

Delivering safe stroke care at hospitals without acute stroke units during the COVID-19 pandemic

Appendix 10: Summary guide to thrombolysis

(Adapted from Oxford University Hospitals NHS FT guidance)

Scope

This document provides a **summary guide** covering the practicalities for the initial assessment of patients with acute stroke arriving at the ED.

A support document, the ‘thrombolysis checklist’, is available in Appendix 6 and should be kept in the ED. This should be used in real-time to help support screening for contraindications to thrombolysis, informing the consent processes and dosing alteplase.

Acute stroke care is supported remotely by a specialist stroke consultant, with 24/7 availability.

This document is designed to provide a structured approach to initial assessment. Using such a structured approach will support remote decision making by stroke consultants. It will also support fast times to treatment. Stroke is a time-critical emergency and thrombolysis should be administered as soon as possible and ideally within 30 minutes of arrival to eligible patients.

Pre-alerts and stroke calls

Paramedic teams should pre-alert the ED for all suspected stroke patients arriving at the ED. The radiography team should also be notified.

As soon as the ED team has secured the details, these should be relayed to the networked stroke consultant without personal details. This is typically via call to mobile phone or messenger service (WhatsApp, etc).

It is good practice for the ED team to contact the stroke consultant at the beginning of each shift to ensure each has the other’s contact details to facilitate communication in the event of a stroke call.

Assessment on arrival

A focussed assessment should be carried out. A thrombolysis checklist (see **Appendix 6**) should be kept in the ED.

The patient should normally be assessed in the resuscitation bay of the ED.

Key factors to determine:

- **Is this likely to be a stroke?** Abrupt onset, focal neurological deficit, absence of severe haemodynamic or metabolic disruption.
- **Are there any features to suggest an alternative diagnosis?** This would include seizure, LOC, worsening symptoms of previous stroke, known brain tumour or metastases, recurrent stereotyped symptoms, strong suggestion of functional presentation.
- **When was the patient last known to be well?** If the patient woke with symptoms or the time is unknown, when were they last known to be well? *Call a witness if needed.*
- **What is the severity of the stroke?** This does not need to be a full NIHSS breakdown unless you are competent to acquire this quickly – for example, it is sufficient to say dense left-sided weakness affecting face, arm and leg with dysarthria.
- **What is the premorbid functional status?** Summary is sufficient, e.g. level of dependency, walking ability and aids, cognitive status.
- **What is the blood pressure and capillary glucose?** *The glucose can be from the paramedic assessment.*
- **Are there any additional considerations relating to thrombolysis?** Important information includes current anticoagulation, previous haemorrhage, recent stroke, recent operations, pregnancy. Note there

are few absolute contraindications and **these should usually be discussed with the stroke consultant directly.**

After the initial assessment, **please briefly update the stroke consultant** and organise urgent imaging.

Investigations

After the targeted initial assessment, the **key investigation is the CT scan of the brain**. Unless there is a clear contraindication, this should include CTA of the head and neck. Recent renal function is **not** required before CTA. Venous access is required.

- These should **not** need to be discussed with the duty radiologists, and the radiographer should agree to do these routinely.
- Check the CT radiographer can accommodate the scan and which scanner is to be used. This should happen at the next available opportunity.
- Escort the patient to the CT scanner as soon as possible and help the radiographer move the patient onto the scanner table.
- Once imaging is acquired, make the stroke consultant aware and await instruction regarding thrombolysis.
- Imaging should not be delayed for an ECG or changing clothes, unless awaiting the scanner.
- Physiological monitoring should be used to transfer the patient to the CT scanner, unless clearly not needed.

Thrombolysis

A record of the discussion around decision making, including risks and benefits of thrombolysis with the patient or their advocate, should be recorded where the patient is able to engage in this discussion. A summary of the salient points is included in the thrombolysis checklist ([Appendix 6](#)).

For a comprehensive guide to thrombolysis contraindications, see the thrombolysis checklist ([Appendix 6](#)).

If a decision to deliver thrombolysis is made, **it may be necessary to first lower the BP if either SBP is over 185 mmHg or DBP over 110 mmHg**. First-line BP medication is 10–20 mg IV labetalol, escalating under guidance of the stroke consultant. Second-line agent is IV glyceryl trinitrate (GTN) infusion. Discuss with the stroke consultant for details.

Thrombolysis for stroke uses **alteplase**. This should be kept in the drug cupboard in the ED.

Dosing is by reported or estimated weight (0.9 mg/kg), and a look-up table is available in the thrombolysis checklist ([Appendix 6](#)). A weighting pat slide is a time-efficient way of obtaining body weight to calculate alteplase dose.

A bolus is given (10% of total dose) as a push IV injection, followed by the remaining dose over 1 hour.

The bolus dose can be mixed from a 10-mg set of vials for reconstitution. The diluent and powder are provided in the pack. These are to be mixed using a standard syringe and drawing up needle. Mixing should be done by rolling the mixed vial until the powder has dissolved. The timing of the bolus delivery should be documented in the notes and the drug chart.

ED nurses can set up the infusion. Patients should remain in ED until the infusion is complete. After this time, patients can be moved to a monitored bay on a ward.

Thrombolysis should be stopped if there is concern over intracranial bleeding (worsening neurological deficit, reduced conscious level, worsening headache, acute severe hypertension, nausea and vomiting) and the patient rescanned. Contact the stroke consultant and administer FFP and tranexamic acid. Thrombolysis should also be stopped in the presence of extracranial bleeding or anaphylaxis (hypotension or angioedema with lip/tongue swelling).

The **coagulopathy associated with thrombolysis can last up to 24 hours**, meaning BP control targets and haemorrhagic management remain the same for the first 24 hours.

Post-acute management

A few tips:

- Formally document the NIHSS in the clerking (online training is available at www.nihstrokescale.org/).
- Patients should be admitted within 4 hours to the stroke unit directly from ED.
- Venous thromboembolism (VTE) prophylaxis is normally managed using intermittent pneumatic compression devices. Do not give dalteparin unless advised by the stroke consultant.
- Patients are nil by mouth and kept hydrated with saline.
- Prescribe IV paracetamol as required.
- If thrombolysis is given, do not give concurrent aspirin or clopidogrel acutely.
- The stroke consultant will advise about thrombectomy options.

If in doubt about any aspect of the management, please contact the stroke consultant directly.