

Medi Quest BRS Hospital

A monthly News letter from BRS Hospital

Approach to an Unconscious Patient

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An unconscious patient is one of the most daunting things to treat. Be it someone who became unconscious in the hospital or someone who was brought in an unconscious state to the hospital, its important to keep a calm and collected mind and approach this patient in a systematic way. But before we start to approach the patient, we need to understand the underlying mechanisms that cause unconsciousness.

Pathophysiology

Unconscious patient is a broad term. It doesn't really give the health care worker a lot of information about what the patient is going through. Consciousness is a spectrum ranging from alert but disoriented, drowsy but arousable with stimuli, to comatose in which there is no response to any stimulus. It's important to note that not all unconsciousness patients are the same. Some will take much longer to recover than others.

The main mechanisms causing unconsciousness are broadly divided into two. Firstly there is diffuse damage to

the cerebral hemispheres which is seen in conditions like hypoglycemia or metabolic encephalopathy. The other is a damage to the ascending reticular activating system or thalamus which can happen with damage to the brain stem which can happen in cases of cervical trauma or certain toxicities for example.

What to think about ?

There are four main categories of ethologies that can lead to unconsciousness – neurological, metabolic, diffuse physiologic brain dysfunction and psychiatric. Thinking about differentials in terms of these categories can be helpful because each of these categories has specific symptoms attached to it which can help narrow down the diagnosis.

Neurological	Metabolic	Diffuse physiological brain dysfunction	Psychiatric
Ischemic stroke	Hypoglycemia	Seizure disorder	Psychiatric coma
Intracerebral hemorrhage	Hyperglycemia	Alcohol	Malingering
Subarachnoid hemorrhage	Hyponatremia	Opioid	
Subdural hemorrhage	Hypernatremia	Poisoning	
Brain tumor	Hypercalcemia	Hypothermia	
Cerebral lymphoma	Addisonian crisis	Neuroleptic malignant syndrome	
Brain metastasis	Hypothyroidism	Serotonin syndrome	
CNS infection	Uremia		
Anoxic brain injury	Hypercapnia		
Cerebral edema	Septic / hepatic encephalopathy		

Neurological causes, for example, are likely to have antecedent complaints of headache, seizure, or cranial nerve symptoms like blurring of vision, facial deviation. These may precede the onset of unconsciousness.

Metabolic conditions like hypoglycemia and hyponatremia which are commonly seen, especially in geriatric populations are usually associated with a slow deterioration of the level of consciousness.

Conditions causing diffuse brain dysfunction can sometimes be traced back to substance abuse or other exposure which can precipitate a fall in consciousness levels. Psychiatric causes usually have antecedent history of mental illnesses or its symptoms.

How to evaluate Unconsciousness?

Contrary to how we treat normal patients with intact

consciousness, the treatment of unconscious patient starts with a few key examination points first. You need these examination findings to ask pointed questions in your history taking. So what are the primary examination or primary survey things to focus on?

1. Look for any overt trauma – lacerations or swellings, especially over the head and neck
2. Airway, breathing and circulation to be assessed and vital parameters obtained
3. Blood sugar levels
4. Pupil size and reactivity
5. Glasgow coma scale

6. Any overt neurological deficit.

Once you have done the primary survey, you can then speak to the relatives or the people who were present at the scene when the patient became unconscious and ask relevant history.

Important questions you must ask are:

1. History of any trauma or fall / headache prior to unconsciousness
2. History of seizures
3. History of symptoms suggestive of neurodeficit prior to unconsciousness
4. History of bleeding from ear, nose or throat
5. History of substance abuse
6. History of psychiatric illness

How to treat the unconscious patient?

Most of the care in an unconscious patient is aimed at the underlying cause. So the first 4-12 hours are usually dedicated to finding that cause. Causes like hypoglycemia and poisoning can be treated immediately. However, metabolic and neurological causes require the blood work to be available and imaging to be done.

So the focus of treatment in the unconscious patient is on supportive measures until actionable information is available.

Here are step by step supportive measures that need to be undertaken:

1. Head up position 30-45 degrees (unless there is cervical trauma, in which case patient should be kept flat)

2. If pupil size is unequal, start on Manitol or other anti edema measures

3. If there is antecedent seizure history, start on Inj Levipill 1g intravenously.

4. In case of hypoglycemia, start IV glucose immediately.

5. IV fluids with Inj Thiamine are recommended in hypoglycemic patients and patients with history of alcohol abuse.

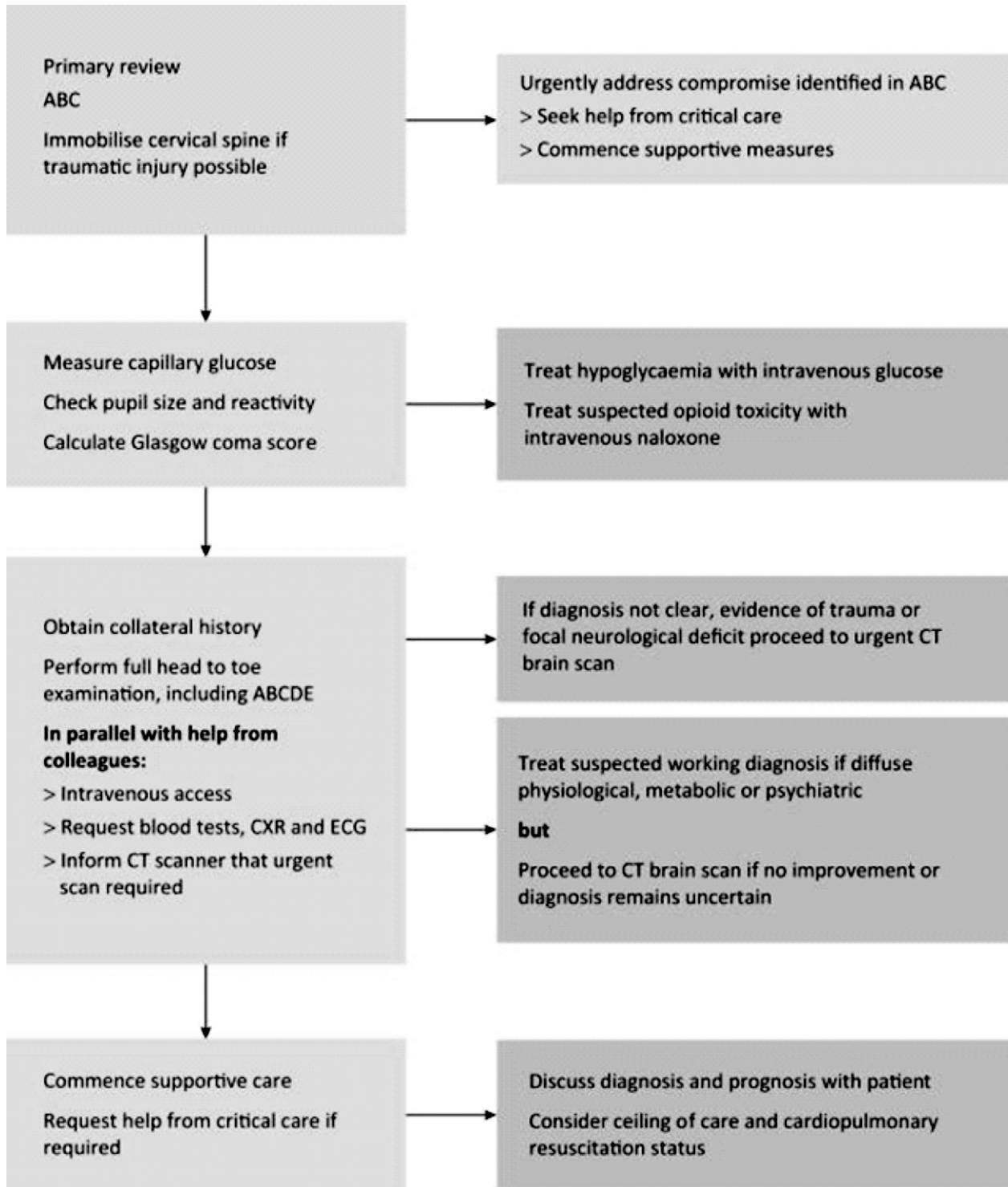
6. Supplemental oxygen support if needed. If GCS is less than 8, consider mechanical or assisted ventilation (ABG will help assess the presence of central hypoventilation syndrome)

7. Trace electrolytes urgently and correct any dyselectrolytemia.

In today's day and age, it's important to get imaging done for all patients with unconsciousness. A CT brain is time sensitive but an MRI brain, which is expensive, will provide you with more information. A good rule of thumb to remember is that patients who have a clean neuroimaging study will typically have a reversible cause of unconsciousness. It's just a matter of finding it.

Conclusion

Treatment of patients who are unconscious is about systematically collecting relevant information and providing adequate supportive care until actionable information becomes available. In this process, it is important to be calm and collected and ensure that frequent reassessment and course correction is done the supportive treatment being provided.



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