

THE CONFUSED PATIENT



DETECTING DETERIORATION, EVALUATION, TREATMENT,
ESCALATION, AND COMMUNICATING IN TEAMS

2ND EDITION 2009

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Editors:

T Jacques, M Fisher, K Hillman, K Fraser

Authors:

T Jacques, M Fisher, K Hillman, M Berry, C Hughes, D Lam, B Manasiev, R Morris, N Nguyen, R Pandit, A Pile, P Saul

Illustrations:

Janet Fong, Sally Fong, Kathy Mak

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David Harmata – “Bladder and Kidneys”

Rachael Vromans – “Worry Symbol”

Contributors and Institutions

St George Hospital: Theresa Jacques, Rahul Pandit, Doris Lam, Nhi Nguyen, Richard Morris, Bobby Manasiev

Royal North Shore Hospital: Malcolm Fisher

Liverpool Hospital: Ken Hillman

St Vincent’s Hospital: Alex Pile, Min Berry

John Hunter Hospital: Peter Saul

Greater Metropolitan Clinical Taskforce: Kylie Fraser

Clinical Excellence Commission: Cliff Hughes

Endorsed by the Clinical Excellence Commission

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AIM

The aim of this chapter is to give you the knowledge to be able to:

- recognise the warning signs associated with an altered conscious state;
- understand the causes and consequences of an altered conscious state;
- institute the initial management for confusion, delirium, altered conscious state and seizures, and call for help.

<i>Early Warning Signs</i>	
SBP 80–100 mmHg	SpO ₂ 90–95%,
SBP 181–240 mmHg	PaO ₂ 50–60 mmHg, PaCO ₂ 50–60 mmHg
GCS 9–11 or alteration in mentation/ a drop of 2 points in GCS	BSL 1–2.9 mmol/L
Any seizure	BSL 16–25 mmol/L

Table 15

<i>Late Warning Signs</i>	
*SBP <80 mmHg	SpO ₂ <90%
SBP >240 mmHg	PaO ₂ <50 mmHg , PCO ₂ >60 mmHg
*Unresponsive to verbal command	BSL <1 mmol/L
*GCS ≤8	BSL >25 mmol/L
*2 or more seizures with no return to baseline state of consciousness	

Table 16

* = common MET call criteria

PATHOPHYSIOLOGY

Many of the early and late warning signs (Tables 15 and 16) could be causing confusion, delirium or combativeness. It is important to exclude pathophysiological causes before treating symptomatically with sedation or chemical restraints. Some form of altered mentation is very common in the acute ward setting. Further down the slippery slope of central nervous system problems, coma or unresponsiveness to verbal command is also a common problem. These are all associated with increased risk of death and cardiac arrest.



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<i>Early Warning Signs associated with altered conscious state</i>	
Altered mentation / GCS <12 or a drop in GCS of 2 points or more	BSL 1–2.9 mmol/L
Any seizures	

Table 17

<i>Late Warning Signs associated with altered conscious state</i>	
*Unresponsive to verbal command	BSL <1 mmol/L
*GCS ≤8	

Table 18

* = common MET call criteria

CAUSES OF CONFUSION, DELIRIUM AND ALTERED CONSCIOUS STATE

Altered conscious level can be caused by intracranial or systemic causes.

Using the ABCDEFG algorithm, work through the possible causes (Table 19) giving appropriate priority to the A, B & C when required.

CONFUSION

Confusion is a common symptom. It involves disorientation in person, time and place plus or minus some memory loss. It may be acute or chronic. It may not involve a pathological cause but these must be excluded. Systemic problems such as shock or sepsis are important possible causes. See Table 19 for other important causes.

CONFUSION IN THE ELDERLY

Confusion in the elderly is common. It is important to maintain their dignity. Don't be confrontational when communicating. It may be helpful to get a relative to talk and listen to them. Leave the light on and make sure they can't fall. Don't dismiss as "normal for them" until you have excluded possible causes including sepsis and hypoxia.

DELIRIUM

Delirium is a clinical syndrome which involves the symptom confusion. It is important to determine if there is a delirium in the confused patient. Delirium is acute, developing over hours to days and it tends to fluctuate. It also involves altered consciousness and cognition and inability to focus. The patient is out of touch with their surroundings. A delirium can develop quickly and may be associated with extremes of behaviour, delusions or hallucinations and aggression. Patients can wear themselves out with increased motor activity though this is less common than decreased activity and flattened affect. It is important to protect the patient and yourselves. A delirium may be reversed with appropriate treatment



Delirium is a medical emergency. You must escalate using your local rapid response system

<i>Causes of confusion, delirium and altered conscious state (WHIMPS)¹</i>	
Withdrawal from or ingestion of drugs and alcohol	Hyponatraemia
Wernicke's encephalopathy	Haemorrhage (epidural, subdural, intracranial) and head injury
Hypoxia	Infection
Hypercapnia	Meningitis/encephalitis
Hypotension	Poisoning
Hypertensive encephalopathy	Pain
Hypoglycaemia, hyperglycaemia	Seizures
Hypothermia	Stroke
Hypothyroidism	System failure – cardiac, respiratory, liver, renal and endocrine failure

Table 19

CONSEQUENCES



A reduction in level of consciousness can lead to serious complications that include airway obstruction, aspiration and pressure sores. The underlying aetiology of the loss of consciousness may lead to cerebral damage.

RECOGNITION AND ASSESSMENT

It is important to pick up changes in conscious state and not to dismiss confusion without exploring the possible causes. The AVPU scale and the Glasgow Coma Scale are commonly used tools for rapid assessment of a patient's level of consciousness.

¹ The 'WHIMPS' mnemonic is used in Irwin and Rippe's Manual of Intensive Care Medicine 4th Edition. It is adapted from Tesar GE and Stern TA. Evaluation and treatment of agitation in the intensive care unit. J Intensive Care Med 1986; 1: 137-148.

AVPU SCALE – A SIMPLE SCALE FOR ASSESSING CONSCIOUS STATE

A = Alert

V = Responds to voice

P = Responds to pain

U = Unresponsive

For a deterioration from 'A' to 'V', look for causes and consider a call for medical review. For 'P' and 'U', activate your Rapid Response System.

GLASGOW COMA SCALE

The Glasgow Coma Scale (GCS) is a more detailed assessment of neurological state commonly used in neurological wards, emergency departments and ICUs. The maximum score is 15 and to score this the patient must be fully awake. Note that the lowest GCS is 3 (not 0!). If one side of the patient is weaker the score is derived from the best response. You should note the asymmetry.



A person with a GCS of 8 or less has a compromised airway which needs securing as a matter of priority. Call your Rapid Response Team.

GLASGOW COMA SCORE

Eye opening	Spontaneous	4
	To speech	3
	To pain	2
	Nil	1
Best motor response	Obeys commands	6
	Localises to pain	5
	Withdraws to pain	4
	Abnormal flexion to pain	3
	Extensor response to pain	2
	Nil	1
Best verbal response	Oriented	5
	Confused	4
	Inappropriate words	3
	Incomprehensible sounds	2
	Nil	1

History and physical examination provide important clues to the aetiology of altered consciousness. Don't forget to test the pupillary light response.



An unreactive dilated pupil with or without focal neurological signs strongly suggests an intracerebral cause and requires urgent senior attention. If you have an unconscious patient or a patient unresponsive to verbal command or with seizures, you should **escalate matters using your local rapid response team**.

INITIAL MANAGEMENT

- Maintain a patent airway, position the patient.
- Ensure ventilation is adequate and assist if not.
- Give oxygen.
- Support circulation.
- Correct hypoglycaemia (for <3 mmol/L or 3–5 with symptoms: 25–50 mL of 50% dextrose IV).
- Stop seizures.
- You may try antidotes for drug induced CNS depression (e.g. naloxone for opioid overdose, but beware of the short duration of action of naloxone).

INITIAL INVESTIGATIONS

- Blood tests
 - ABG/glucose
 - FBC, EUC, LFTs, coagulation profile
 - TFTs, toxicology studies, blood culture (if indicated).
- Radiological Investigations
 - CT scan of the brain.

While CT scan of the brain is an important aid to diagnose or exclude intracerebral causes of altered conscious level state, it is UNSAFE to send an unconscious patient with an unprotected airway to CT scan. That is why the CT scanner is sometimes called one of the donuts of death, the other being the MRI. Airway protection needs to be secured before transfer. Appropriate monitoring and experienced staff members are required for transportation of the patient. The principles of safe transport are considered in Chapter Eleven, p 112.

SEIZURES



Generalised seizures (tonic/clonic or grand mal seizures) are a medical emergency and you should invoke your local rapid response system. Continuation of seizures can lead to brain damage, hypoxia, lactic acidosis, hyperthermia and possibly haemodynamic failure. Status epilepticus is when the patient does not regain consciousness between seizures or the seizure continues for more than 30 minutes. Some seizures can appear focal if localised to one part of the body but the conscious state is decreased and does not recover between seizures. Pupils may be fixed and dilated during generalised seizures. Causes include seizures in a known epileptic with low antiepileptic drug levels, and drug and alcohol withdrawal but there are many other potential causes.

INVESTIGATIONS

Investigations include glucose, electrolytes including calcium, magnesium and phosphate, full blood count, arterial blood gases, drug levels, CT scan, EEG and lumbar puncture. Take blood cultures while establishing intravenous access. Do not delay giving antibiotics if meningitis is a possibility.

INITIAL MANAGEMENT

- Assess and prioritise management using the ABCDEFG algorithm and DETECT assessment.
- Position the patient (in the left lateral - or coma - position if breathing is satisfactory).
- Give high concentration of oxygen via facemask.
- Establish IV access and take blood tests.
- Treat hypoglycaemia and terminate the seizure using diazepam 0.2 mg/kg intravenously (10–20 mg for an adult). This can be given per rectum if IV access is difficult.
- Follow up with longer acting agents (e.g. clonazepam 1–2 mg IV) and load with phenytoin if the patient is not on this already, unless otherwise contraindicated by, e.g. allergy, cardiac instability or arrhythmias).
- The patient should be haemodynamically (ECG and blood pressure) monitored. Phenytoin loading dose is 18 mg/kg given slowly (less than 50 mg/min) diluted in saline. Phenytoin is an extreme irritant to peripheral veins and subcutaneous tissues. Stop the infusion if there is hypotension or bradycardia. Further pharmacological measures are beyond the scope of this programme.



Remember to call your Rapid Response Team and escalate, as status epilepticus is a medical emergency.

KEY KNOWLEDGE AND SKILLS

- Describe the common causes of confusion, delirium and altered consciousness.
- Demonstrate a systematic approach to a patient with altered consciousness.
- Be able to recognise and treat seizures.

CASE STUDIES

CASE 1

As the ward nurse on your routine rounds you find a 30 year old man fitting in the medical ward. He has a history of recreational drug use and alcohol abuse but is otherwise healthy.

Outline your initial management. When do you call for help?

The seizures continue and you are the medical officer called to review. Outline your approach with priorities.

CASE 2

You are bringing the right medication to a 70 year old woman in the orthopaedic ward. You find she is very confused. She has had hip replacement surgery earlier in the day. The medical history includes diabetes mellitus, hypertension and ischaemic heart disease.

Outline your initial assessment and some simple treatments you can initiate.

She is very vocal, disturbing other patients, so you call the resident medical officer. As the medical officer reviewing the patient outline your approach. What are the potential causes for her confusion?