Loss of consciousness and how to assess it

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Outline

- Common causes of loss of consciousness.
- How to assess loss of consciousness.
- Emergency management of a patient with loss of consciousness.

Common causes of loss of consciousness

- Alterations in pO_2 (hypoxia) and/or PCO_2 (hyper/hypocapnia)- inadequate airway, inadequate ventilation or depressed respiratory drive, persistent hyperventilation
- Inadequate perfusion- hypovolaemia, cardiac arrhythmias, distributive shock, neurogenic shock, raised intracranial pressure
- Altered metabolic states- hypoglycaemia/hyperglycaemia
- Intoxication or poisoning- drug overdose, alcohol intoxication, carbon monoxide poisoning
- Medical conditions- stroke, subarachnoid haemorrhage, epilepsy, meningitis, hypo/hyperthermia
- Head injury- raised intracranial pressure

Transient loss of consciousness accounts for 5% of emergency department visits with the commonest causes being cardiovascular and epileptic, although metabolic and psychiatric causes are also important.

History

- It is important to try and establish the cause of decreased consciousness. Ask the patient and any witnesses what happened before, during and after the event. It is important to record details such as:

- Circumstances of the event
- Prodromal symptoms (eg. Sweating, feeling warm)
- Appearance and colour of patient's skin
- Presence or absence of movement during the event
- Any tongue-biting
- Duration of event
- Injury occurring during the event (record sight and severity)
- Presence or absence of confusion during the recovery period
- Weakness down one side during the recovery period

History continued…..

- Details of any previous loss of consciousness
- Medical and family history especially for cardiac disease
- Any history of trauma
- Current medication that may have contributed to loss of consciousness (eg. Diuretics)

Rapid assessment!

The primary survey should be used to assess and detect any time critical problems.

An abbreviated coma scale, AVPU, is sometimes used in the initial assessment of the critically ill to assess level of consciousness:

- A- Alert
- V- responds to Voice
- P- responds to Pain
- U- unresponsive

- Assess and note pupil size, equality and response to light.
- Check for purposeful movement of all four limbs and note sensory function.
- Assess blood glucose level: if hypoglycaemic- administer glucose 10%
- Look for any significant injuries (especially to head)

Glasgow Coma Scale Assessment

This gives a reliable objective way of recording the conscious state of a person. It can be used for initial and continuing assessment and has value in predicting ultimate outcome.

An overall score is made by adding the score in the three areas assessed.

Generally, brain injury is classified as:

Severe injury: <8
Moderate injury: 9-12
Minor injury: 13-15

GLASGOW COMA SCALE	
Item	**Score**
Eyes Opening:	
Spontaneously	4
To speech	3
To pain	2
None	1
Motor Response:	
Obeys commands	6
Localises pain	5
Withdraws from pain	4
Abnormal flexion	3
Extensor response	2
No response to pain	1
Verbal Response:	
Orientated	5
Confused	4
Inappropriate words	3
Incomprehensible sounds	2
No verbal response	1

If non time critical…..

Perform a more thorough assessment and secondary survey:

- Any evidence of trauma
- Breath for ketones, alcohol, solvents
- Evidence of needle tracks/marks
- Medical alert type jewellery- eg. Diabetes, anaphylaxis
- Patient held warning cards eg. For those taking monoamine oxidase inhibitors

Emergency Management

- Start correcting:
- Airway
- Breathing
- Circulation
- Disability

- Administer high concentration oxygen via a non-re-breathing mask.
- Obtain IV access
- Apply pulse oximetry and 12-lead ECG monitoring for detection of hidden hypoxia and arrhythmias

Specifically consider:

- Immobilising cervical spine if any suspicion of trauma
- In case of severe respiratory depression/arrest support ventilation at a rate of 12-20 breaths per minute if: SpO_2 is <90% on high concentration of O_2, RR is <10 or >30, expansion is inadequate or if the level of consciousness deteriorates.

Red Flags?

Referral for specialist cardiovascular assessment must be made if any of the following red flags are present:

- an **ECG** abnormality: conduction abnormality (for example, complete right or left bundle branch block or any degree of heart block), evidence of a long or short QT interval, any ST segment or T wave abnormalities.
- heart failure (history or physical signs)
- Transient loss of consciousness during exertion
- family history of sudden cardiac death in people aged younger than 40 years and/or an inherited cardiac condition
- new or unexplained breathlessness
- a heart murmur.
- Consider referring within 24 hours anyone aged older than 65 years who has experienced transient loss of consciousness without prodromal symptoms.

No red flags….

Assess for uncomplicated faint by checking:

- That there are no features suggesting an alternative diagnosis **and**
- there are features suggestive of uncomplicated faint (the 3 'P's) such as:
  - **P**osture (prolonged standing, or similar episodes that have been prevented by lying down)
  - **P**rovoking factors (such as pain or a medical procedure)
  - **P**rodromal symptoms (such as sweating or feeling warm/hot before event).

If uncomplicated faint is ruled out, then orthostatic hypotension and epilepsy must be considered:

Epilepsy:

Person presents with one or more of the following features suggestive of epileptic seizures:

- a bitten tongue
- head-turning to one side during the event
- no memory of abnormal behaviour that was witnessed before, during or after the event by someone else
- unusual posturing
- prolonged limb-jerking (note that brief seizure-like activity can occur during an uncomplicated faint and is not necessarily diagnostic of epilepsy)
- confusion after the event
- Prodromal déjà vu or jamais vu.

Orthostatic hypotension:

- Measure lying and standing blood pressure – repeat measurements while standing for 3 minutes.

Key Points

- Maintain patent airway
- Support ventilation if required
- Address treatable causes
- History- obtain as much information as possible