

INTRODUCTION

Stroke is common and may be due to either intracranial haemorrhage or infarction.

Over 130,000 people a year in England and Wales have their first stroke, and some 60,000 deaths are associated with stroke annually. Stroke is the third most common cause of death after heart disease and cancer.

85% of strokes are caused by cerebral infarction and 15% by intracranial haemorrhage.

Thrombolytic¹ treatment for cerebral infarction needs to be undertaken early to be successful. In order to determine suitability for treatment patients must undergo a scan, therefore, patients need to be transferred to an appropriate hospital. For the benefits of thrombolysis to be most effective it needs to be administered within 3 hours of onset of symptoms.

The most sensitive features associated with diagnosing stroke and TIA are facial weakness, arm and leg weakness, and speech disturbance.

A TIA occurs when blood supply to part of the brain is briefly interrupted. TIA symptoms, which usually occur suddenly, are the same as those of stroke but are usually short lasting.

The risk of a patient with TIA developing a stroke is high and symptoms should always be taken seriously.

ASSESSMENT

Assess **ABCD**'s

- May have airway and breathing problems (*refer to dyspnoea guideline*).
- Level of consciousness may vary (*refer to decreased level of consciousness guideline*).

Evaluate if the patient has any TIME CRITICAL features – these may include:

- any major ABC problem
- altered level of consciousness.

If any of these features are present, start **correcting A and B problems then transport to the nearest suitable receiving hospital**. Local arrangements should be in place to ensure that optimal use is made of specialist in-hospital resources (e.g. stroke unit).

- Provide a **Hospital Alert Message / Information Call**

- En-route – continue patient **management** (*see below*)
- Assess blood glucose level. Always check if the patient is **diabetic**, as **hypoglycaemia** may present as one sided weakness.

If there are no TIME CRITICAL features present, perform a more thorough assessment as a brief secondary survey:

- assess blood pressure because often in the early stages the blood pressure is markedly raised
- assess Glasgow Coma Scale (GCS)² on **unaffected side** – eye and motor assessments may be more readily assessed if speech is badly affected
- assess for presence of speech abnormality, either slurred speech (dysarthria) or problems speaking or with the understanding of speech (dysphasia)
- assess limb power and sensation. May have mainly sensory impairment with numbness or “pins and needles” down affected side
- assess for sudden onset of weakness of the face and arm, as when combined with speech abnormality, stroke is the most likely diagnosis (*refer to Table 1*).

Table 1 – FAST Test^{3,4}

Facial Weakness	ask the patient to smile or show teeth. Look for NEW lack of symmetry
Arm Weakness	(motor) – Ask the patient to lift their arms together and hold for 5 seconds. Does one arm drift or fall down? The arm with motor weakness will drift downwards compared to the unaffected limb
Speech	ask the patient to repeat a phrase. Assess for slurring or difficulty with the words or sentence

These components make up the **FAST** (face, arms, and speech test) assessment that should be carried out on **ALL** patients with suspected stroke/TIA.

MANAGEMENT⁵⁻⁹

Follow **medical emergencies guideline**, remembering to:

Start correcting:

- **AIRWAY**
- **BREATHING**
- **CIRCULATION**
- **DISABILITY** (mini neurological examination)
- correct hypoxia,^{10,11} administer high concentration oxygen (O₂) via a non-re-breathing mask, using the stoma in laryngectomy and other neck breathing patients, to ensure an oxygen saturation (SpO₂) of >95%, except in patients with chronic obstructive pulmonary disease (COPD) (**refer to COPD guideline**)
- consider assisted ventilation at a rate of 12–20 breaths per minute if:
 - oxygen saturation (SpO₂) is <90% on high concentration O₂
 - respiratory rate is <10 or >30
 - expansion is inadequate
 - if not time critical, consider IV access. Patients are often dehydrated: consider IV saline.

Fluid Therapy

Patients having suffered a stroke will not have acute fluid loss, but may present with dehydration resulting in reduced fluid in both the vascular and tissue compartments, if they have been ill for an extended period of time. Often this has taken time to develop and will take time to correct. Rapid fluid replacement into the vascular compartment can compromise the cardiovascular system particularly where there is pre-existing cardiovascular disease and in the elderly. Gradual rehydration over many hours rather than minutes is indicated.

Consider recording 12-lead ECG

Specifically:

- check blood glucose level (**refer to glycaemic emergencies guideline**)
- conscious patients should be conveyed in the semi recumbent position
- patients should be nil by mouth

DO NOT administer aspirin if a stroke/TIA is suspected.

Key Points – STROKE/Transient Ischaemic Attack (TIA)

- Stroke is common and may be due to either intracranial haemorrhage or infarction
- The most sensitive features associated with diagnosing stroke and TIA are facial weakness, arm and leg weakness, and speech disturbance – FAST test
- FAST test should be carried out on ALL patients with suspected stroke/TIA
- **DO NOT** administer aspirin if a stroke/TIA is suspected.

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METHODOLOGY

Refer to methodology section.