries where there has been extensive campaigns to increase public awareness a significant number of strokes do not get urgent specialist medical input due to non awareness, delay in diagnosis and delay in asking for specialist help. These assessment tools described above can certainly pave the way for early recognition of Stroke and appropriate timely referral to specialist services. In the wider context they will raise public participation and forward the struggle towards reducing disability in this severe illness.