Delirium in the elderly

Delirium is a dangerous, common and preventable condition that causes significant stress to patients, carers and health professionals. This article explores the existing assessment and management strategies aimed at recognizing and reducing the impact of delirium in elderly patients.

Delirium is a common condition in the elderly. It increases the risk of falls, incontinence, pressure ulcers, functional impairment, persistent cognitive impairment and death. Delirium incites stress in patients, carers and relatives, and is associated with longer hospital stays, higher institutionalization rates and more frequent readmission to hospital (Lindesay et al, 2002).

Despite its frequency, associated morbidity and mortality, delirium still is misdiagnosed and poorly managed by clinicians.

Clinical features of delirium

Burns et al (2004) define delirium as a transient, diurnally fluctuating global disorder of cognition (thinking, perception, memory) and attention (alertness, selectiveness, directiveness) that develops over a period of hours or days and usually lasts less than 6 months.

Although there should be evidence that the delirium is a direct consequence of a general medical condition, drug withdrawal or adverse reaction, sometimes a confident diagnosis of delirium can be made even if the underlying cause is not firmly established. Having said that, given the wide-ranging and non-specific symptoms of delirium, a diagnosis should be considered when a patient is described as, or thought to be, 'confused', 'vague', 'a poor historian' or 'uncooperative'.

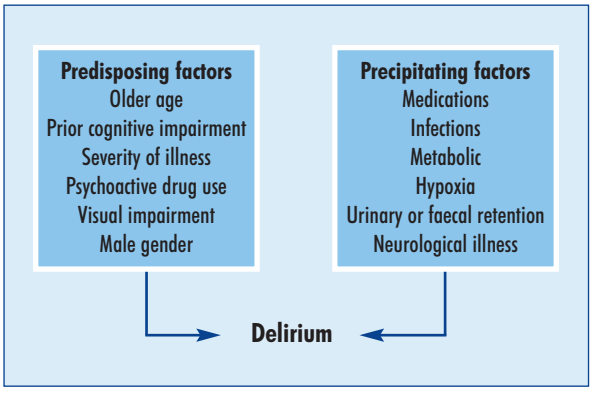

Figure 1. Aetiology of delirium.

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Epidemiology of delirium

Estimates of the incidence and prevalence of delirium vary considerably as a result of a number of factors including differences in definitions of the syndrome, differences in how cognitive changes are measured and differences in the timing of the measurements.

Most studies report rates of 10–20% for medical patients on admission to hospital, up to 40% after elective joint replacement therapy and 60% of those admitted to palliative care units. With shorter lengths of stay in hospital and more surgery being undertaken on a day care basis it is likely to be increasingly common in the community and in residential care homes.

Aetiology of delirium

The nature of delirium is multifactorial as documented by Rudberg et al (1997), who found two to six possible precipitating factors working synergistically in any single case. *Figure 1* illustrates how it is precisely the coexistence of a precipitating illness, substance intoxication or substance withdrawal and a patient's predisposing factors that lead to the development of delirium.

Predisposing factors

Among the various predisposing factors that confer increased risk of delirium, older age, pre-existing cognitive impairment, severity of illness and psychoactive drug use are thought to be the most significant.

Early recognition of predisposing factors will facilitate the introduction of appropriate preventative measures and the instigation of targeted, systematic management objectives once delirium sets in.

Precipitating factors

These include the multiple iatrogenic insults an elderly patient experiences while in hospital (surgery, polypharmacy, use of restraints, and bladder catheterization among others) and the presence of other precipitants (malnutrition, dehydration, faecal impaction, urinary retention, chest or urinary infections, cardiorespiratory disease, medication toxicity, alcohol withdrawal, electrolyte imbalance, sensory impairment and neurological disease). These may explain why 10–30% of elderly patients develop delirium following hospital admission (Lindesay et al, 2002).

Pathophysiology

Anatomically global damage to thalamic and bihemispheric pathways can be distinguished from focal injury affecting right hemispheric frontal and parietal cortex neu-

ronal networks (Filley, 2002). Right-sided lesions might be directly implicated in the final common pathway.

At neurotransmitter level the presence of a reversible impairment in cerebral oxidative metabolism leads to decreased acetylcholine activity. High serum anticholinergic activity is associated with severity of delirium, which may explain the benefit in treating symptoms of delirium reported by researchers using anticholinesterase drugs.

Evaluating the patient with delirium

Unfortunately most delirious patients are identified only when they present with significant behavioural disturbance and most clinicians fail to recognize the presence of delirium (Cole et al, 2002). Therefore, a high index of suspicion is an essential first step in the detection of delirium.

All vulnerable patients should be screened for predisposing factors for delirium on admission to hospital and any episodes of confusion, impaired attention, perception or concentration should be taken seriously, recorded and investigated appropriately.

Screening tests

Useful screening tests for assessing delirium include validated cognitive screening tools, e.g. the abbreviated mental test score and the mini mental state examination, the confusion assessment method, and the whisper and standard Jaeger tests to evaluate possible sensory impairments.

History

A thorough history from the patient (when possible), a relative or carer is invaluable. As well as standard questions it is important to enquire about the patient's cognitive functioning before admission and any recent cognitive changes, pre-morbid functional status, sensory deficits, aids used, co-morbidity, social, religious and psychological circumstances. A full drug history must be obtained including over-the-counter medications, alcohol and narcotic use.

Physical examination

A full physical examination is not always feasible in an agitated and resistant delirious patient and should focus on uncovering potential causes of delirium. Attention should be paid to nutritional status, presence of pyrexia, evidence of alcohol abuse or withdrawal and neurological inspection, including assessment of speech and conscious level.

Investigations

Laboratory investigations aim to expose any existing predisposing and precipitating factors and should be based on findings from the history and physical examination. The British Geriatrics Society (2003) suggests a battery of tests in the assessment of a delirious patient such as urinalysis, blood cultures, full blood count, bone, liver and renal profiles, glucose levels, thyroid function tests, electrocardiography and chest X-ray. Computed tomography scan of the brain is best reserved for patients in whom an intracranial lesion is suspected (presence of focal neurological signs, evidence of raised intracranial pressure or confusion developing after a head injury or fall); likewise there is no evidence that routine electroencephalogram or lumbar puncture are helpful and should only be considered where there are difficulties in differentiating delirium from non-convulsive status epilepticus or meningitis.

Differential diagnosis

The differential diagnosis of delirium should include dementia, depression and schizophrenia. *Table 1* outlines the main differentiating features.

Management

Delirium is best managed in hospital where comprehensive multidisciplinary team assessment and treatment can be facilitated; however, such benefit must be balanced against the potentially detrimental consequences to a vulnerable elderly individual of a sudden change in environment and the predictable risks of hospitalization.

The American Psychiatric Association (1999) and the British Geriatrics Society (2003) published guidance for the management of delirium but there is no evidence that guidelines themselves improve care or outcomes of delirium (Young and George, 2003). Educational and organizational changes will be needed to improve outcomes.

The most important aspect in the management of delirium is prevention, early identification and treatment of precipitating and predisposing factors. Most episodes of delirium improve when precipitating factors are removed.

Rizo et al (2001) confirmed the cost-effectiveness of multicomponent targeted interventions in hospitalized patients at intermediate risk of developing delirium.

Behavioural management

Behavioural control is best achieved via environmental interventions, and targeted drug treatment where necessary. Successful environmental modifications call for participation of health-care professionals, family and caregivers, to create safe surroundings that place minimum demands on an individual's impaired cognitive function

Table 1. Differential diagnosis of delirium

	Delirium	Dementia	Depression	Schizophrenia
Onset	Acute	Insidious	Variable	Variable
Course	Fluctuating	Steadily progressive	Diurnal variation	Variable
Conscious level	Clouded	Clear until late stages	Generally unimpaired	Unimpaired
Orientation	Poor	Poor	Good	Good
Attention	Poor	Poor	Poor	Poor
Memory	↓ short term	↓ short term	Normal	Normal
Psychosis	Common	Less common	Rare	Frequent
Electroencephalogram	80–90% abnormal diffuse slowing		Generally normal	

and limit the risk of harm to the patient and others. Key interventions can include:

- Repeated verbal reminders of the day, time, location and identity of key health-care staff and relatives
- Easy access to clocks, calendars and familiar objects from the patient's home environment
- Use of television or radio to keep contact with the outside world
- Control of lighting, noise and room temperature
- Clear communication with the patient.

Supportive measures, e.g. a calm and friendly approach by staff with frequent reassurance, maintenance of hydration and nutrition, use of multivitamin supplements, avoidance of physical restraints, and provision of appropriate aids, are common sense and should be widely available.

The multicomponent interventions for the management of delirium will also help prevent common complications, e.g. oversedation, nosocomial infections, falls and functional impairment. Formal pressure ulcer risk assessment, regular pressure area care and early mobilization are aimed at reducing the risk of developing pressure ulcers. A comprehensive continence assessment, avoidance of urinary catheters, encouragement of regular toileting and prompt treatment of urinary tract infections may help avoid urinary incontinence.

Of 59 delirious patients, 80% recalled their experience without prompting, as impressions similar to dreams (Andersson, 2002). Patients should be encouraged to participate in self-care and treatment (i.e. giving feedback on pain), sensory impairments should be corrected (i.e. ensuring patients use glasses, dentures or hearing aids) and a combination of periods of uninterrupted sleep with maintenance of adequate activity levels should be facilitated.

Pharmacological management

Pharmacological treatment may be needed to carry out essential investigations or treatment, and when a patient becomes severely disturbed and aggressive, to relieve distress and reduce the risk of self-harm or harm to others.

If sedatives are prescribed, it is better to use one preparation only, at the smallest starting dose possible, with regular monitoring and early discontinuation when practicable.

Except in cases of delirium caused by alcohol or sedative hypnotic withdrawal, neuroleptics are the drug of choice, resulting in improvement before elucidation of the underlying cause. Haloperidol 0.5–10 mg a day (orally, intramuscularly or intravenously) improves most symptoms of delirium and is especially effective in the control of more severely disturbed and aggressive patients.

Benzodiazepines may be used as an adjuvant to antipsychotics when these are ineffective or cause unacceptable side effects. They may prove useful when delirium is caused by hepatic insufficiency, withdrawal of alcohol or removal of sedatives (Brown and Boyle, 2002). Lorazepam, up to 2 mg every 4 hours, has several advantages owing to its sedative properties, low risk of accumulation, rapid onset and short duration of action.

Health-care professionals should keep clear, accurate, legible and timely patient records, reporting relevant clinical findings, decisions made, information given to patients and any drugs or other treatment prescribed.

Patients who fail to improve despite treatment of the underlying cause of delirium may benefit from referral to old age psychiatry for further assessment (Gupta, 2003).

Discharge and follow up of delirious patients

Communication with all parties involved in the patient's care, both in hospital and in the community, is vital and more so around the time of discharge to avoid unnecessary complications and improve overall outcomes.

Delirium is a common presentation of an underlying dementing process and may also be a marker of severe illness and morbidity. A post-hospital visit will help clarify the transient nature of symptoms that differentiates delirium from dementia, and makes possible continued vigilance of medication, environmental change and sensory problems during discharge planning and aftercare. **BJHM**

KEY POINTS

- Delirium signals a severe illness and is associated with significant morbidity, mortality, longer lengths of hospital stay and higher rates of institutionalization.
- Delirium sufferers often have an awareness of their experience.
- Identification of the predisposing and precipitating factors, education of health-care professionals, environmental preventative interventions and a systematic interdisciplinary approach can improve the outcome of such patients.
- Symptoms often persist beyond acute treatment and postdischarge reviews should focus on reducing ongoing risk factors and managing residual functional impairments.

Conflict of interest: none.

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