



Delirium

Recognition, causes and management in hospital and the ICU

Definition · Screening · Causes · Investigation · Management · ICU · Prevention · Recovery

About this guide

A practical guide to delirium built on NICE CG103, SIGN 157 and the 2025 SCCM PADIS update: the 4AT and CAM-ICU, a structured search for causes, when to image and record an EEG, what the antipsychotic trials really show, the ABCDEF bundle, prevention and cases.

What changed. First edition.

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A teaching reference, not a protocol. Doses and thresholds are given to aid recognition; check them against current local guidance and prescribing information before acting on them.

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Part I

What delirium is

Definition · Why it matters · Subtypes · Vulnerability and insult

Delirium is an acute failure of the brain, as real as acute kidney injury and far more often missed. It is common, it kills, it leaves many survivors with lasting cognitive damage, and in a large share of patients it can be prevented. This guide follows the order in which you meet it: recognise it, find its causes, treat the patient rather than the label, and protect the brain afterwards. It draws on NICE CG103 (reviewed 2023), SIGN 157, the 2025 SCCM focused update of the PADIS guideline and the main randomised trials.

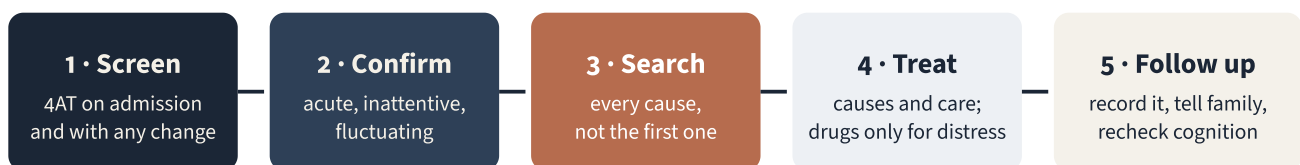


Figure 1. The whole guide on one line. Most harm comes from stopping early: missing delirium at step 1, accepting the first abnormal result at step 3, or reaching for sedation at step 4.

1.1 Definition

The DSM-5-TR criteria describe five features. All are needed:

Criterion	Feature
A	A disturbance in attention (directing, focusing, sustaining and shifting it) and awareness (orientation to the environment).
B	It develops over a short period — hours to days — is a change from baseline, and tends to fluctuate through the day.
C	An additional disturbance in cognition: memory, orientation, language, visuospatial ability or perception.
D	A and C are not better explained by a pre-existing neurocognitive disorder and do not occur in the context of a severely reduced level of arousal such as coma.
E	There is evidence that it is a direct physiological consequence of a medical condition, substance intoxication or withdrawal, a toxin, or several causes together.

The core is **inattention of acute onset**. A patient who can keep track of a conversation, recite the months backwards and has not changed from last week is very unlikely to be delirious, however confused the referral letter says they are.

1.2 Why it matters

- **It is common.** In older people it affects roughly a fifth to a third of general medical admissions on arrival, a further one in ten during the stay, up to half after major surgery and, depending on the population, up to four in five ventilated ICU patients.
- **It is missed.** Most delirium is never recorded. The hypoactive form, a quiet patient who "is sleeping a lot", is missed most of all.

- **It kills.** Delirium in the ICU is associated with a two- to fourfold risk of death; on medical wards with about one and a half times the risk of death in the following year.
- **It damages the brain.** In the BRAIN-ICU cohort, a longer duration of delirium predicted worse global cognition and executive function at three and twelve months, independent of sedative exposure. An episode of delirium is also associated with later dementia.
- **It is often preventable.** Multicomponent non-drug prevention reduces new delirium by about a third to a half (section 6.1).

1.3 Subtypes

Subtype	What you see	Why it matters
Hyperactive	Restless, agitated, pulling at lines, hallucinating, shouting, trying to leave	Noticed early; at risk of falls, self-extubation and of being sedated instead of investigated
Hypoactive	Withdrawn, drowsy, slow, quiet; eats and drinks little; "low mood" or "tired"	The commonest form in older people, the most often missed, and associated with a worse prognosis
Mixed	Swings between the two, often across a single day	The fluctuation itself is a diagnostic clue

1.4 Vulnerability and insult

Delirium is the product of how vulnerable the brain is and how hard it is hit. A fit 40-year-old needs a severe insult – septic shock, a large overdose – to become delirious. A frail 88-year-old with dementia may become delirious from a urinary tract infection, a dose of codeine or a night in a noisy bay. The practical lesson is that **the insult can look trivial** in a vulnerable patient, and that **several modest insults usually act together**.

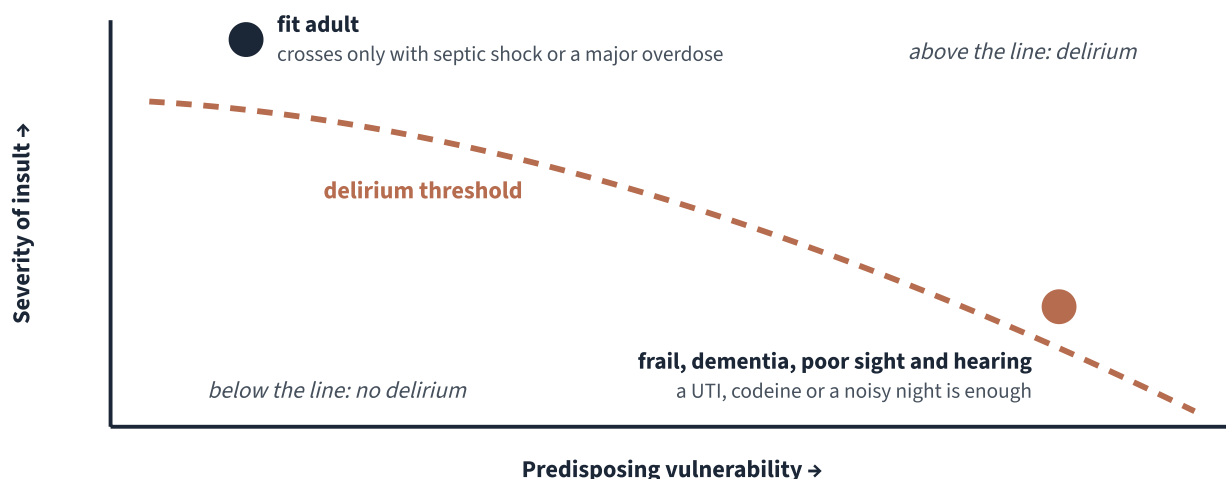


Figure 2. The more vulnerable the brain, the smaller the insult needed to cross the threshold. After Inouye and colleagues.

Predisposing (who is at risk)	Precipitating (what tips them over)
Age 65 or over · dementia or other cognitive impairment · previous delirium · severe illness · hip fracture · frailty and functional dependence · visual or hearing impairment · alcohol misuse · stroke, Parkinson's disease	Drugs, especially sedatives, anticholinergics and opioids · infection · metabolic and electrolyte disturbance · hypoxia or hypotension · surgery and anaesthesia · urinary retention, catheter, constipation · pain · dehydration · sleep loss and an unfamiliar environment · physical restraint · alcohol or drug withdrawal

Part II

Recognising it

Who to screen · The 4AT · The ICU · What else it could be

2.1 Who to screen, and when

NICE identifies four groups at high risk on admission: people aged **65 or over**, people with **cognitive impairment or dementia**, people with a **current hip fracture**, and people who are **severely ill**. Screen them on arrival, and screen anyone at any time when staff or family notice a change: new confusion, drowsiness, agitation, poor eating, falls, refusal of care or "not herself today". The family's sentence "this is not how she usually is" is the most useful piece of history you will get.

2.2 The 4AT

SIGN 157 recommends the **4AT** for identifying probable delirium, and NICE's 2023 review recommends it for assessment in hospital. It takes about two minutes, needs no training, and can be scored in patients who are too drowsy or agitated to complete other tests.

Item	How to score	Score
1 · Alertness	Normal, or mild sleepiness for under 10 seconds after waking	0
	Clearly abnormal: drowsy, hard to wake, or agitated	4
2 · AMT4 age, date of birth, place, current year	No mistakes · one mistake · two or more, or untestable	0 · 1 · 2
3 · Attention months of the year backwards, from December	Seven or more correct · starts but fewer than seven, or refuses · untestable	0 · 1 · 2
4 · Acute change or fluctuating course	From the family, the notes or staff: a change in alertness or cognition in the last two weeks that is still present in the last 24 hours	0 or 4

Interpretation. 4 or more: possible delirium, with or without cognitive impairment – assess clinically now. **1–3:** possible cognitive impairment. **0:** delirium or moderate-to-severe cognitive impairment unlikely, though not excluded if the information for item 4 is incomplete. In a meta-analysis of 17 studies the 4AT had a pooled sensitivity and specificity of about 88% each.

Testing in Arabic

- Use the month names the patient uses: فبراير, يناير in Sudan, Egypt and the Gulf; شباط, كانون الثاني in the Levant and Iraq.
- Patients who never learnt the months in order can say the **days of the week backwards**; record that you changed the task.
- Item 4 depends on someone who knows the patient. Ask the family directly, and ask about the last two weeks, not "is she confused?"

The 4AT is reproduced in summary from the official user guide at the4at.com, where the full form and instructions are freely available.

2.3 In the ICU

Assess arousal first with the **Richmond Agitation–Sedation Scale (RASS)**. If the patient responds to voice (RASS –3 or above), assess delirium with a validated ICU tool at least once a shift and whenever the picture changes:

- **CAM-ICU:** delirium is present when there is (1) an acute change or fluctuating course **and** (2) inattention, plus either (3) altered level of consciousness **or** (4) disorganised thinking. Inattention is tested by squeezing the hand on the letter "A" in a spoken sequence; it works in intubated patients.
- **ICDSC:** an eight-item checklist scored over the shift from observation; 4 or more suggests delirium.

A patient at RASS –4 or –5 cannot be assessed: record "coma or deep sedation" and reassess when lighter. Deep sedation that is not needed is itself one of the strongest modifiable causes of ICU delirium.

2.4 What else it could be

Condition	What separates it from delirium
Dementia	Gradual over months; attention relatively preserved until late; alertness normal. The question is never "delirium or dementia" but " is this a change from her baseline? " — delirium on top of dementia is the commonest presentation of all.
Dementia with Lewy bodies	Fluctuating attention, visual hallucinations and parkinsonism can mimic delirium for months. Recurrent "delirium" with no cause found should raise it — and antipsychotics can be dangerous.
Depression	Low mood and slowing without inattention or fluctuation; usually preserved orientation. Hypoactive delirium is often mislabelled as depression.
Non-convulsive status epilepticus	Fluctuating confusion or unresponsiveness, sometimes with subtle twitching of the eyelids, face or limbs. Only the EEG makes the diagnosis (section 3.3).
Aphasia	A left-hemisphere stroke produces "confused" speech with normal alertness and attention for non-verbal tasks. Look for the paraphasias, the facial weakness and the time of onset.
Primary psychiatric illness	Psychosis or mania with clear consciousness and intact attention. A first episode after the age of 50 is delirium or organic disease until proved otherwise.
Wernicke's encephalopathy	Confusion with any of ophthalmoplegia, nystagmus or ataxia — often only the confusion. Treat on suspicion in anyone with alcohol misuse, malnutrition, vomiting or bariatric surgery.

Part III

Finding the causes

The search · First-line investigations · When to image and when to record an EEG

3.1 The search

In most older patients delirium has **more than one cause**. The common error is to stop at the first abnormal result — a positive urine dipstick in an 85-year-old woman is usually asymptomatic bacteriuria, not an explanation. Go through every group, and treat everything you find.

Group	What to look for
Drugs — check first	Anticholinergics (oxybutynin, tricyclics, sedating antihistamines, some antiemetics), benzodiazepines and Z-drugs, opioids, corticosteroids, dopaminergic drugs, antiepileptics, digoxin and lithium toxicity. Recent starts, dose rises and stops all count. Calculate the anticholinergic burden.
Withdrawal	Alcohol, benzodiazepines, opioids, nicotine; also missed regular medicines such as levodopa or antidepressants
Infection	Chest, urine (with symptoms, not a dipstick alone), skin and wounds, lines, abdomen, meninges and brain when nothing else fits
Metabolic	Sodium, calcium, glucose (high and low), urea and creatinine, liver function and ammonia, thyroid, CO ₂ retention
Oxygen and perfusion	Hypoxia, hypercapnia, hypotension, heart failure, myocardial infarction, anaemia, arrhythmia
Retention and constipation	Bladder scan and abdominal and rectal examination — some of the most rewarding minutes in geriatric medicine
Pain	Fracture, surgical pain, pressure areas, gout; pain is undertreated in patients who cannot describe it
Hydration and nutrition	Dehydration, poor intake, thiamine and B ₁₂ deficiency
Brain	Stroke, subdural haematoma, encephalitis, meningitis, non-convulsive seizures, post-ictal states, raised intracranial pressure
Environment	Sleep deprivation, noise, moves between wards, missing glasses and hearing aids, restraints and catheters

● About mnemonics

Lists such as *I WATCH DEATH* are useful for not forgetting a group of causes, but they do not rank them and they hide the most important one — drugs — under "toxins". In an older patient on a ward, the most rewarding order is: the drug chart, the bladder and bowels, infection, sodium and calcium, oxygen, and pain.

3.2 First-line investigations

- **Bedside:** observations including oxygen saturation and temperature, capillary glucose, bladder scan, ECG (also as a baseline QTc before any antipsychotic).
- **Blood:** full blood count, urea, creatinine and electrolytes, calcium, glucose, liver function, CRP, thyroid function; blood cultures if febrile; arterial or venous gas if hypercapnia is possible; B₁₂ and folate; drug levels where relevant.
- **Targeted:** chest X-ray, urine culture when there are urinary symptoms, and further tests as the history directs.

◆ Do not miss

- **Hypoglycaemia** — check a capillary glucose in every delirious patient, at once.
- **Wernicke's encephalopathy** — give parenteral thiamine before glucose to anyone at risk; it is cheap, safe and the alternative is permanent amnesia.
- **Encephalitis** — fever, headache, seizures, focal signs or a CSF-like picture of "delirium with no cause": lumbar puncture and aciclovir without waiting.
- **Subdural haematoma** — a fall, an anticoagulant, or a headache.

3.3 When to image, and when to record an EEG

Brain imaging is not routine. Request CT when there are **new focal neurological signs**, a **fall or head injury**, **anticoagulation**, signs of raised intracranial pressure, or when **no cause has been found** after the first-line search.

EEG is the only way to diagnose non-convulsive status epilepticus. Ask for it when confusion fluctuates without an explanation, when there are subtle twitches of the eyelids, mouth or fingers, after a recent seizure or with a history of epilepsy, in patients on drugs that lower the seizure threshold (cefepime, carbapenems, tramadol, bupropion, lithium), and whenever the patient is not improving as expected. In a prospective continuous-EEG study of older adults with delirium, about one in eight had non-convulsive status epilepticus – including some in whom another acute cause had been found.

Part IV

Management

Treat the causes · Care that treats · Distress and agitation · Special situations

4.1 Treat the causes

Treating the causes is the only treatment that shortens delirium. Stop or reduce every drug that can be stopped; replace anticholinergics; treat infection, correct sodium, calcium and glucose slowly and safely, relieve retention and constipation, treat pain with regular simple analgesia, restore fluids and oxygen. Then reassess the next day with the same tool: delirium usually lags behind the correction of its causes by days, and in older patients can last weeks.

4.2 Care that treats

- **Orientation:** clocks and calendars in view, the same staff where possible, explain who you are and what is happening each time.
- **Senses:** glasses on, hearing aids in and working, dentures in.
- **Family:** encourage visits and longer presence; ask them to bring familiar objects and to tell staff about changes.
- **Sleep:** lights and noise down at night, no observations or drug rounds that can wait, daylight and activity during the day.
- **Movement:** sit out and walk early; avoid bed rest unless essential.
- **Fluids and food:** help with eating and drinking; monitor intake.
- **Avoid:** physical restraints, unnecessary urinary catheters and lines, and moving the patient between wards.

4.3 Distress and agitation

Start with de-escalation: a calm voice, one person speaking, explanation, a family member at the bedside, removing the cause of the distress (pain, a full bladder, a catheter, a cannula being pulled at). Medication is for **severe distress or risk to the patient or others** when these measures have failed – not for wandering, shouting or poor sleep alone.

If a drug is needed	Practice
First choice	NICE: consider short-term haloperidol , usually for one week or less , at the lowest clinically appropriate dose , titrated cautiously according to symptoms. In older patients this usually means small doses (for example 0.5 mg orally), reviewed every day.
Before giving	Check the ECG for QTc prolongation, the electrolytes, and for Parkinson's disease or dementia with Lewy bodies.
Avoid	Benzodiazepines , except for alcohol or benzodiazepine withdrawal: they worsen and prolong delirium. Avoid all antipsychotics if possible in Parkinson's disease and Lewy body dementia (section 4.5).
Stop	As soon as the distress settles. Document the reason, the dose and the review date; do not let it travel unexamined to the discharge prescription.

● What the trials show

- **Antipsychotics do not shorten delirium.** In MIND-USA (566 ICU patients), neither haloperidol nor ziprasidone changed the number of days alive without delirium or coma compared with placebo.
- In AID-ICU (1000 ICU patients), haloperidol did not significantly increase days alive and out of hospital at 90 days; a lower mortality in the haloperidol group was a secondary finding that needs confirmation.
- **Antipsychotics do not prevent delirium.** In REDUCE (21 Dutch ICUs), prophylactic haloperidol 2 mg three times daily did not change the incidence of delirium (33% in both groups) or 28-day survival.
- The 2025 SCCM update therefore makes **no recommendation** for or against antipsychotics to treat ICU delirium, and SIGN finds insufficient evidence to recommend antipsychotics or benzodiazepines for delirium. Their place is the control of dangerous distress, not the treatment of delirium itself.

4.4 Hypoactive delirium

The quiet patient needs the same search for causes and the same care – and no sedative. The risks are those of immobility: aspiration, dehydration, pressure injury, venous thromboembolism and deconditioning. Help with eating and drinking, sit the patient up and out, and make sure the diagnosis is written down so that "drowsy" is not read as "settled".

4.5 Special situations

- **Parkinson's disease and dementia with Lewy bodies:** never stop levodopa abruptly – missed doses cause rigidity, dysphagia and sometimes a parkinsonism–hyperpyrexia syndrome. Avoid haloperidol and other dopamine-blocking drugs, including metoclopramide; severe neuroleptic sensitivity can be fatal. If a drug is unavoidable, seek specialist advice; low-dose quetiapine is commonly used.
- **Alcohol withdrawal:** here a benzodiazepine is the treatment, given by a symptom-triggered or fixed protocol, with parenteral thiamine.
- **End of life:** delirium in the last days of life may be irreversible. Treat what is easily reversible, then aim at comfort and at the family's understanding of what they are seeing.
- **Capacity:** a delirious patient often lacks capacity for complex decisions. Assess decision by decision, act in the patient's best interests, and reassess as the delirium clears.

Part V

Delirium in the ICU

The ABCDEF bundle • The 2025 PADIS update

5.1 The ABCDEF bundle

In the ICU, delirium is best approached as a property of the whole care process rather than a single diagnosis. The **ABCDEF bundle** combines the measures with the best evidence; in the ICU Liberation Collaborative, involving more than 15,000 adults, higher bundle compliance was associated with lower mortality and less delirium, coma, physical restraint and ICU readmission.

Element	
A	Assess, prevent and manage pain — analgesia first, before sedation
B	Both spontaneous awakening and spontaneous breathing trials, daily and coordinated
C	Choice of analgesia and sedation — light sedation, avoiding benzodiazepines
D	Delirium — assess, prevent and manage, with CAM-ICU or ICDSC every shift
E	Early mobility and exercise
F	Family engagement and empowerment

5.2 The 2025 PADIS focused update

The Society of Critical Care Medicine updated five questions of its 2018 guideline in 2025:

Question	Recommendation	Strength • certainty
Dexmedetomidine or propofol for sedation of ventilated adults?	Suggest dexmedetomidine where light sedation or a reduction in delirium is the priority	Conditional • moderate
Antipsychotics to treat ICU delirium?	No recommendation for or against	— • low
Enhanced mobilisation or rehabilitation?	Suggest enhanced mobilisation over usual care	Conditional • moderate
Melatonin?	Suggest melatonin over no melatonin	Conditional • low
Benzodiazepines to treat anxiety?	Insufficient evidence to make a recommendation	— • —

Part VI

Prevention and afterwards

Prevention · Talking to families · After discharge

6.1 Prevention

Prevention works, and it is mostly nursing care done consistently. The Hospital Elder Life Program and similar multicomponent programmes – orientation, early mobilisation, sleep, hydration and nutrition, glasses and hearing aids, avoiding deliriogenic drugs – reduced the odds of delirium by about half in a meta-analysis of 14 studies, and reduced falls as well. NICE and SIGN recommend the same package for every patient at risk.

- Identify patients at risk on admission (section 2.1).
- Review the drug chart for deliriogenic and anticholinergic drugs, before surgery as well as on admission.
- Deliver the care package in section 4.2 from the first day, not after delirium appears.
- There is **no drug** that reliably prevents delirium on general wards; prophylactic haloperidol does not work (REDUCE). In the ICU, melatonin is suggested with low certainty.

6.2 Talking to families

Families are frightened by delirium, and often think it is the beginning of dementia or a psychiatric illness. Explain in plain words that it is an acute brain failure caused by the illness or its treatment, that it usually improves as the causes are treated, that it can fluctuate from hour to hour, and how they can help: by being there, by bringing glasses, hearing aids and familiar things, and by telling staff when the patient is not themselves.

6.3 After discharge

- **Write it down.** Record the episode of delirium in the discharge letter and in the coded diagnosis, so that the next team knows the patient is at higher risk.
- **Recheck cognition** weeks after recovery. Delirium may unmask an unrecognised dementia, and persistent deficits deserve assessment.
- **Stop the antipsychotic** if one was started.
- **ICU survivors** may have lasting cognitive impairment, anxiety, depression or post-traumatic stress; follow-up clinics and rehabilitation help.

Part VII

Cases

Five patients

Case 1

An 84-year-old woman with mild Alzheimer's disease is admitted with a fall. On day two she is drowsy, eats little and sleeps through the drug round. Nursing staff record her as "settled". Her 4AT: alertness abnormal (4), AMT4 two mistakes (2), cannot start months backwards (2), daughter reports she was chatting normally three days ago (4).

- A. Progression of dementia
- B. Hypoactive delirium
- C. Depression
- D. Normal for her

B. A 4AT of 12 with an acute change: hypoactive delirium on dementia. Search for causes – the drug chart (opioid for the fall?), bladder scan, constipation, infection, sodium, an occult fracture – and record the diagnosis so "settled" is not read as "well".

Case 2

A 79-year-old man is agitated two days after hip surgery. A urine dipstick is positive for leucocytes and nitrites, and the team has started an antibiotic. He has received oxybutynin for urgency, codeine four times a day, and has not opened his bowels since admission.

- A. Urinary tract infection is the cause; continue antibiotics
- B. Several likely causes – anticholinergic, opioid, constipation, possible retention – each needs action
- C. Postoperative cognitive dysfunction; wait
- D. Start lorazepam for agitation

B. A positive dipstick in an older man without urinary symptoms is weak evidence. Stop the oxybutynin, replace codeine with regular paracetamol and the lowest effective opioid, treat the constipation, scan the bladder – and review whether the antibiotic is needed at all. Benzodiazepines would make him worse.

Case 3

A 72-year-old woman on cefepime for pneumonia with chronic kidney disease becomes confused on day four. Her inflammatory markers are falling. The confusion comes and goes; between episodes she is almost normal, and a nurse notices brief twitching of her eyelids.

- A. Worsening sepsis
- B. Hypoactive delirium; wait for the pneumonia to settle
- C. Possible non-convulsive status epilepticus from cefepime in renal impairment — EEG now
- D. Sundowning

C. Cefepime neurotoxicity in renal impairment can present as delirium, myoclonus or non-convulsive status epilepticus. Request an EEG, adjust or change the antibiotic, and treat seizures if found.

Case 4

A 68-year-old man with Parkinson's disease is admitted nil by mouth for a bowel obstruction and becomes agitated, rigid and hallucinating on the second night. The night doctor is asked to prescribe haloperidol.

- A. Haloperidol 5 mg IM
- B. Lorazepam
- C. Restore dopaminergic treatment by a non-oral route, look for other causes, and seek specialist advice before any antipsychotic
- D. Increase the IV fluids

C. Missed levodopa is likely contributing. Restore dopaminergic treatment — a nasogastric tube if allowed, or a transdermal rotigotine patch — and avoid haloperidol, which can cause severe and dangerous worsening of parkinsonism.

Case 5

A 55-year-old man is admitted with confusion, unsteadiness and vomiting. He drinks heavily. His glucose is 3.1 mmol/L. A dextrose infusion has been prescribed.

- A. Give the dextrose, then thiamine tomorrow
- B. Give parenteral thiamine now, with or before the glucose
- C. Oral thiamine with breakfast
- D. CT head before any treatment

B. Confusion, ataxia, alcohol and vomiting; Wernicke's encephalopathy until proved otherwise. Give high-dose parenteral thiamine at once; do not delay correction of hypoglycaemia, but give thiamine before or with the glucose.

Appendix

Sources

Guidelines, trials and reviews

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