



# Managing delirium in older patients

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## Summary

**Delirium is an acute syndrome characterised by altered levels of consciousness, attention and cognitive function. It has many causes and frequently leads to, or occurs during, hospitalisation. Delirium requires urgent medical assessment. Unfortunately, the diagnosis is often missed. It is best treated by multidisciplinary intervention, addressing risk factors, treating underlying causes and minimising harm. Part of its management may be pharmacological, firstly ceasing drugs which may precipitate delirium – especially those with anticholinergic properties – and secondly, cautious use of antipsychotics for hyperactive symptoms.**

Key words: aged, antipsychotic, dementia.

(*Aust Prescr* 2011;34:16–18)

## Introduction

Delirium is an acute syndrome of altered level of consciousness, decreased attention and cognitive function, usually coming on over hours or days. It occurs most often in older people, associated with acute medical or surgical illness. It is commonly seen during hospitalisation – it affects up to a quarter of older hospitalised people on admission to hospital and a half can develop delirium during the admission.<sup>1</sup> Delirium may also develop at home, and is common in post-acute care, residential aged care and palliative care settings.

## Symptoms

The symptoms of delirium usually fluctuate throughout the day and night, with disturbance of the sleep–wake cycle resulting in agitation at night and drowsiness during the day. The presentation varies, ranging from the floridly agitated, hyperalert, hyperactive patient to the drowsy, hypoalert patient sleeping quietly in their bed. Many patients have a mixture of symptoms including inattention, varying degrees of consciousness, hallucinations and delusions. Hypoalertness in patients is often mistaken for dementia, resulting in delayed or missed opportunities for therapeutic intervention.

## Risk factors

Despite being so common, the pathophysiology of delirium

is poorly understood. Susceptibility to this condition reflects a balance between the severity of the insult and the frailty of the central nervous system, so anyone can get delirium. It is not unusual in patients in intensive care or young people using recreational drugs.

Risk factors for delirium include dementia, older age, multiple comorbidities, psychoactive medication use, sleep deprivation, dehydration, immobility, pain, sensory impairment and hospitalisation. Delirium is closely linked to dementia – each is a risk factor for the other – and it is now recognised that delirium can cause irreversible decline in cognitive and physical function, as well as increased mortality and nursing home placement.

Frail older patients may present with delirium triggered by many medical or surgical problems (see box), often more than one at a time, so delirium presents a diagnostic challenge. Because it may be the only presenting symptom of a rapidly deteriorating patient, delirium is a medical emergency.

## Preventing or reducing delirium

Multicomponent interventions have reduced aspects of delirium<sup>2</sup> such as delirium incidence, severity and duration, though not all three simultaneously. The Hospital Elder Life Program (HELP) ([www.hospitalelderlifeprogram.org](http://www.hospitalelderlifeprogram.org)), administered by volunteers and ward staff, addresses six of the risk factors for delirium, namely cognitive impairment, sleep deprivation, immobility, dehydration and visual and hearing impairment. The program recommends the following:

- reorient and mobilise the patient
- reduce sensory deprivation
- ensure the patient is hydrated
- implement a non-pharmacologic sleep regimen
- limit catheters and restraints.

### Box

#### MISTE – a mnemonic for possible causes of delirium

M	metabolic – hyponatraemia, hypoglycaemia, hypoxaemia
I	infective – urinary tract infection, pneumonia
S	structural – subarachnoid haemorrhage, urinary retention
T	toxic – drugs (e.g. digoxin, lithium) or poisons
E	environmental – being in hospital or the emergency department

Intensive orthogeriatric services, involving daily geriatrician review starting before surgery, reduce delirium in hip fracture patients.<sup>3</sup> An Australian study found that multidisciplinary geriatric rehabilitation in the home reduced the incidence of delirium compared to when it was given in hospital.<sup>4</sup> Haloperidol prophylaxis for hip surgery patients had no effect on delirium incidence, but did reduce the severity and duration,<sup>5</sup> whereas risperidone after cardiac surgery was found to reduce the incidence of delirium.<sup>6</sup>

## Diagnosis and initial management

The crucial, and unfortunately, often missing step in delirium management is diagnosis. Given the large and increasing number of older patients in hospital, screening for delirium should become part of routine observations, at least for high-risk patients. However, some training of staff is required.

It is very useful, when unsure if a patient's poor cognitive status is new or pre-existing, to ask their family or carer whether they are usually like this.

Once delirium is identified, initial management aims to detect and treat underlying medical and surgical causes. The list of possible causes is long, and the simple mnemonic MISTE serves as an aide-memoire to categorise potential causes (see box). A comprehensive assessment including history, examination and appropriate investigations is required when delirium is detected, because many older patients have more than one diagnosis contributing to their delirium.

After delirium has developed, addressing the six HELP risk factors is useful. Managing a patient with hyperactive delirium can be a challenge on any ward. Restraints should be avoided, as they aggravate delirium, as well as increase injuries and falls. Where suitable, asking family to be present as much as possible, even organising a roster of relatives, generally helps to calm agitated patients. If this is not an option, ask an assistant-in-nursing to sit with the patient. A delirium room or ward where a calm, comfortable environment can be maintained is most beneficial for patients. Familiar objects or photographs from home also help.

It is important to prevent complications so, for example, agitated patients who keep climbing out of bed may be nursed on low-low beds or mattresses placed on the floor. It is preferable to allow an agitated patient to pace around a secure delirium ward than to sedate them as this can lead to hypostatic pneumonia or pressure sores.

Designing appropriate and safe facilities to manage patients with delirium should be a priority in building new hospitals. As patients may become delirious on any ward in the hospital it is useful to have a support person, such as a clinical nurse consultant, who can advise and train staff around the hospital.

## Pharmacological management

Appropriate management of the underlying condition(s) and the drugs that the patient is taking, remains the mainstay of delirium treatment.

### *Stopping drugs that cause delirium*

The importance of reducing or ceasing drugs that exacerbate delirium cannot be overemphasised. This highlights the importance of a thorough medication review. While anticholinergics and psychoactive medications (including antiepileptic and pain medications) are important, other drugs such as NSAIDs and sotalol may also contribute to the problem (see box). Even drugs that are used to treat delirium, particularly if given in excess, can prolong or worsen delirium. It is also important to enquire about over-the-counter and complementary medications, such as European mandrake or scopolia which have marked anticholinergic properties, as these may precipitate delirium.

### *Drug therapy for delirium*

Drug therapy is reserved for patients who are at risk of harming themselves or others, for example by pulling out essential medical devices or lines. Drug treatment for delirium is an understudied area, with only a limited number of small trials to guide management. There are very few data comparing different drugs. The choice of drug is not guided by an understanding of the pathophysiology of delirium, which remains imprecise.

### *Antipsychotics*

If drugs are needed, antipsychotics are generally accepted as first-line, except in delirium tremens. However, phenothiazine antipsychotic drugs such as chlorpromazine, which have prominent anticholinergic properties, should be avoided in older patients. Always remember the essential aphorism of geriatric pharmacology: start low and go slow. Suggested initial doses are haloperidol 0.5 mg, risperidone 0.5 mg or olanzapine 2.5 mg. Depending on the response additional doses can be given after 2–4 hours, otherwise daily. However for the more frequent dosing, the patient should be closely monitored for over-sedation.

### *Efficacy*

A number of small trials have shown that typical (particularly haloperidol) and atypical antipsychotics improve hyperactive symptoms, such as agitation, restlessness, thought and perceptual disturbance, and shorten the duration of delirium. Hypoactive symptoms such as drowsiness and sedation may be exacerbated. There is no clear evidence that atypical antipsychotics are more effective than typical antipsychotics, but they appear to have fewer extrapyramidal adverse effects.

## Adverse effects

Extrapyramidal effects include akathisia (motor restlessness and muscular tension especially in the legs) and parkinsonism. These may occur in over half of older patients on antipsychotics, with the risk increasing with higher doses and longer duration of treatment.

Antipsychotics may prolong the QT<sub>c</sub> interval. Neuroleptic malignant syndrome, a rare but potentially fatal disorder, is also more common with typical antipsychotics. It develops over 1–3 days, and symptoms include fever, extrapyramidal dysfunction with tremor and marked rigidity, autonomic disturbance including tachycardia and hypo- or hypertension, elevated creatine kinase and white cell count, and myoglobinuria. If suspected, antipsychotics should be ceased immediately and supportive measures instituted, including intravenous fluids.

Other adverse effects of antipsychotic drugs that affect older people during short-term treatment are sedation, orthostatic hypotension, epileptic seizures, weight gain and disturbed glucose and lipid metabolism. Sedation may, at times, be a desired effect but at other times it is an adverse effect, prolonging the delirium and increasing the risk of falls and fractures.

Evidence has emerged of an increased risk of stroke in older patients with dementia taking atypical antipsychotics, however the risk is thought to be similar with typical drugs.

## Other drugs

Benzodiazepines are the treatment of choice for delirium tremens and delirium associated with benzodiazepine withdrawal. They can also be used in patients with neuroleptic malignant syndrome, Parkinson's disease or Lewy body dementia. However, the atypical antipsychotics may be used with caution in the latter two conditions.

Although anticholinergic drugs can contribute to the development of delirium, and ceasing them often helps improve delirium, there is no randomised evidence that the cholinergic drugs used to treat dementia (donepezil, galantamine or rivastigmine) have a role in the treatment of delirium.

## Conclusion

Delirium is a common emergency, with high mortality rates, affecting older patients. Timely diagnosis, investigation, multicomponent intervention and judicious use of medications to treat and protect the patient can improve the chances of a good outcome. It is imperative that any hospital caring for significant numbers of older patients maintains a coordinated, multifaceted response to delirium.

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## Further reading

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*Conflict of interest: none declared*

## Self-test questions

*The following statements are either true or false (answers on page 31)*

5. Dehydration is a risk factor for delirium in older people.
6. Benzodiazepines are recommended for the treatment of delirium tremens.