UK & ROI ACUTE STROKE SIMULATION COURSE

Stroke Mimics

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Stroke Mimics are a major concern when assessing for thrombolysis

SSNAP audit for month of September 2021 in England & Wales

Findings:

Average Age: 70 years
55.2% were Female
52.5% of all stroke assessments were identified as being a stroke mimic
(6,351 mimics compared with 5,672 strokes)

Thrombolysis in those who resulted in being a mimic

- In a view to reduce the door to needle time and increase the proportion of patients receiving reperfusion therapies may lead to stroke mimics receiving such treatment inadvertently.

- The SSNAP audit (2021) identified that the proportion of stroke mimics receiving thrombolysis ranged between sites from 0 to 10.7%.
    - Stroke mimics were younger (58 years) compared with stroke patients (74 years).

    - **1 in 13 thrombolysed patients were a mimic**

- No audit data on complication rate but anecdotally thought to be lower than the typical stroke patient group

SSNAP findings 2021 continued

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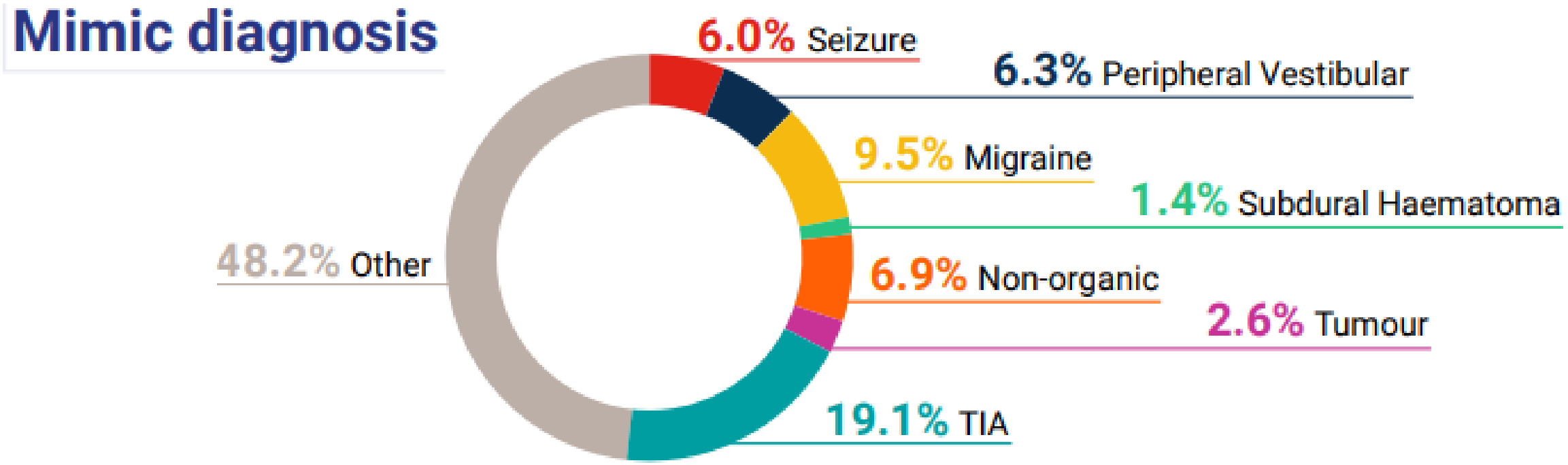

SSNAP findings 2021 continued

- TIA (most common mimic at 19.1%)
- Migraine
- Functional disorders
- Vestibular
- Seizure
- Decompensation of previous stroke secondary to infection or metabolic assault

Common 'Other' mimics	48.2%
Bell's palsy	5.7%
Syncope	5.3%
Delirium	4.1%
Fall	3.8%
Decompensation of old stroke	3.7%
Headache	2.1%
Peripheral nerve / neuropathy/neuropraxia	1.8%

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Stroke Mimics are Mainly

S's

Seizures

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Don’t always have history of epilepsy

May be related to previous stroke (ischaemic or haemorrhagic)

Consider Lactate level on admission, collateral history from family / carers such as vacant episodes

Sugar - Hypoglycaemic Episodes

Don’t always have autonomic symptoms but can be solely focal neurological

Possible to have a time pattern such as related to medication

Check recent alcohol intake as the possible trigger

Glucose check essential as part of thrombolysis checklist regardless of known diabetes or not

ABCDEFG:

Airway – Breathing-Circulation –Don’t-Ever-Forget- GLUCOSE!!

Sepsis

Sepsis can be a mimic though occasionally also a cause such as endocarditis so thorough clinical examination is important

Waiting for blood results, other than INR if on anticoagulants, is not usually needed but you may want to consider this if clinically patient presents with a possible infective differential diagnoses

Collateral history from family or GP records may be useful especially if patient has had a previous stroke and this may be an exacerbation of residual symptoms

Ask the basics – how was the patient the preceding day?

Severe Headache / Migraine

- Hemiplegic migraine is a common mimic and now acknowledged that it can present with neurology minus the headache. Often visual disturbance will also be present and a useful indicator
- More common in younger age group and more common in females
- **Migraines with auras are a risk factor for ischaemic stroke (Hu 2017)**

Somatisation / Functional / non-organic

This tends to be the group that most clinicians worry about

Can present with sensory or motor changes

Usually there is a trigger such as panic attach of dissociative symptoms

Often there can be inconsistencies with clinical examination

Don’t assume that this is the case though – young people can also have strokes!

Space Occupying Lesion / brain tumour

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Typically have progressive neurology but occasionally can be acute onset

Acute presentation can be varied such as haemorrhagic, Todds Paresis or compression of vascular structures such as oedema or obstructive hydrocephalus

SDH

Typically have progressive neurology but occasionally can be acute onset

Head injury not always very recent – check for laceration / bruising etc

Sometimes can have bilateral neurology depending on the size of the bleed and if midline shift exists

BP often not altered

Syncope

Often if a patient collapses then there is a drop in blood pressure and as a result poor perfusion to the brain. In an elderly or clinically vulnerable patient this can result in speech disturbance or occasional limb weakness

Often resolves as soon as the blood pressure normalizes. This may not be the case in the operation room when strokes during long procedures can occur as a result of hypoperfusion.

Typically these patients are not considered for thrombolysis but may be seen in the TIA clinic and the cause for the collapse should be thoroughly investigated.

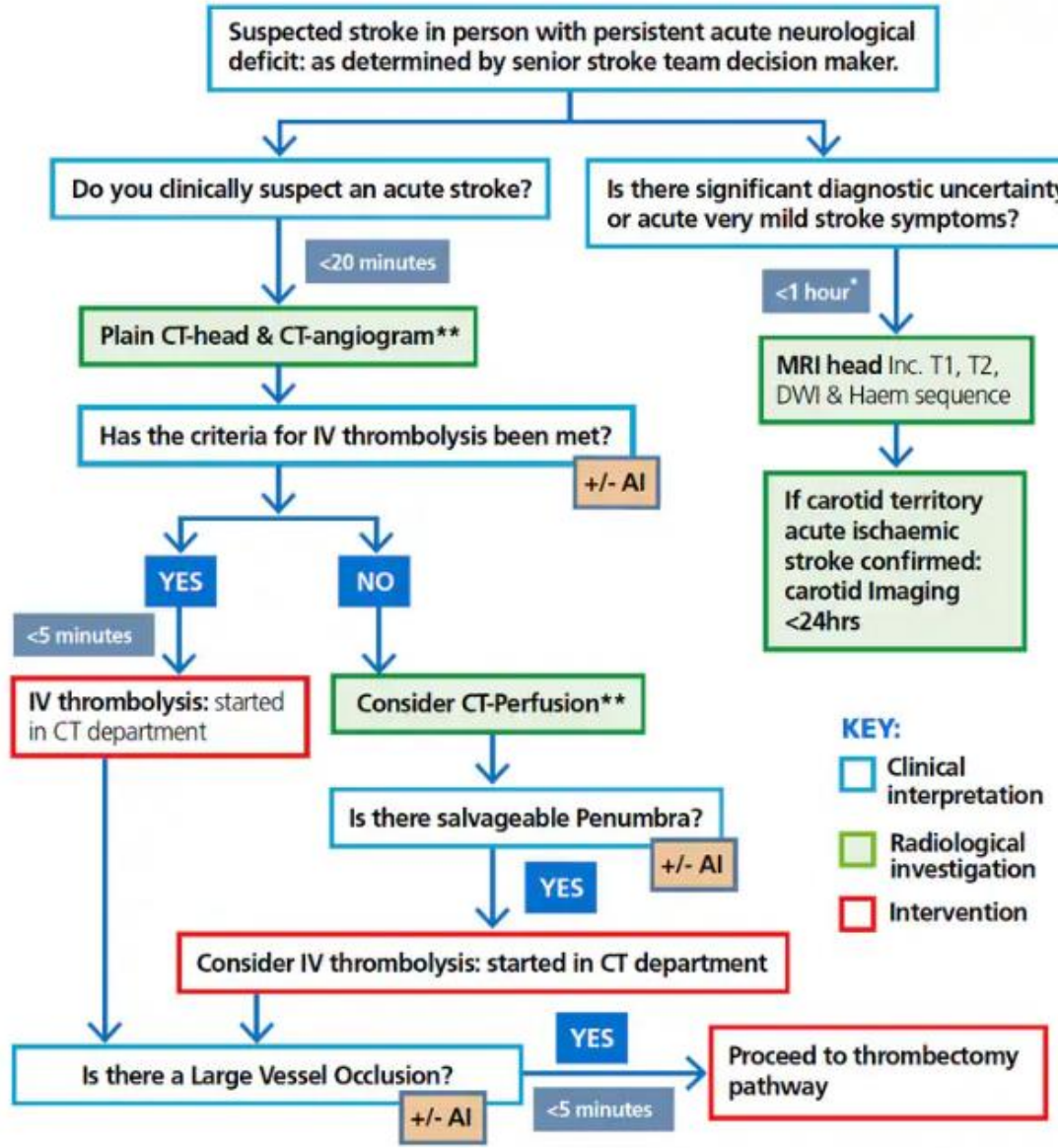
Vertigo Symptoms

Dizziness is rarely as a result of stroke in the absence of any other neurology and often if there are several posterior stroke symptoms there may be a delay in presentation making thrombolysis decisions difficult.

Always recall the time extension for basilar strokes

Perfect reason for MRI being first line imaging with NOSIP pathway

Figure 1: National Optimal Stroke Imaging Pathway



CT=computed tomography; MRI=magnetic resource imaging; DWI=diffusion-weighted imaging; IV=intravenous; AI=artificial intelligence.

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Other Mimics

The list is endless…..

Excessive Alcohol / illicit drugs / medication change – all can affect GCS, speech, coordination

NOF – fall and inability to move L leg – always take a step back and consider the obvious – just because they've been referred doesn't mean that the obvious has been excluded

Transient Global Amnesia – these patients rarely get seen in ED as thrombolysis calls but often referred to TIA clinic (duration of amnesia can be 1-10 hours and rare in <50yrs) Ramzan 2023

References

https://www.rcpjournals.org/content/clinmedicine/17/2/156.full.pdf

https://www.hqip.org.uk/wp-content/uploads/2022/06/Ref.-363-SSNAP-2021-stroke-mimics-report-FINAL.pdf

Hu X, Zhou Y, Zhao H, Peng C. Migraine and the risk of stroke: an updated meta-analysis of prospective cohort studies. Neurol Sci 2017; 38:33. cited in Ramzan et al Migraine-associated stroke: risk factors, diagnosis, and prevention – UpToDate (26/9/23)