# Imaging in Neurovascular Disease

## Suspected Acute stroke

All suspected stroke patients arriving in hospital should undergo a plain CT head as soon as possible (at most within 1 hour of arrival at hospital) as it will determine the type of stroke (ischaemic vs haemorrhagic), rule out mimics and guide treatment decision.

If thrombectomy is potentially indicated, an urgent discussion with the stroke team (in hours)/medical registrar on-call (out of hours) and radiology colleagues is needed to arrange CT angiography (aortic arch to vertex) immediately following initial non-enhanced CT (in same sitting).

- Current eligibility criteria:
  - NIHSS ≥ 5 (or fluctuating/disabling deficit)
  - Pre-stroke Modified Rankin Score 0 – 2
  - Thrombectomy service available:
    - Thrombectomy at Bristol (Southmead) currently is available 7 days a week – referrals accepted 6 am to 10 pm only. All images to be uploaded immediately to Biotronics 3D net for review by Bristol team prior to acceptance for transfer.
    - Thrombectomy at Cardiff (UHW) currently is available Monday to Friday – referrals accepted 8 am to 1 pm only.

Advanced imaging (MRI, CTP) may be indicated in select cases – discuss with stroke team / neuroradiology. Circumstances where advanced imaging may be indicated included:

- Potential thrombolysis candidate (no other contraindications) plus:
  - Onset of symptoms/last known well 4.5 to 9 hours ago, or
  - Wake up within 9 hours from midpoint of sleep, or
  - Unknown onset time (MRI)
- Potential thrombectomy candidate (as above) plus:
  - Onset of symptoms/last known well between 12 and 24 hours ago, or
  - Wake up/unknown onset time

Patients with an intracranial parenchymal haemorrhage demonstrated on CT should be considered for CT angiogram (CTA) of cerebral vessels following discussion with the duty Neuroradiologist. If the CTA suggests a vascular anomaly (aneurysm, AV malformation etc.), urgently discuss with the on-call Neurosurgical team at the University Hospital of Wales, Cardiff. Patients with intracranial bleed may need a follow up imaging in 6 weeks or when clinically appropriate. Type of imaging depends on the clinical question that we are trying to answer.

CT/MR venogram should be considered for patients with intracerebral haemorrhage in a location suggestive of cerebral venous thrombosis.

## Neuro-imaging policy in TIA

CT head is not routinely recommended in TIA but **consider CT head in the following scenarios**

1. Atypical features, headache at onset of symptoms, prolonged symptoms (> 1 hour) where the clinical suspicion is a minor stroke, persistent or recurrent (two or more) symptoms. This is to rule out established infarct, small intracerebral haemorrhage or a cortical subarachnoid bleed.
2. Neurological symptoms in those on anticoagulation or with a bleeding disorder

## Consider MR Head

1. Where an alternative clinical diagnosis seems more likely (for example migraine, epilepsy or tumour)
2. In people being considered for carotid endarterectomy (CEA) with uncertain vascular territory.

References: NICE (NG 128) May 2019, National Clinical Guideline – Stroke 2023

## Swansea Bay University Health Board

## Authorisation Form for Publication onto COIN

**PLEASE ENSURE THAT ALL QUESTIONS ARE ANSWERED – IF NOT APPLICABLE PLEASE PUT N/A**

| | |
|---|---|
| COIN ID. | CID1262 |
| Document Title. | Imaging in Neurovascular Disease |
| Name of Author. | Dr. Peter Slade, Consultant Stroke Physician |
| Name of Lead Pharmacist. | N/A |
| Is the document New, Revised or a Review of a previous version. | Revised |
| Where on COIN do you want the document to be published. | Neurology and Stroke – Stroke<br>Radiology |
| Is the document relevant to the GP Portal. | Yes |
| Sign to confirm that the document has been authorised by an approved governance process in a specialty or delivery unit. | Stroke Team, Morriston Hospital.<br>Neurovascular Imaging Group |
| If NICE guidance been considered/referenced when producing this document, please provide the title or reference number. | NICE128 |
| Please provide a brief description/abstract of the document. | Imaging in Neurovascular Disease<br>CT Head, Stroke, Imaging in Stroke. |
| Equality Statement.<br>*(All policies and procedures need to comply with CID76 Policy for the Management of Heath Board Wide Policies, Procedures and other Written Control Documents (WCD).* | N/A |
| Published Date. | April 2014 |
| Last Reviewed Date. | October 2025 |
| Next Review Due/Expiry Date. | October 2028 |