Syncope

Definition

- Transient LOC and loss of posture secondary to insufficient cerebral perfusion.
- Common – >25% lifetime incidence, 1% ED presentations
- Incidence increases with age

Causes

- Up to 50% no cause found.
- Important to differentiate between seizure & syncope.

Reflex

- Vasovagal – unexpected/unpleasant sensation, pain, prolonged enclosed standing/kneeling
- Situational – straining against a closed glottis (cough, micturition, defecation, swallow, trigeminal neuralgia)
- Carotid sinus syndrome (head turning, tight collar)
- Breath holding attacks in paeds

Cardiac

- Structural – valvular, AS (Stokes Adam attack – fixed CO with exercise), TS, MS, cardiomyopathy, pulm HT, CHD, myxoma, pericardial, PE, AMI, dissection
- Arrhythmias – brady, Mobitz II 2nd deg or 3rd deg block, VT, SVT, AF/flutter, Brugada syndrome, long QT, sinus pause
- Pacemaker failure

Orthostatic Hypotension

- Hypovolaemia – haemorrhage (AAA, GI, trauma), Addisonian crisis, fluid loss (burns, D/V, third space, dehydration)

Medication

- Cardiac – BB, dig, CCB, nitrates, diuretics, anti-HT
- Other –, anti-psychotics (phenothazines), anti-depressants, anti-Parkinsons
- Party – cocaine, alcohol, sidenafil

Neurologic – TIA, migraine, SAH, Shy-Drager, (seizure - DDx), subclavian steal syndrome

Psychiatric – Up to 50% in young adults

Other – Anaemia, hypoglycaemia

Assessment

- Preceeding events often key to making a diagnosis:
  - Position/Env - prolonged standing (reflex), on standing (orthostatic), stress (vasovagal)
  - Sweating, lightheadedness, nausea (vasovagal or orthostatic)
  - Chest pain, palpitations or sudden onset without prodrome (cardiac/arrhythmia)
  - Exertion (AS, HOCM, VT, long QT)
  - Upper limb exercise (subclavian steal syndrome)
  - Head turning, neck compression, shaving (carotid sinus syncope)
- Distinguish from seizures (tonic-clonic movements, longer LOC, post-ictal, tongue biting)
- Past medical history of syncope, cardiac disease
- Family history of sudden cardiac death
- Medications/drugs used

Examination

- Vitals – Difference in pulses/BP in arms (subclavian steal, dissection). Orthostatic hypotension – symptomatic drop BPsys ≥20mm on standing from supine.
- CVS – murmurs, added heart sounds
- Resp – SOB
- Abdo - PR – occult GI haemorrhage
- Neuro – any defcits
- Injuries from syncope
- Autonomic dysfunction – impotence, anhydrosis, sphincter dysfunction (Shy Drager)

Investigations

Bedside:

- ECG
- BSL

Lab testing – limited value:

- Troponin not useful unless CP or abnormal ECG
- FBC if clinically anaemic or blood loss suspected.
- βhCG

Imaging:

- CXR, ECHO if cardiac cause suspected

ED Provocation tests (not routinely done):

- Carotid sinus massage
- Hyperventilation (psych cause)

Outpatient:

- Tilt table testing
- Holter monitor

Treatment

- Treat underlying cause
- Consider admission for possible cardiac cause, significant bleeding, unsupervised social situation, or high risk

Syncope CHESS Rule

2004 San Francisco Rules for short term (7-30d) serious outcome (death, MI, arrhythmia, PE, CVA, SAH, transfusion, return ED visit) risk (96% sens, 62% spec) in undifferentiated syncope:

Risk factors:

- **C**CF
- **H**aematocrit<30%
- **E**CG abnormal
- **S**OB
- **S**ystolic BP<90mmHg at triage

Some validation studies of CHESS rule have shown considerably less sensitivity & specificity, but other studies have identified (1) age >65 years; (2) history of CCF; (3) an abnormal ECG as consistent high risk factors. So reasonable to stratify as high risk on **CHESS** criteria and 2 extra factors **E**lderly and **F**amily Hx of sudden death.

Prognosis

Syncope+cardiac cause=2xmort, +neuro cause=1.5xmort, +unknown=1.3xmort, +reflex=<1xmort.