

## The Unconscious Patient (see also Head injury, Shock, Stroke, Poisoning, Status Epilepticus)

- Assess and treat ABC
- Measure temperature and test glucose with BM stick (treat hyperpyrexia or hypoglycaemia immediately)
- Get as much information as possible (from ambulance crew, relatives, old notes etc.)
- Do a full clinical assessment (including fundoscopy, search for injuries/rashes and neurological ex.)
- Assess depth of coma using Glasgow Coma Scale. Involve anaesthetist if GCS<11
- Causes to consider:

(1) Brain	Head injury
	CVA
	Fits
	Meningitis/ encephalitis
(2) Outside brain	Hypoglycaemia
	DKA
	Other metabolic
	Renal failure
	Hepatic failure
	Respiratory failure
	Cardiac failure
(3) Outside body	Drugs (especially E if hyperpyrexia)
	Alcohol
	C.O.
(4) Environment	Hypothermia
	Hysteria
- If no diagnosis after clinical examination, blood tests and x-rays, or if focal neurology consider urgent CT scan

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## Status Epilepticus– Adults (see also Unconscious Patient)

### Ask for senior advice

- ABC + oxygen by NRRM
  - Check blood glucose
  - IV diazepam up to 10 mg slowly iv
  - Always give phenytoin 15mg/kg by iv infusion (unless patient is on this already) (max 1g)
  - Consider 'Pabrinex' slow iv
  - Seek anaesthetic help
- 
- Consider paraldehyde
  - Consider phenobarbitone

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## CENTRAL NERVOUS SYSTEM

Seek an underlying cause especially:

- Focal neurology – CT
- Injury – CT
- Fever or sepsis – consider acyclovir + cefotaxime
- Poisoning – try to get more history

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One of the commonest causes of non-responding status is pseudoseizures – this diagnosis should only be considered by a very experienced doctor – seek help

### Fits, Faints and Funny Turns (see Status Epilepticus, Stroke, TIA)

Many will require outpatient investigation but few require admission, although patients who live alone should not be discharged alone; family help or a care package should be sought. Although alarming for patients, carers and doctors, most have a benign prognosis.

“Funny turn” describes an ill-defined episode of impaired consciousness from which the patient has more or less recovered by the time they reach Emergency Department. This is an extremely common presentation to Emergency Department so you must develop a good system for rapidly evaluating these patients. The cause for the funny turn is usually cardiovascular or neurological. A meticulous history including an eyewitness account is the single most important aid to diagnosis. What was the patient doing just before the attack? Ascertain whether or not consciousness was lost. If it was, rapid recovery suggests CVS cause while more gradual recovery suggests NS. Was there injury, tongue biting or incontinence? Is there a history or family history of heart disease or epilepsy?

(Contrary to popular belief, TIA is an uncommon cause for transient loss of consciousness.)

The term “Faint” should be reserved for a vasovagal episode, usually in younger patients. It is usually preceded by nausea, vomiting, and sweating and often relates to some kind of stressful situation. Some patients who faint will have a very brief convulsion especially if not allowed to lie flat.

A “Drop Attack” is a sudden falling to ground without loss of consciousness. Usually caused by a balance problem or postural hypotension.

A seizure may be ‘generalised’ or ‘partial’(+/- complex). A change to fit pattern usually merits admission to observation or medical ward. Beware of the post-ictal patient who has not fully recovered- always observe for a while and mobilise prior to discharge. Don't forget to exclude injury. Skull fracture and dislocated shoulder are the commonest.

A full history is imperative to include pre-morbid history, prodromal symptoms, length of time unconscious, degree of amnesia and confusion on recovery.

A neurological cause, for example, epilepsy, SAH, can often be identified by the history, examination and the appropriate referral made.

50% of all cases have a cardiac cause and again, these can be determined by history, examination and ECG. Investigate and treat accordingly.

The remaining cases can be classified under five categories

### **1. Simple Faint**

Definite provocational factors with associated prodromal symptoms and which are unlikely to occur whilst sitting or lying.

Benign in nature.

If recurrent, will need to check the 3 "Ps" apply on each occasion

Provocation Prodrome Postural

(If not see Number 3 below).

### **2. Loss of consciousness/ loss of or altered awareness likely to be unexplained syncope and low risk of re-occurrence**

These have no relevant abnormality on CVS and neurological examination and normal ECG.

### **3. Loss of consciousness/ loss of or altered awareness unlikely to be unexplained syncope and high risk of re-occurrence**

Factors indicating high risk:

- (a) abnormal ECG
- (b) clinical evidence of structural heart disease
- (c) syncope causing injury, occurring at the wheel or whilst sitting or lying
- (d) more than one episode in previous six months.

Further investigations such as ambulatory ECG (48hrs), echocardiography and exercise testing may be indicated after specialist opinion has been sought.

### **4. Presumed loss of consciousness/loss of or altered awareness with seizure markers**

The category is for those where there is a strong clinical suspicion of epilepsy but no definite evidence.

The seizure markers act as indicators and are not absolutes

- unconsciousness for more than 5 mins.
- amnesia greater than 5 mins
- injury
- tongue biting
- incontinence
- remain conscious but with confused behaviour
- headache post attack

### **5. Loss of consciousness/loss of or altered awareness with no clinical pointers**

This category will have had appropriate neurology and cardiac opinion and investigations but with no abnormality detected.

All patients should have their medication list scrutinised as well as thorough CVS and NS examination, including erect & supine BP (wait 1 min and 3 mins to check erect BP) and auscultation of the neck. An ECG must be recorded – any arrhythmia or a QTc > 460mseconds is an indication for cardiac referral. Follow up investigations – either 24hour tape or CT Brain/EEG etc can be requested via Emergency Department consultant depending on the working diagnosis. Patients with evidence of structural heart disease or with exertional syncope have a higher incidence of underlying disorder. Young adults who have a combination of recurrent syncope along with additional other cardiac symptoms such as palpitations, dyspnoea or chest pain have a high index of suspicion for a serious underlying condition even with abnormal ECG – admission to Obs on a monitor, or cardiac referral is usually warranted. Patients who have had a first seizure must be admitted to the Obs ward but epileptic patients who are fully recovered can be discharged if supervised.

### Headaches (see Meningococcal disease)

- Discuss all ill patients with a senior doctor.
- A high risk symptom!

Be careful of this presentation to Emergency Department. All patients (including those who have had a CT scan) should be reviewed by GP if not admitted. Temp, fundoscopy and BP are always mandatory.

#### Red flag symptoms

Worst ever headache –maximum intensity within one hour.

Prolonged headache.

Vomiting more than once or

Fainting/collapse

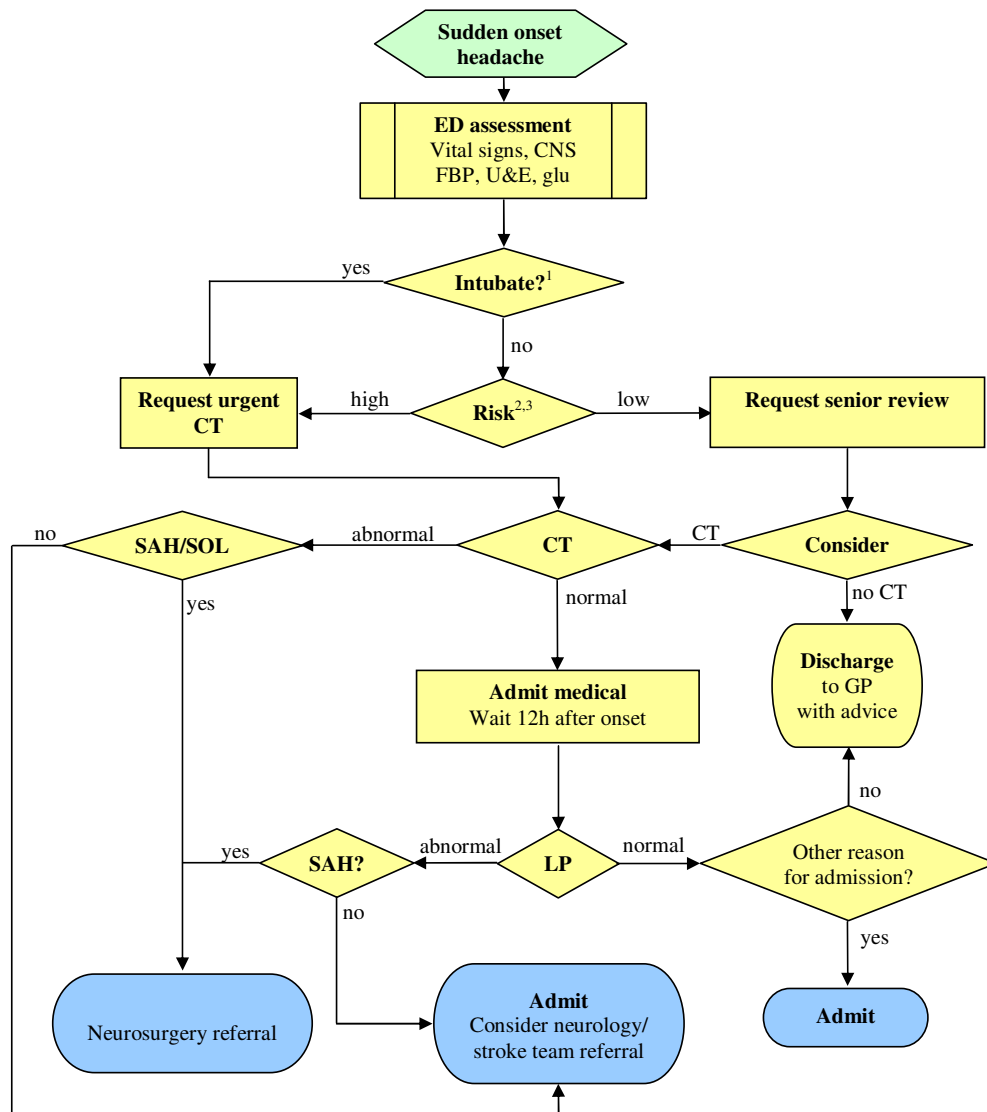
These 'Red Flag' symptoms are very significant – CT Scan is usually required. Fever and Meningism are also strong risk factors for a serious cause.

Don't miss:	Sub-arachnoid haemorrhage (usually sudden onset; reaches maximum intensity within 60 mins)
	Meningitis (fever and/or rash)
	Encephalitis (fever, ataxia, drowsiness/confusion)
	Raised ICP (CNS signs or papilloedema, typical symptoms)
	Temporal arteritis (older patients -check ESR if age >60)

Common causes are migraine, neck problems and "tension". If a patient has symptoms suggesting migraine and there are no contra-indications, use "Imigran" subcutaneously and re-evaluate after 30 mins. For patients with cluster headaches (severe migraine-type headaches with nasal stuffiness and lacrimation that come in "clusters" lasting several days) 100% oxygen via NRRM may produce a dramatic improvement.

A normal CT scan does not rule out sub-arachnoid haemorrhage and sensitivity decreases with time – Day 1 95% sensitivity, day 7 50% sensitivity. If sub-arachnoid haemorrhage is the working diagnosis then the patient will need to be admitted for lumbar puncture.

## Sudden Onset Headache Pathway



1. **Intubate** if any of: airway compromise / inadequate respiration / GCS≤8 (consider if <12), hypoxia (SaO<sub>2</sub><92% on supplemental O<sub>2</sub> or pO<sub>2</sub><8kPa), hypercarbia (pCO<sub>2</sub>>5.5kPa)
2. **High risk** = any of: GCS<15 / persistent vomiting / previous SAH / fits / neck rigidity / focal neurological signs. **If deteriorating request immediate CT.**
3. **If on Warfarin** check INR and request **immediate CT**. If INR>1.5 and +ve scan: reverse as per acute Warfarin protocol.

**Stroke**

- *A time dependant condition*

**HYPERACUTE STROKE**

There is now good evidence that emergency lysis of hyperacute THROMBOTIC stroke within 4 hours of onset of attack is of significant benefit to SELECTED patients.

This makes assessment of suspected acute stroke a top priority medical emergency.

The steps below should be taken SIMULTANEOUSLY as far as possible ie work through the contra-indication checklist, speak to the consultant, set up the scan while resuscitation is getting underway; remember that a considerable portion of the 4 hour window may have elapsed by the time the patient reaches you.

Assessment of patients should be rapid with the stroke team.

Many of these patients will be pre alerted by the NIAS in these cases bleep the stroke team by dialling 6000 and ask for the stroke team BEFORE the patient arrives in the ED.

For patients self presenting perform ROSIER SCORE and contact the stroke team if positive

**ROSIER SCORE**

Unsure if patient has had an Acute Stroke? – Use the Rosier Score

Rosier Scale Proforma

BM = Blood Glucose; BP = Blood Pressure (mm Hg); GCS = Glasgow Coma Scale; E = Eye; M = Motor;

V = verbal component

\*If BM <3.5mmol/L treat urgently and reassess once blood glucose normal

- |    |  |            |
|----|--|------------|
| 1. | Has there been loss of consciousness or syncope? | Y(-1) N(0) |
| 2. | Has there been seizure activity?                 | Y(-1) N(0) |

Is there is a NEW ACUTE onset (or on awakening from sleep)

- |      |                            |            |
|------|----------------------------|------------|
| i.   | Asymmetric facial weakness | Y(+1) N(0) |
| ii.  | Asymmetric arm weakness    | Y(+1) N(0) |
| iii. | Asymmetric leg weakness    | Y(+1) N(0) |
| iv.  | Speech disturbance         | Y(+1) N(0) |
| v.   | Visual field defect        | Y(+1) N(0) |

\*Total score \_\_\_\_\_ (-2 to +5)

Provisional diagnosis

Stroke Non-stroke (specify) \_\_\_\_\_

## After care

Patients require close observation and nursing and continuous monitoring following lysis. They should be moved to an appropriate bed as soon as possible. Blood pressure must be maintained below 180/105 mmHg during this period, and liberal use of drugs such as labetalol or sodium nitroprusside may be required – this must be consultant led. Any deterioration including headache, neurology, vomiting – contact the consultant immediately. Stop rt-PA. Send coag and cross-match sample. Arrange re-scan. D/W haematologist re emergency administration of cryoprecipitate and platelets.

## Other stroke patients

Even if they are not eligible for lysis, stroke patient will benefit from the other evidence based interventions

- IV fluids/Fluid Balance Chart and nil orally until swallowing has been assessed
- temperature regulation- paracetamol if temp>37.5
- blood glucose regulation- sliding scale insulin
- blood pressure control- over next 24hrs (*not acutely*)
- early admission to a Stroke Unit

They may also require and urgent CT scan as anti-haemorrhagic therapy ( see page83), antispasmodic and/or neurosurgical involvement may be indicated.

## URGENT CT SCAN?

- Diagnosis in doubt
- Suspected SAH
- Suspected hydrocephalus 2<sup>o</sup> to CVA
- On warfarin or heparin (or coagulopathy)
- Acutely deteriorating
- >48 hours since onset

There are four evidence-based treatment interventions for acute stroke:

- iv fluids/Fluid Balance Chart and nil orally until swallowing has been assessed
- temperature regulation- paracetamol if temp>37.5
- blood glucose regulation- sliding scale insulin
- blood pressure control- over next 24hrs (*not acutely*)

## Transient Ischaemic Attack (TIA)

Like stroke, TIA is the result of carotid- or vertebro-basilar territory ischaemia. It is common in older patients but it can occasionally occur in the young, usually due to an undiagnosed cardiac lesion or thrombophilia. Migraine or Todd's paresis can mimic stroke but this is a diagnosis for a senior clinician only.

TIA is abrupt in onset, focal and completely resolved within 24hours. The signs fall within a vascular territory such that there are negative symptoms i.e. something is absent.

Patients who have persistent neurology and signs, new AF or cardiac murmurs, significant hypertension or are high risk should be admitted.

Risk Assessment 'ABCD2 score

- Age [ $>60$  yrs = 1]
- BP [systolic  $>140$  and/or diastolic  $>90$  = 1]
- Clinical features [unilateral weakness = 2, speech disturbance alone=1, other=0]
- Duration of symptoms [ $>60$  min=2, 10-59=1,  $<10$ =0]
- Diabetes [yes = 1]

Patients who have had a number of resolving TIA's in the days prior should be CT scanned and admitted. Patients on Warfarin should be admitted.

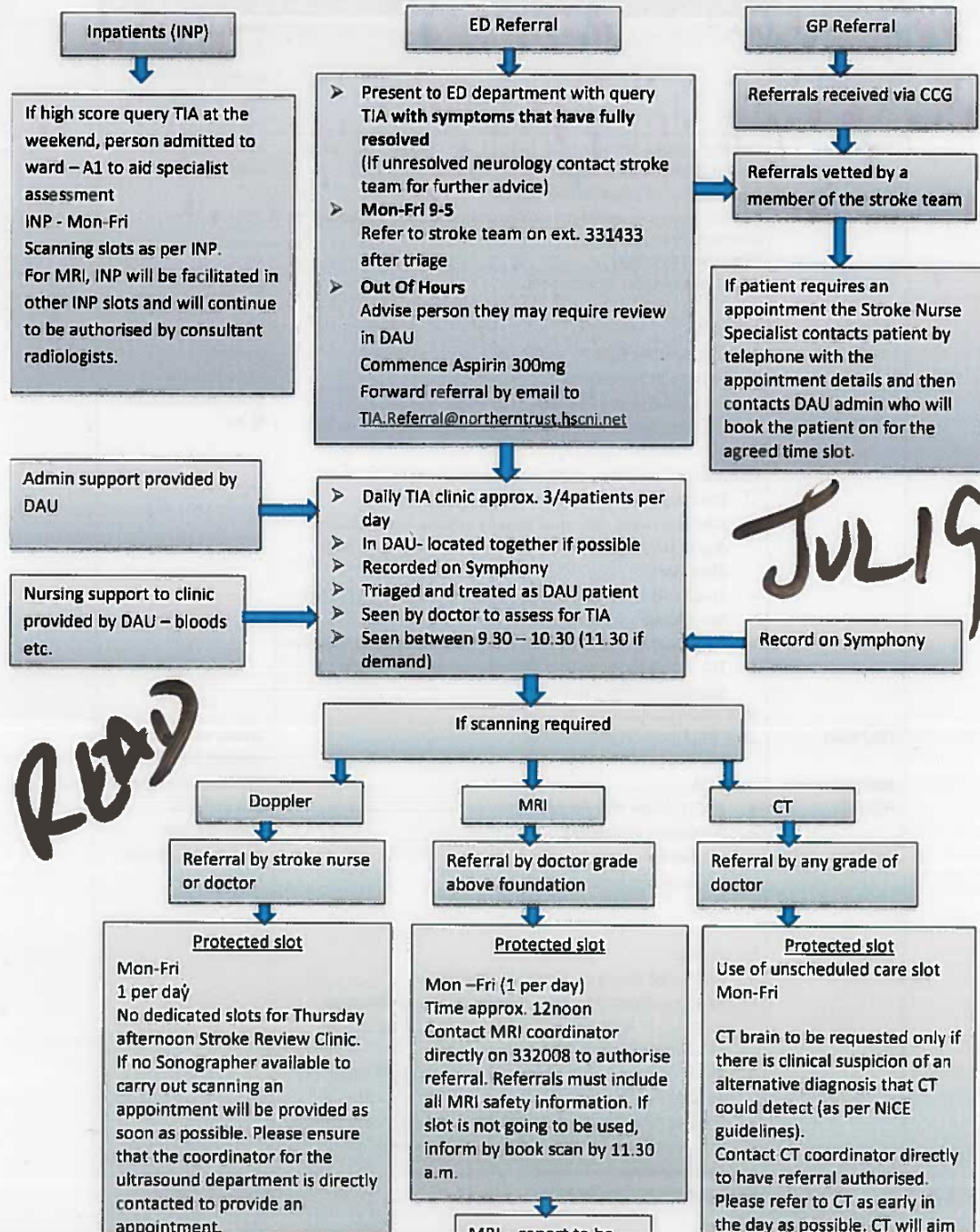
If completely resolved, the patient is low risk and there are no contra-indications, commence aspirin and refer to TIA clinic. ABCD score of 6 more ADMIT. (this is different from CREST)

The ward clerks will fax referral if you ask them



**Pathway for query TIA/TIA**  
**Monday-Friday 9am – 5pm, Antrim Hospital**  
**Daily TIA Clinic Access**

*JULY 19*



*READY*

*JUL 19*