

ABC of psychological medicine

Delirium

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Delirium is a common cause of disturbed behaviour in medically ill people and is often undetected and poorly managed. It is a condition at the interface of medicine and psychiatry that is all too often owned by neither. Although various terms have been used to describe it—including acute confusional state, acute brain syndrome, and acute organic reaction—delirium is the term used in the current psychiatric diagnostic classifications and the one we will use here.

Clinical features

Delirium usually develops over hours to days. Typically, the symptoms fluctuate and are worse at night. The fluctuation can be a diagnostic trap, with nurses or relatives reporting that patients had disturbed behaviour at night whereas doctors find patients lucid the next day.

Impaired cognitive functioning is central and affects memory, orientation, attention, and planning skills. Impaired consciousness, with a marked variability in alertness and in awareness of the environment is invariably present. A mistaken idea of the time of day, date, place, and identity of other people (disorientation) is common. Poor attention, and disturbed thought processes may be reflected in incoherent speech. This can make assessment difficult and highlights the need to obtain a history from a third party. Relatives or other informants may report a rapid and drastic decline from premorbid functioning that is useful in distinguishing delirium from dementia.

Disturbed perception is common and includes illusions (misperceptions) and hallucinations (false perceptions). Visual hallucinations are characteristic and strongly suggest delirium. However, hallucinations in auditory and other sensory modalities can also occur.

Delusions are typically fleeting, often persecutory and usually related to the disorientation. For example, an elderly person may believe that the year is 1944, that he or she is in a prisoner of war camp, and that the medical staff are the enemy. Such delusions can be the basis of aggressive behaviour.

Delirium can have a profound effect on affect and mood. A patient's affect can range from apathy and lack of interest to anxiety, perplexity, and fearfulness that may sometimes amount to terror. A casual assessment can result in an erroneous diagnosis of depression or anxiety disorder.

Disturbances of the sleep-wake cycle and activity are common. A behaviourally disturbed patient with night time agitation wandering around the ward is usually easy to recognise. However, presentations where a patient is hypo-alert and lethargic may go unrecognised.

Detection of delirium

Delirium often goes undiagnosed. Non-detection rates as high as 66% have been reported. Detection and diagnosis are important because of the associated morbidity and mortality: although most patients with delirium recover, some progress to stupor, coma, seizures, or death. Patients may die because of failure to treat the associated medical condition or from the associated behaviour—inactivity may cause pneumonia and decubital ulcers, and wandering may lead to fractures from falls.



Sensory misperceptions, including hallucinations and illusions, are common in delirium. (*Don Quixote and the Windmill* by Gustave Doré, 1832-1883)

Diagnostic criteria for delirium*

- Disturbance in consciousness with reduced ability to focus, sustain, or shift attention
- Change in cognition (such as memory, disorientation, speech, disturbance) or development of perceptual disturbance not better accounted for by pre-existing or evolving dementia
- Disturbance develops over hours to days and fluctuates in severity

*Adapted from *Diagnostic and Statistical Manual of Mental Disorders*, 4th edition (DSM-IV)



Alcohol addiction often goes undetected at the time of admission to hospital. All admitted patients should be asked about their alcohol consumption

Differential diagnosis

The main differential diagnosis of delirium is from a functional psychosis (such as schizophrenia and manic depression) and from dementia. Functional psychoses are not associated with obvious cognitive impairment, and visual hallucinations are more common in delirium. Dementia lacks the acute onset and markedly fluctuating course of delirium. Fleeting hallucinations and delusions are less common in dementia. It is important to note that delirium is commonly superimposed on a pre-existing dementia.

Prevalence

Most prevalence studies of delirium have been carried out in hospitalised medically ill patients, in whom the prevalence is about 25%. Most at risk are elderly patients, postoperative patients, and those who are terminally ill. The epidemiology of delirium in primary care and the community is unknown, but, with shorter length of stay in hospital and more surgery on a day case basis, it is likely to be increasingly common in the community and in residential care homes. It has been estimated that, among hospital inpatients with delirium, less than half have fully recovered by the time of discharge.

Aetiology

Delirium has a large number of possible causes. Many of these are life threatening, and delirium should therefore be regarded as a potential medical emergency. It is increasingly recognised that most patients have multiple causes for delirium, and consequently there may be several factors to be considered in diagnosis and management. Causes of delirium may be classified as

- Underlying general medical conditions and their treatment
- Substance use or withdrawal
- Of multiple aetiology
- Of unknown aetiology.

Prescribed drugs and acute infections are perhaps the commonest causes, particularly in elderly people. Prescribed drugs are implicated in up to 40% of cases and should always be considered as a cause. Many prescribed drugs can cause delirium, particularly those with anticholinergic properties, sedating drugs like benzodiazepines, and narcotic analgesics.

Withdrawal from alcohol or from sedative hypnotic drugs is a common cause of delirium in hospitalised patients separated from their usual supply of these substances. Delirium tremens is a form of delirium associated with alcohol withdrawal and requires special attention.

In addition to looking for precipitating causes of delirium, it is important to consider risk factors. These include age (with children and elderly people at particular risk), comorbid physical illness or dementia, and environmental factors such as visual or hearing impairment, social isolation, sensory deprivation, and being moved to a new environment.

Management

There are four main aspects to managing delirium:

- Identifying and treating the underlying causes
- Providing environmental and supportive measures
- Prescribing drugs aimed at managing symptoms
- Regular clinical review and follow up.

Good management of delirium goes beyond mere control of the most florid and obvious symptoms.

Distinguishing delirium from dementia

	Delirium	Dementia
Onset	Acute or subacute	Insidious
Course	Fluctuating, usually revolves over days to weeks	Progressive
Conscious level	Often impaired, can fluctuate rapidly	Clear until later stages
Cognitive defects	Poor short term memory, poor attention span	Poor short term memory, attention less affected until severe
Hallucinations	Common, especially visual	Often absent
Delusions	Fleeting, non-systematised	Often absent
Psychomotor activity	Increased, reduced, or unpredictable	Can be normal

Prevalence of delirium

Setting	% with delirium
Hospitalised medically ill patients*	10-30%
Hospitalised elderly patients	10-40%
Hospitalised cancer patients	25%
Hospitalised AIDS patients	30-40%
Terminally ill patients	80%

*High risk conditions and procedures include cardiomy, hip surgery, transplant surgery, burns, renal dialysis, and lesions of the central nervous system

Causes of delirium due to underlying medical conditions

- Intoxication with drugs—Many drugs implicated especially anticholinergic agents, anticonvulsants, anti-parkinsonism agents, steroids, cimetidine, opiates, sedative hypnotics. Don't forget alcohol and illicit drugs
- Withdrawal syndromes—Alcohol, sedative hypnotics, barbiturates
- Metabolic causes
 - Hypoxia, hypoglycaemia, hepatic, renal or pulmonary insufficiency
 - Endocrinopathies (such as hypothyroidism, hyperthyroidism, hypopituitarism, hypoparathyroidism or hyperparathyroidism)
 - Disorders of fluid and electrolyte balance
 - Rare causes (such as porphyria, carcinoid syndrome)
- Infections
- Head trauma
- Epilepsy—Ictal, interictal, or postictal
- Neoplastic disease
- Vascular disorders
 - Cerebrovascular (such as transient ischaemic attacks, thrombosis, embolism, migraine)
 - Cardiovascular (such as myocardial infarction, cardiac failure)

Features of delirium tremens

- Associated with alcohol withdrawal
- Delirium with prominent anxiety and autonomic hyperactivity
- There may be associated metabolic disturbance and fits
- Chronic alcoholics are at risk of Wernicke's encephalopathy, in which delirium becomes complicated by ataxia and ophthalmoplegia. Urgent treatment with parenteral thiamine is required to prevent permanent memory damage

Making the diagnosis

Most patients with delirium are identified only because of marked behavioural disturbance. It would be preferable for all patients to be screened for risk factors at admission to hospital. These would include substance misuse (particularly alcohol) and cognitive impairment (assessed with the Hodkinson mental test or similar). Although such screening questions are part of the admission form in many hospitals, in our experience junior doctors seldom complete them. Once patients are admitted, minor episodes of confusion, behavioural disturbance, or increasing agitation should be taken seriously and investigated as appropriate. They should not be simply dismissed as “old age” or psychological reactions to hospitalisation.

Identifying and treating the cause

Delirium, by definition, is secondary to one or more underlying cause. Identifying such causes is often difficult, especially when patients are unable to give a coherent history or cooperate with physical examination. On occasions, it can be necessary to sedate a patient before conducting an adequate assessment. The interviewing of third parties is often helpful. Once a cause is found, appropriate treatment should be started without delay.

The environment

The aims of environmental interventions are, firstly, to create an environment that places minimum demands on a patient's impaired cognitive function and, secondly, to limit the risk of harm to the patient and others that may result from disturbed behaviour. Nursing should, as far as possible, be done by the same member of staff (preferably one trusted by the patient). This consistency should be supported with other strategies such as clear and if necessary repeated communication, adequate lighting, and the provision of clocks as aids to maintaining orientation. Visits from family and friends and provision of familiar objects from home can also be helpful. The correction of sensory impairments (such as by providing glasses or hearing aids) to help patients' grip on reality is sometimes overlooked.

It is also important to minimise any risk to a delirious patient, other patients on the ward, and staff by ensuring that the patient is in a safe and separate area and that potentially dangerous objects are removed.

Drug treatment

Drug treatment of delirium should only be used when essential and then with care. This is because drugs such as antipsychotics and benzodiazepines can make the delirium worse and can exacerbate underlying causes (for example, benzodiazepines may worsen respiratory failure).

Antipsychotic drugs

Antipsychotics are the most commonly used drugs. Their onset of action is usually rapid, with improvement seen in hours to days. Haloperidol is often used because it has few anticholinergic side effects, minimal cardiovascular side effects, and no active metabolites. As it is a high potency drug it is less sedating than phenothiazines and therefore less likely to exacerbate delirium. It is, however, prone to causing parkinsonism, which may exacerbate a patient's tendency to fall. Low dose haloperidol (1-10 mg/day) is adequate for most patients. In severe behavioural disturbance haloperidol may be given intramuscularly or intravenously.

It is preferable to use a fixed dosing regimen from the time of diagnosis rather than always giving the drug “as required” in response to disturbed behaviour. It is essential, yet often forgotten, to monitor patients for both adequate response and unacceptable side effects. While a patient is in hospital this

Hodkinson mental test

Score one point for each question answered correctly and give total score out of 10

Question

- Patient's age
- Time (to nearest hour)
- Address given, for recall at end of test (42 West Street)
- Name of hospital (or area of town if at home)
- Current year
- Patient's date of birth
- Current month
- Years of the first world war
- Name of monarch (or president)
- Count backwards from 20 to 1 (no errors allowed but may correct self)

Environmental and supportive measures in delirium

- Education of all who interact with patient (doctors, nurses, ancillary and portering staff, friends, family)
- Reality orientation techniques
Firm clear communication—preferably by same member of staff
Use of clocks and calendars
- Creating an environment that optimises stimulation (adequate lighting, reducing unnecessary noise, mobilising patient whenever possible)
- Correcting sensory impairments (providing hearing aids, glasses, etc)
- Ensuring adequate warmth and nutrition
- Making environment safe (removing objects with which patient could harm self or others)



Simple measures to help orientation (such as glasses, hearing aids, and clocks) are effective in the management of delirium



In postoperative patients judicious use of oxygen can treat delirium effectively

consists of at least a daily assessment of symptoms, level of sedation, and examination for extrapyramidal and other unwanted drug effects.

Preliminary experience with new antipsychotics suggest they may also be effective in delirium, but their advantages remain unestablished.

Benzodiazepines

Benzodiazepines are usually preferred when delirium is associated with withdrawal from alcohol or sedatives. They may also be used as an alternative or adjuvant to antipsychotics when these are ineffective or cause unacceptable side effects. Intravenous or intramuscular lorazepam may be given up to once every four hours. In patients with delirium due to hepatic insufficiency, lorazepam is preferred to haloperidol. Excessive sedation or respiratory depression from benzodiazepines is reversible with flumazenil.

Review

One of the most consistent failings in the management of delirium is lack of review. The acute symptoms are usually dealt with "out of hours" by junior staff and are forgotten by the next day. It is essential to review management of delirium and of the underlying causes for the duration of the hospital stay.

Patients' capacity and consent

Increasingly issues of capacity and informed consent may be raised in relation to the treatment of delirium. Urgent interventions needed to prevent serious deterioration or death or necessary in the interests of a patient's safety are deemed to be covered by common law in the United Kingdom. Although opinions differ, most agree that (a) if medical colleagues would deem a treatment appropriate and (b) if reasonable people would want the treatment themselves, then it can be given if urgently necessary.

Explaining the diagnosis

Effective management requires that not only the doctors and nurses caring for a patient understand the condition, but that the patient's family and friends appreciate the reasons for the dramatic change in the person's behaviour and that it is usually a reversible condition.

Aftercare

Many patients with delirium still have residual symptoms at the time of discharge from hospital. There is therefore a need for continued vigilance about medication, environmental change, and sensory problems during discharge planning and aftercare. Close liaison between hospital and primary care is an essential part of discharge planning.

Patients or their families will often need reassurance that an episode of delirium is not the start of an inevitable progression to dementia and that a full recovery can usually be expected. Delirious patients may erroneously be placed in long term care as "demented": decisions to place patients in care should be made only after an adequate assessment that differentiates delirium from dementia.

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Excessive use of sedative drugs often causes more problems that it solves

Key medicolegal judgments about patients' capacity and consent

Re c (mental patients: refusal of treatment) [1994] 1 WLR 290

An adult has the capacity to consent to or refuse treatment if he or she can

- Understand and retain the information relevant to the decision in question
- Believe that information
- Weigh the information in the balance to arrive at an informed choice

Re f (mental health sterilisation) v West Berkshire Health Authority (1989) 2 WLR 1025; (1989) All ER 673

"not only (1) must there be a necessity to act when it is not practicable to communicate with the assisted person but also (2) the action taken must be such as a reasonable person would in all circumstances take, acting in the best interests of the assisted person."

"Action properly taken to preserve life, health or wellbeing of the assisted person (which) may well transcend such measures as surgical operations or substantial treatment and may extend to include such humdrum matters as routine medical or dental treatment, even such simple care as dressing and undressing and putting to bed."

Evidence based summary

- A quarter of hospitalised elderly patients will have delirium
- Occurrence of delirium predicts poorer outcome and greater length of stay even after controlling for other variables, including severity of illness
- Positive identification and management of risk factors can reduce incidence and severity of delirium in elderly patients

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Further reading

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