

Transient Ischaemic Attack: primary care

TIA : Learning objectives

Part 1: TIA overview and clinical assessment

- Know the current thoughts on how to define a TIA
- Be able to identify the key clinical features that aid diagnosis of a TIA
- Have a working knowledge of the relevant neuroanatomy
- Brief overview of the investigations and management of a TIA using case

Part 2: TIA service

- Know who and how urgently to refer to clinic
- TIA assessment during the pandemic
- Management in the acute setting
- What to do prior to referral
- Important contacts for advice and referral

TIA – what is it and why is it important?

- Clinical, imaging based or time based
- 20% strokes preceded by TIA
- Treating TIA may prevent strokes

- In practice/clinic:
 - Diagnose a TIA
 - Vascular territory

Refer for further:

- Investigations and management

How quickly should I refer?

- TIA specialist clinics
 - Local
 - Offer a 7 day service
- Moved away from ABCD2
- See everyone within 24 hours
- Refer into AED:
 - those on OAC (urgent CT for bleed)
 - Head injury – SDH
 - Ongoing symptoms
 - High risk features – recurrent, crescendo, known carotid disease, AF
 - Friday! (ask the stroke team directly, should be a local protocol)

TIA diagnosis in practice

- Very difficult
- All TIA's vs all mimics
- Definition – nil on exam
- No biomarkers – gold standard is 'expertise'
- **Detailed history taking alongside investigations**
 - Who should come to TIA vs rapid neurology or geriatrics or cardiology
- 30-50% do not have a TIA (assume it will be much higher with first point of call)
 - May have an important alternative diagnosis
 - Move away from 'Not a TIA'

History taking

- Case e.g. 60M left arm weakness
- Imagine four questions of the presenting complaint – what would you ask?

Questions?

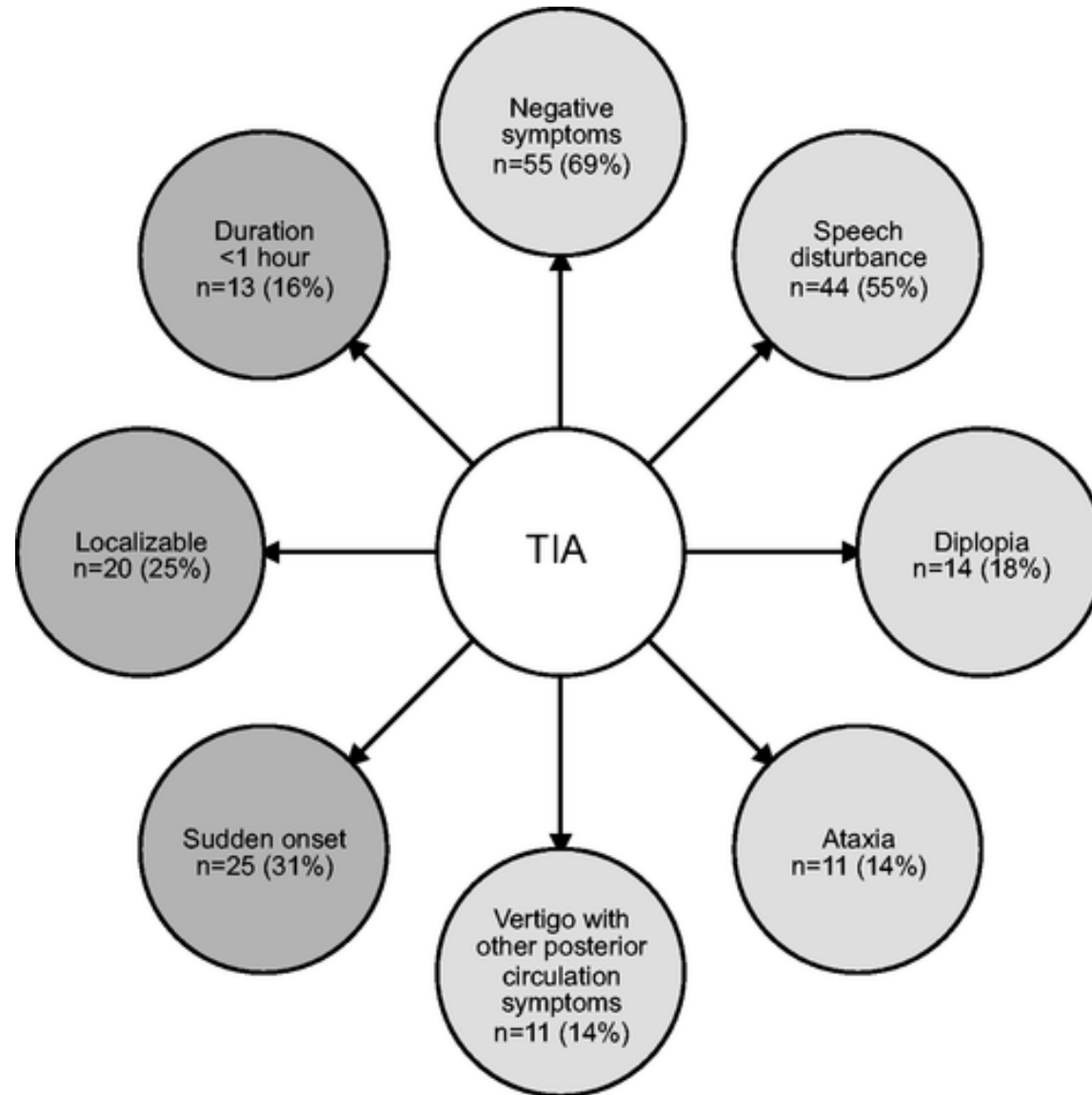
- Was it sudden?
- Was it focal?
- Did it resolve?
- Did they lose consciousness

TIA scoring system

Variable	Score if yes	Score if no	Std error (<i>P</i> -value)
History of stroke or TIA	0.5	0	0.1 (3.5×10^{-7})
Headache	0	0.5	0.11 (7.1×10^{-5})
Diplopia	1.2	0	0.28 (2.7×10^{-6})
LOC/Pre-syncope	0	1.1	0.21 (1.9×10^{-7})
Seizure	0	1.6	0.43 (1.4×10^{-4})
Speech abnormalities	1.3	0	0.14 ($<1 \times 10^{-10}$)
Unilateral limb weakness	1.7	0	0.10 ($<1 \times 10^{-10}$)
UMN facial weakness	0.6	0	0.15 (9.5×10^{-8})
Age		Multiply by 0.04	0.004 ($<1 \times 10^{-10}$)

All values reflect the regression coefficients seen and *P*-values refer to significance of each variable in the final model. Std Error = Standard Error.

To calculate the score, all values should be summed. If total score >6.1, classify as TIA. For '2:1 cost ratio,' if total score >5.4, classify as TIA.

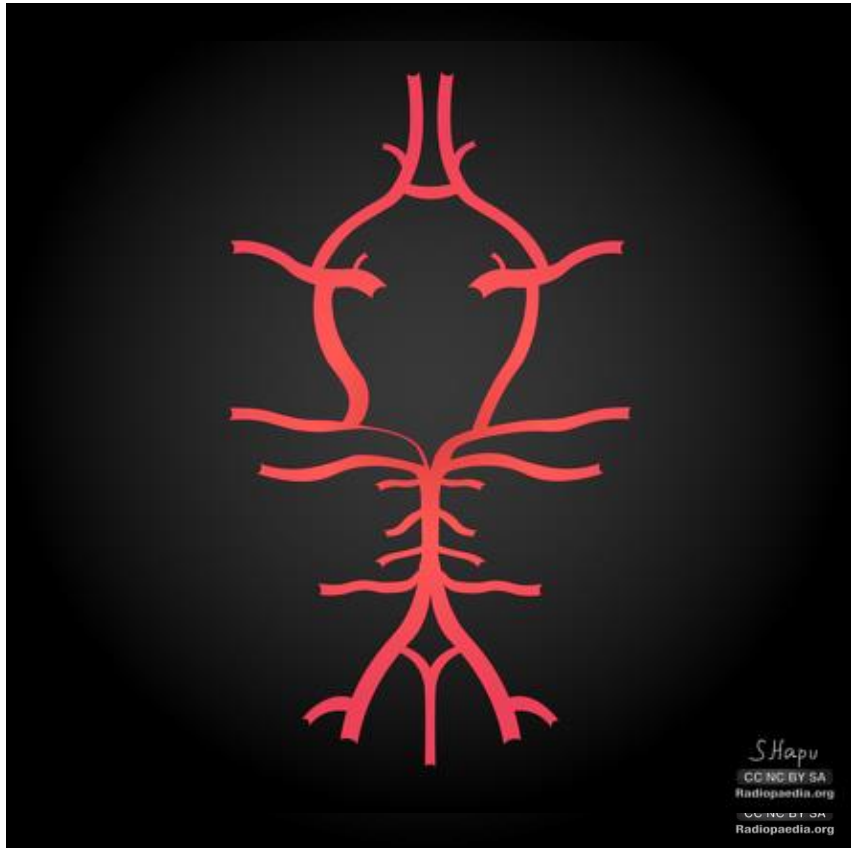
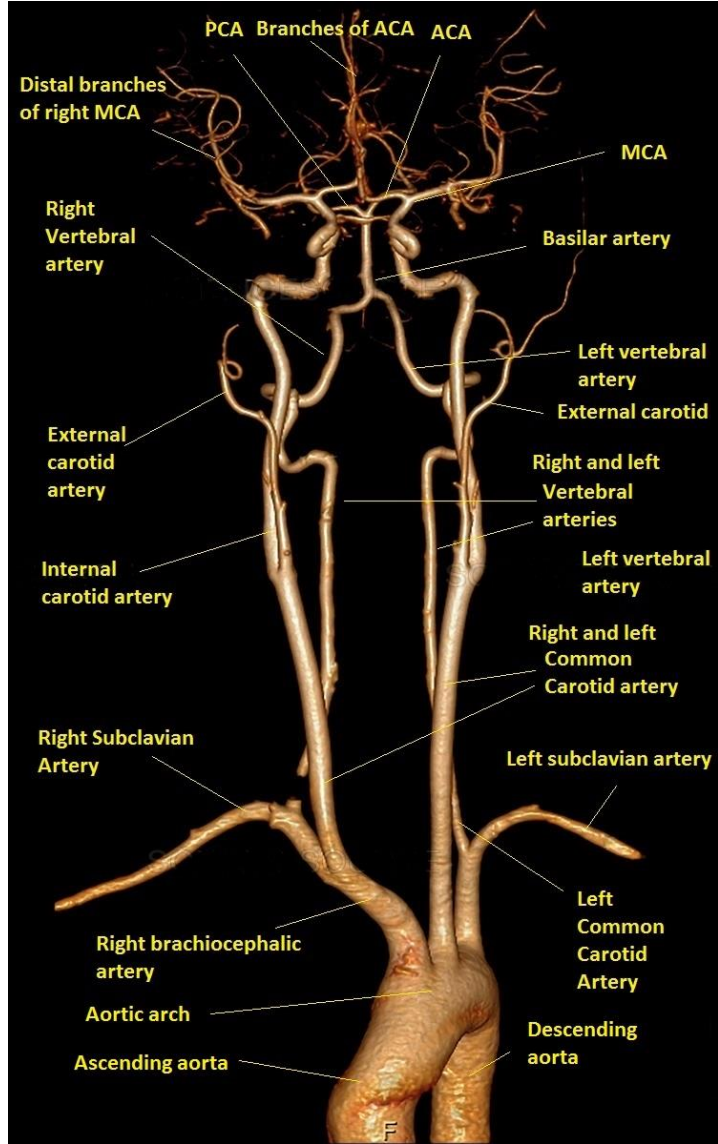


What Points against TIA?

- Symptoms suggestive of a mimic:
 - Stereotyped, headache, previous events
 - Positive symptoms – motor (jerking), sensory, visual
- Loss of consciousness – syncope clinic
- Qualitative features – slow onset, Jacksonian, non localising
- Absence of risk factors (some point to a mimic)
- Whole picture – can have stereotyped events e.g. capsular warning

Now you know the diagnosis → localisation

- Learning points:
- How the circulations to the brain divided
- 4 (2 and 2) arteries that supply the brain and overview of COW
- Segments and branches of the internal carotid artery (less important but still useful for follow up)



Neuroanatomy – what's needed

- Anterior and posterior circulations
 - Carotids (weakness, sensory, language disturbance)
 - Vertebrobasilar system (ataxia, dizziness, bilateral symptoms, double vision)
- Differentiate in a TIA
- Carotid disease
 - Amenable to surgical treatment
- Posterior circulation
 - CT angiogram or vertebral dopplers (not as accurate)
 - Dissection, anatomical variants or stenosis

Case 1:

50 year old right handed, Asian, doctor

- Smoker 5 day for 20 years
- T2DM – on metformin
- No family history
- No allergies
- MH: metformin
- PC:
- ‘Visual disturbance’
- No arm or leg weakness, no sensory disturbance
- No speech or language issue
- Never happened before

Comes to clinic..

- Is this a TIA? What questions can ask to help?
- Is this anterior or posterior circulation?

Comes to TIA clinic..

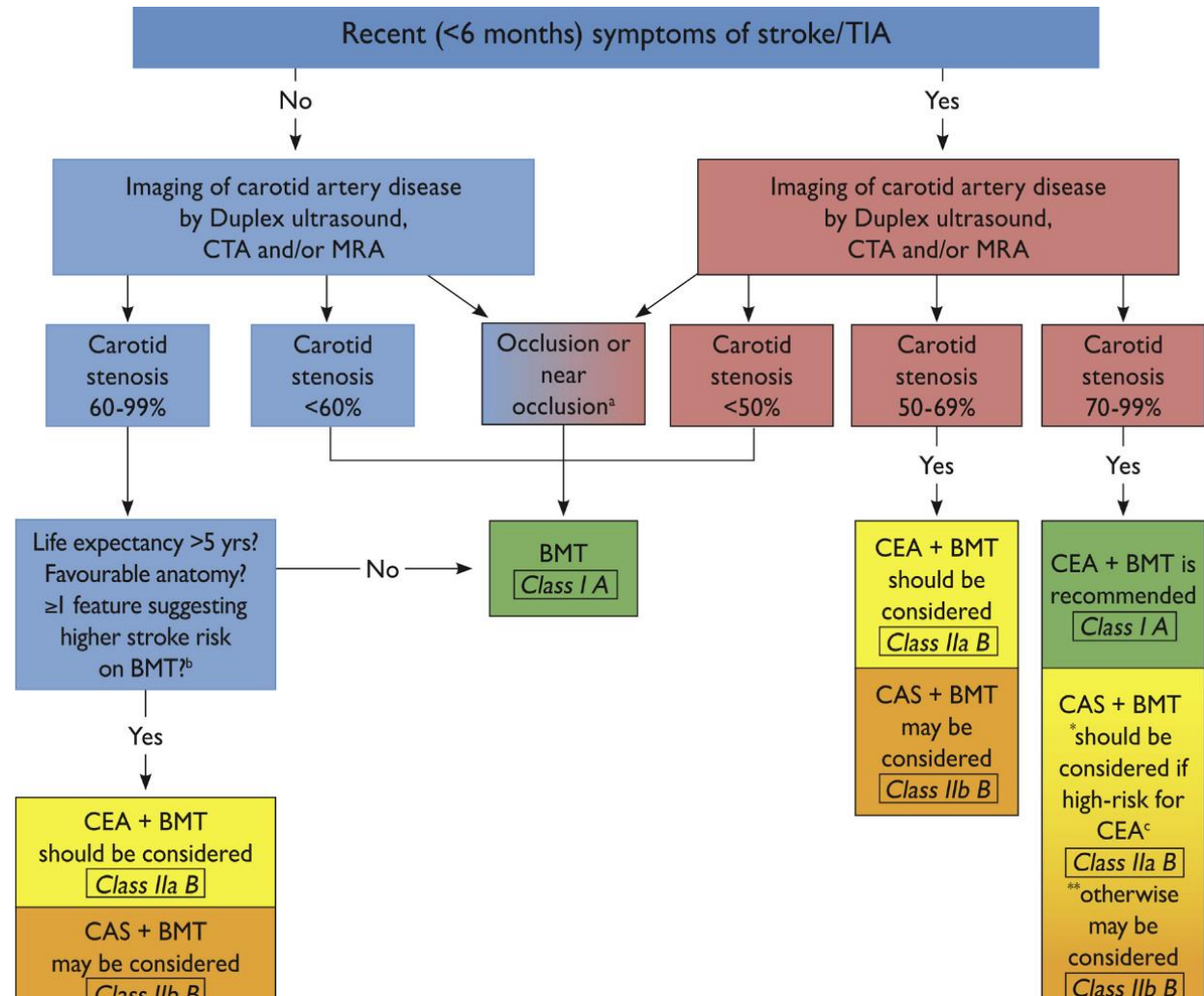
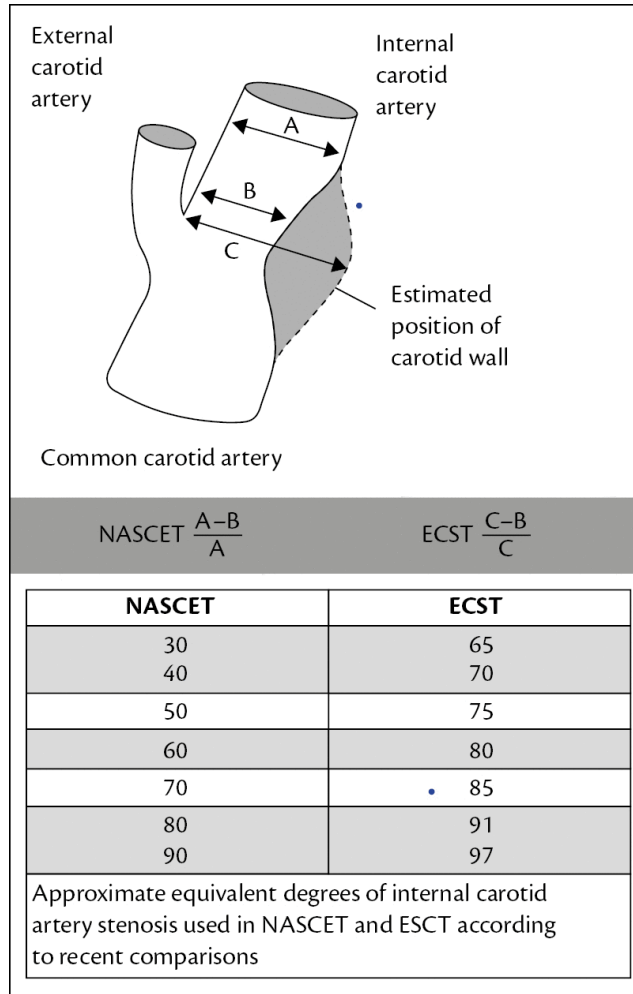
- Is this a TIA?
 - Was it sudden? Yes 2 days ago
 - Was it focal? Right eye went blind altitudinal
 - Did it resolve? Yes lasted 60 seconds
 - Did they lose consciousness? Felt odd but no loss of consciousness
- Not happened before, no other focal symptoms
- Think about mimics – headache, blurred or visual loss, positive phenomena
- Is this anterior or posterior circulation?
- Anterior – amaurosis fugax

Investigations would you do?

- **US Carotid Dopplers – 70% stenosis**
- Axial imaging may not be needed
- (NICE – territory, mimics, ongoing symptoms, helps with diagnosis, MRI)
- Bloods
- ECG
- Cardiac investigations
 - How long?
 - Debatable....
 - 24-ILR unless alternative aetiology

Symptomatic ICA stenosis – should we operate?

<https://reader.elsevier.com/reader/sd/pii/S1078588417303957?token=617A1A0BABA0726B9B7E547067A1D20285C2BB0A90209452FDF2FCD0FD983360F5E598461D0AD2CAA82B3BE6238FDA7D>



Management in general cases

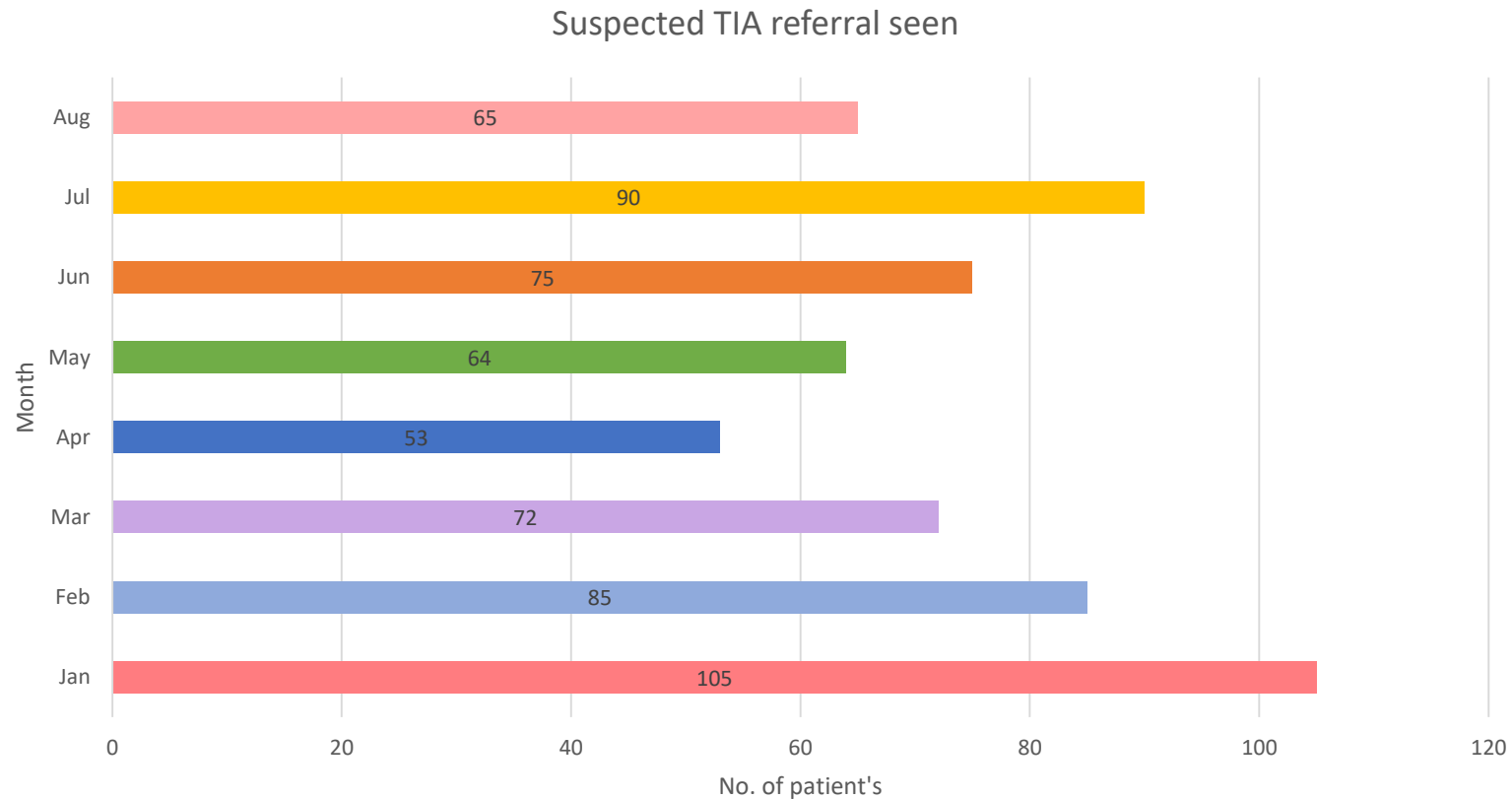
- Antiplatelets
 - Aspirin STAT → clopidogrel OR Clopidogrel STAT → clopidogrel
 - DAPT loading followed by low dose for 21 days (CHANCE and POINTS) (ABCD2>4)
 - Excluded carotid or POCS
 - High risk TIA
 - Intracranial stenosis - DAPT
 - AF – anticoagulate - high risk referral
- Statins
 - Atorvastatin 40
 - Do not use fibrate instead low dose or alt day or injectable
- Lifestyle advice
- Driving advice (1/12)
- Safety netting – call 999 if symptoms develop

PART 2: TIA service
SIJI JOY Stroke CNS

8 Months TIA data

January to August total patient's seen in the TIA clinic- 609 patients

Monthly breakdown is as shown in the graph that reflects the reduced number of referrals received during the peak of COVID

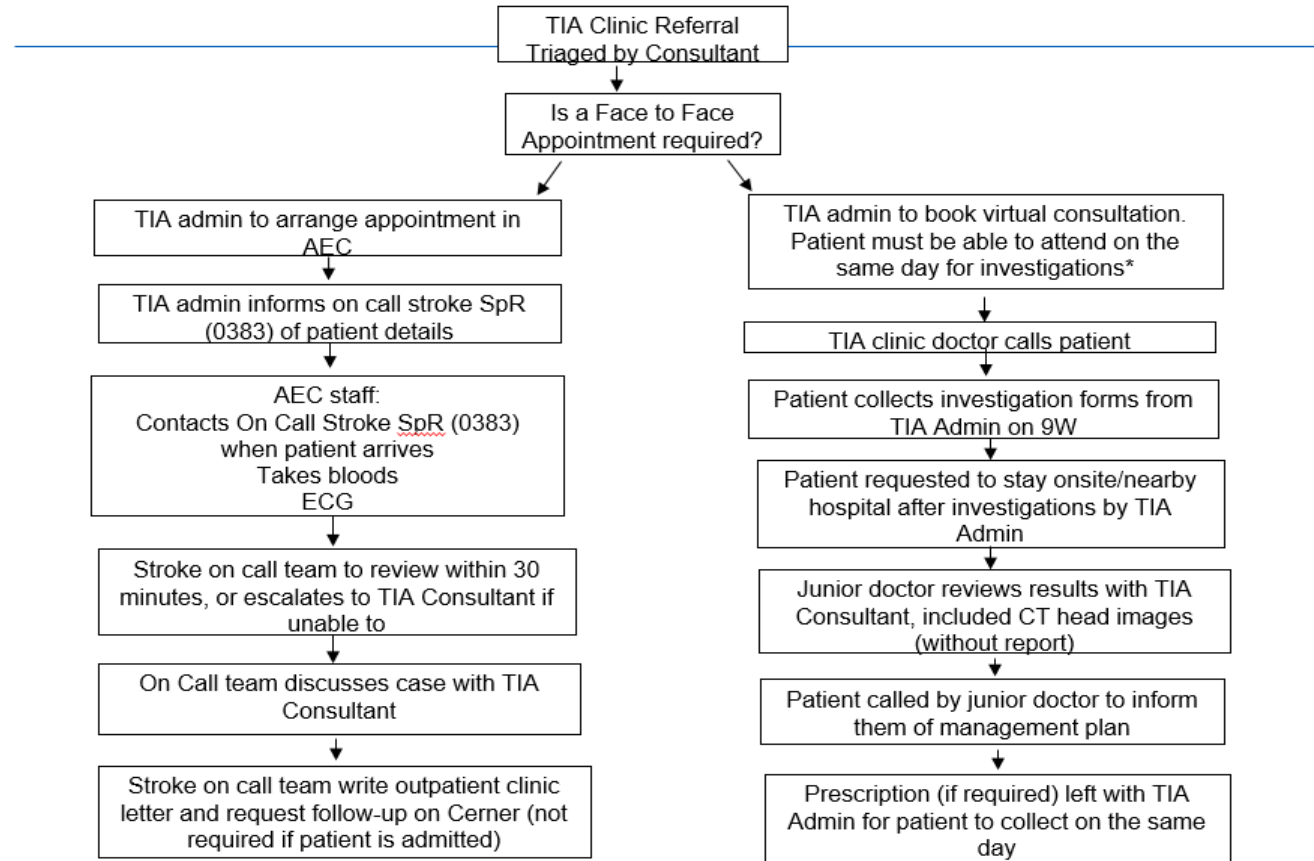


Management suggestions for first professionals for suspected TIA

- Start Aspirin 300mg stat, then continue till seen in the clinic.
- Start high intensity statin- e.g.; Atorvastatin 20-80mg OD.
- Blood pressure lowering therapy with any drug, if required.
- Advice the patient to **stop driving until assessed in the clinic.**
- Please do an ECG and give a copy to the patient.
- Ask patient to call 999 if any recurrence while waiting for clinic (FAST leaflet).
- If anyone has witnessed the episode please ask them to attend clinic as well.

TIA pathway- COVID response

Imperial College



TIA clinic junior doctor checks formal CT report, writes outpatient clinic letter and requests follow-up on Cerner

High-risk patients

Does the patient have any of these?

1. Known AF or currently in AF? Not anti-coagulated
2. More than one episode in one week
3. On warfarin or DOAC
4. A young patient with neck pain and TIA
5. Prosthetic valve and under coagulated

If 'yes' to any of these questions then patient is deemed **High risk**. Please arrange CT head and contact local stroke on-call team for urgent queries.

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- A study examined 2,416 people who had experienced an ischemic stroke. In 549 patients, TIAs were experienced prior to the ischemic stroke and in most cases occurred within the preceding seven days:
 - 17% occurring on the day of the stroke
 - 9% on the previous day
 - 43% at some point during the 7 days prior to the stroke. 2

Pooled analysis from population and RCTs (OXCASC, OCSP, UK-TIA and ECST)

Rothwell & Warlow, Neurology 2005;64:817

- Multiple and crescendo TIAs are the main predictors of stroke recurrence, derived from the univariate analysis of the patients with minor ischemic events.

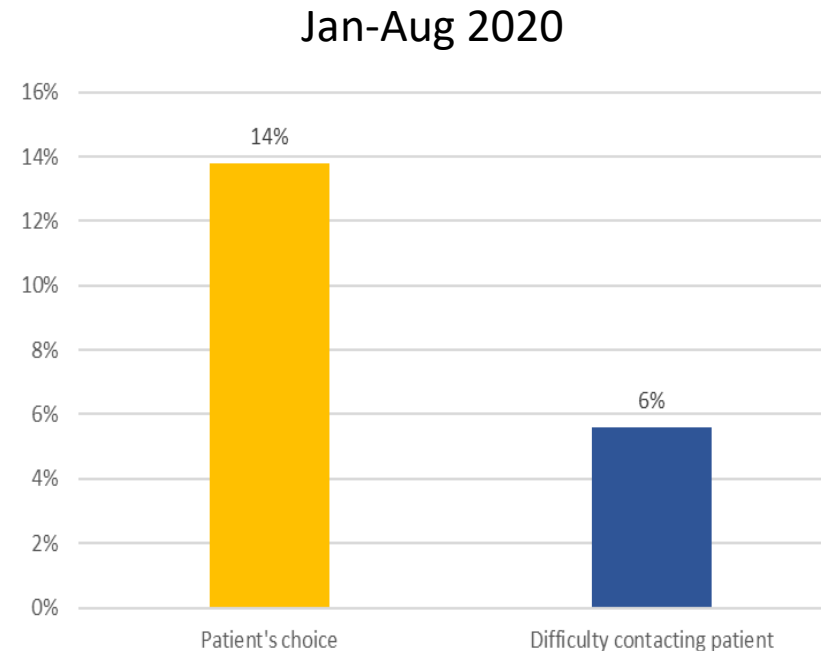
Reasons for delay

Two main reason derived from the data collected for the months of January to August

1. Patient choice
2. Difficulty contacting patients

Important points

- Patient must be informed that they will be getting a call on the same day or next day for an emergency TIA appointment.
- It must be explained that this is an emergency appointment and they should be available on the given phone number.
- Inform them that they will be sent for investigations in the hospital for various tests including CT scans, blood test, Doppler, ECG etc.



Are they been given these information's and are they aware that the appointments must be considered as emergency appointments?

Some other reasons for delays

- Insufficient history on the referral form- back and forth emails to GP practise to confirm the details
 - Mobility
- Referral form not sent in the correct format. (Photos or print illegible)
- Referral sent for patient who's postcode would not fall under CXH catchment area.
- Referral form not sent on the same day the patient was seen by GP or sent very late.

Referral form

Stroke

A stroke is a serious medical condition that occurs when the blood supply to part of the brain is cut off.

Strokes are a medical emergency and prompt treatment is essential – the sooner a person receives treatment for a stroke, the less damage is likely to happen. All our stroke patients are given a CT brain scan on the day of their admission, most within an hour, to help with diagnosis and to quickly assess any damage to the brain. Through our Trust's stroke centre, we offer immediate investigations, ongoing management and rehabilitation services for patients who have had strokes.

Survival rates for Imperial College Healthcare NHS Trust stroke patients are amongst the highest in the country. We admit approximately 1,700 patients per year through our hyper acute stroke unit, and receive around 900 emergency calls for patients who may be suitable for clot busting interventions.

Our Trust's stroke centre comprises:

- a **hyper acute stroke unit at Charing Cross Hospital**
- A thrombolysis (clot busting) service provided 24 hours a day, seven days a week within Charing Cross Hospital's emergency department
- a stroke unit at Charing Cross Hospital
- Transient ischaemic attack (TIA) 'mini stroke' investigation services at Charing Cross Hospital
- outpatient follow-up clinics at Charing Cross and St Mary's hospitals.

Locations

Charing Cross Hospital

St Mary's Hospital

[Clinic information](#)

Contact

OUTPATIENTS APPOINTMENTS
020 3313 5000

Quick links

[Meet the team](#)
[Patient information](#)
[Refer to this service](#)

Refer to this service

Find out how to refer patients to our stroke service.

LAST UPDATED 20TH FEB 2020

Quick links

[Clinics](#)
[Meet the team](#)
[Patient information](#)

GP referrals

If you suspect a stroke, please dial 999.

For acute inpatient referrals or to discuss any patients, please contact the on-call specialist registrar at Charing Cross Hospital via the main hospital switchboard.

Phone: 020 3311 1234
Bleep: 0383

Our clinical nurse specialists (CNS) are also available on site via the main hospital switchboard if you have any queries or would like further advice.

Phone: 020 3311 1234
Bleep: 3643 or 7967

TIA Referrals

Please [click here](#) to download a copy of the referral form for TIA, complete it and email it to our service

Email: imperial.tia.clinic@nhs.net

Checklist for the referrer

- Attach history summary and investigations (blood results/scan results etc)
- Does the patient require translator?
- Does the patient walk independently?
- Does the patient need transport?

CXH TIA clinic contact details

- Email: imperial.tia.clinic@nhs.net

- Weekdays enquiries

TIA clinic administrator- 0203 311 1255

Clinical Nurse specialist in stroke- Bleep 3643/0203 311
5445

- Weekday evenings/ Weekends

Stroke SpR- 0203 311 1234/ Bleep 0383