

THE DELIRIOUS PATIENT

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DEFINITION AND DIAGNOSIS

Delirium is a clinical syndrome characterized by acute fluctuations in mental state, cognitive impairment, reduced awareness of the environment, increased or reduced psychomotor activity, altered state of consciousness and disturbed attention span. The Confusion Assessment Method (CAM) by Inouye et al is a sensitive screening test and the diagnosis of delirium requires the presence of:

- acute onset and fluctuating course, and
- inattention and either one of the latter
- disorganised thinking or
- altered level of consciousness¹.

Delirium in the elderly is often difficult to differentiate from depression and dementia. Refer to Table 1. Sometimes delirium can even co-exist with depression and dementia. It is important to realize it can present in protean ways that clinicians may fail to recognize. Failure to diagnose and treat delirium is associated with increased morbidity and mortality as well as prolonged hospitalization.

EPIDEMIOLOGY

The prevalence of delirium in the elderly varies across different clinical settings and study populations. In the community, about 1% of older people have delirium². In acute hospitals, about 15% of elderly patients may have delirium on admission to general medical departments³. A further 5 to 10% of the elderly patients develop delirium during their in-patient stay⁴. However, delirium is often unrecognised by physicians⁵.

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ETIOLOGY (DELIRIUM)

It is important to understand that delirium can be one of the presenting symptoms of disease in the elderly. It is not a final diagnosis and the patient must be thoroughly evaluated to ascertain the cause or causes of delirium. Often in the elderly patient, delirium has a multi-factorial etiology and a single cause approach is simplistic and inadequate. A typical elderly person may be confused following an acute myocardial infarction but in an intensive care setting, environmental and pharmacological risk factors aggravate the delirious state as well. Refer to Table 2 for Causes of Delirium.

Drugs are common causes of acute confusion in the elderly. They include sedatives, antidepressants, anti-histamines, anti-inflammatory agents, anti-parkinsonian drugs and steroids. Polypharmacy aggravates the situation further. Treatment involves a review of the patient's medication list and stopping the offending drug. However, delirium can still

Table 1: Differential diagnosis of Delirium

	Delirium	Dementia	Depression
Onset	Sudden	Gradual	Variable
Conscious Level	Reduced	Clear	Normal
Progress	Fluctuating	Progressive	Variable
Memory	Poor	Poor	Intact

Table 2: Causes of Delirium

κ	Drugs
κ	Electrolyte/metabolic abnormalities
κ	Loaded rectum
κ	Intracranial lesions
κ	Retention of urine/restrainers
κ	Infections
κ	Unfamiliar environment
κ	Myocardial infarction

persist for days or weeks because of the decreased metabolism and excretion of the drug in older people.

Electrolyte and metabolic abnormalities such as hypo- or hyperglycaemia, hypo- or hypernatremia, hypo- or hyperthyroidism, hypercalcemia, dehydration and various organ failures (respiratory, liver and renal) can present with delirium.

Faecal Loading causing severe abdominal colicky pain can cause the elderly patient to be aggressive and agitated. Prompt attention to bowel movement will quickly resolve the hyperactive state.

Intracranial lesions like cerebral infarction or haemorrhage, subarachnoid haemorrhage, subdural haematomas, acute meningitis and neoplasms can cause acute confusion with accompanying localizing neurological deficits.

Restraining the elderly patient in bed with physical restrainers and retention of urine with subsequent bladder catheterization are two common situations associated with delirium. Elderly patient can turn angry and frustrated when physically restrained. Those with indwelling urinary catheters may become agitated and pull at their catheters resulting in urethral injuries. Close monitoring and reassurance of these patients are essential.

Infections such as pneumonia, urinary tract infection, cellulitis and biliary tract infections can present with an acute confusional state.

Unfamiliar environment can frequently precipitate delirium. Such situations include the transfer of elderly patients to the intensive care unit from a general ward and when elderly patients are rotated to stay with their carers at different addresses at short intervals.

Myocardial infarction, cardiac failure and other hypoperfusion states can also cause delirium.

RISK FACTORS FOR DELIRIUM

The common risk factors for delirium are advanced age, pre-existing dementia, chronic co-morbidities (stroke, cardiac failure, chronic obstructive airway disease etc), previous history of delirium, history of psychiatric disorder, polypharmacy, sensory impairment (vision and hearing), social isolation and physical stress (pre- and post operative)⁶. Thus, the astute clinician will have a high index of suspicion to detect delirium when faced with an elderly with some of the above risk factors.

CLINICAL FEATURES OF DELIRIUM

One key feature of delirium is disturbed cognition whereby thinking becomes incoherent, memory is impaired and perception is altered. The patient is disorientated for time, place and person; fails to recognize family members, unable to think clearly and may even hallucinate. The attention span is also impaired and the patient is easily distracted. The level of consciousness is reduced and there is also interruption of the sleep-wake cycle (patient is drowsy and sleeps during the day but has insomnia at night). The psychomotor behaviour can take one of three forms namely – hyperactive, hypoactive, or mixed types. The hyperactive patient is typically agitated, noisy and may even exhibit violence. However, the hypoactive patient is withdrawn, drowsy and quiet. The majority of patients have the mixed type with both hyperactive and hypoactive features. In addition, the patient may exhibit emotions such as anger, fear and

depression. Some patient may even become incontinent of faeces and urine during the delirious state (Table 3), Clinical features of Delirium (Impaired CAPERS).

COMPLICATIONS OF DELIRIUM

A delirious patient is at risk of injury. Falls resulting in fractures and head injuries, aspiration pneumonia, refusal to comply with treatment and participate in rehabilitation, prolonged immobility, pressure sores, prolonged hospitalization and admission to nursing homes can occur when delirium is not treated early.

MANAGEMENT OF DELIRIUM

It is important to recognize delirium quickly because a missed diagnosis and failure to treat it promptly is associated with increased mortality. In fact, the development of delirium in a previously not confused patient is a poor prognostic sign. The patient will require immediate admission to a hospital for diagnostic tests and treatment.

There are two key aspects in the successful management of delirium. Firstly, an accurate diagnosis of the syndrome and its treatment must be carried out. Secondly, whilst awaiting the investigative and treatment of the specific causes, skilled supportive nursing care and symptomatic therapy are essential to ensure the safety and well being of the patient.

A comprehensive review of the clinical features, pre-existing medical and psychiatric illnesses, drug history, functional state and any change in living arrangements is obtained from the patient and collaborated with history

Table 3: Clinical features of Delirium (Impaired CAPERS)

κ	Cognition
	Incoherent thinking
	Impaired memory
	Altered perception
κ	Attention span
κ	Psychomotor activity – hyperactive, hypoactive or mixed
κ	Emotion – anger, fear, depression
κ	Reduced level of consciousness
κ	Sleep-wake cycle.

obtained from carers. In the physical examination attention is paid to monitor the vital signs, temperature and a thorough assessment of the neurological, cardiopulmonary and abdominal systems and mental state of the patient. The relevant investigations carried out are guided by the clinical history and findings of the physical examination and is summarized in Table 4.

There is early evidence to show that nurses trained in handling delirious patients improve the patients' outcome⁷. Close monitoring of the patient's vital signs, behaviour, sleep pattern, fluid intake and output, food intake, bowel habit and continence is important. Patients who are very drowsy and unable to swallow should not be fed orally because of the risk of aspiration. The use of restraints should be discouraged and patients restrained only as a measure of last resort when other behavioural measures fail and if the agitated patient very likely to harm oneself. A quiet, well lit environment will lessen agitation and rehabilitation should be started.

Drug treatment is a double edged sword. Anti-psychotic agents and sedatives are the two common classes of drugs used for symptomatic

Table 4: Investigations for delirium are guided by the clinical history and findings on physical examination

κ	Full blood count
κ	Urea, Electrolytes, Creatinine, Calcium, Phosphate levels
κ	Liver function test
κ	Thyroid function test
κ	Septic work up – urine, sputum and blood cultures
κ	Chest X rays
κ	ECG
κ	CT scan head.

therapy of delirium. They are effective in reducing the level of agitation and violent behaviour but they cause increased drowsiness, falls and further cognitive impairment. Oral haloperidol is the preferred neuroleptic. It is started at low dose of 0.25 mg at night and gradually increased with close monitoring of its side effects such as features of Parkinsonism. Recently, there are anecdotal reports of newer anti-psychotics such as olanzepine and risperidone being effective for treatment of delirium. Olanzepine is started at 2.5 mg at night while risperidone is given at 0.25 mg at night. Both of them tend to have less extrapyramidal side effects, but olanzepine may cause agranulocytosis and risperidone can cause significant postural hypotension. If the patient is severely anxious and not able to sleep, lorazepam, a sedative is commonly used. It is also a useful adjunct to a neuroleptic because it can control agitation in patients not able to tolerate high doses of the neuroleptic. Lorazepam is started at 0.5 mg at night.

The patient must be followed up to monitor complete resolution of the delirious state, any deterioration or recurrence and even the presence of dementia later on.

CONCLUSION

Delirium is a common unrecognised syndrome in the elderly. It must be accurately assessed and treated because it carries a high mortality rate. A multi-prong approach comprising of expert nursing care, conducive environment, rehabilitation and pharmacotherapy is effective in treating delirium.

REFERENCES

1. Inouye SK, van Dyck CM, Aleissi CA, et al. Clarifying confusion: the Confusion Assessment Method. A new method for detection of delirium. *Ann Intern Med* 1990; 113:941-8.
2. Levkoff S, Cleary P, Liptzin B, Evans DA. Epidemiology of delirium: An overview of research issues and findings. *Int Psychogeriatr* 1991; 3(2):149-67.
3. Francis J, Kapoor WN. Delirium in hospitalized elderly. *J Gen Intern Med*. 1990; 5(1):65-79.
4. Levkoff S, Cleary P, Liptzin B, Evans DA. Epidemiology of delirium: an overview of research issues and findings. *Int Psychogeriatr*. 1991; 3(2):149-67.
5. Rockwood K, Cosway S, Stolee P, Kydd D, et al. Increasing the recognition of delirium in elderly patients. *J Am Geriatr Soc* 1994; 42:252-6.
6. Meagher DJ. Delirium: optimising management. *BMJ* 2001; 322:144-9.
7. Simon L, Jewell N, Brokel J. Management of acute delirium in hospitalized elderly: a process improvement project. *Geriatr Nurs* 1997; 18:150-4.

Questions

1. Which of the following is not reversible?
 - a. Delirium
 - b. Dementia
 - c. Depression.
2. Treatment of delirium would include the following except
 - a. reversing the acute event
 - b. nursing care
 - c. supportive treatment
 - d. hypnotics
 - e. restraints
 - f. psychotherapy.