

## Delirium

### Definition of delirium

- An acute disturbance of the mind, with features including (but not limited to):
  - Memory impairment
  - Disorganised thinking
  - Hallucinations (particularly visual)
  - Personality changes
  - Changes in sleep pattern
- These changes often fluctuate in severity, can be rapid in onset, and **are usually reversible**

### Epidemiology of delirium

- Within the general hospital population incidence is 20-30%
- Incidence in patients post-surgery 10-50%
- Within community patients in long-term care, rates are up to 20%
- The incidence is much higher within the subgroup of at-risk patients, for example:
  - Elderly patients
  - Patients with sensory deficits (e.g. poor eyesight, poor vision/blind)
  - Patients with pre-existing cognitive impairment (e.g. dementia, previous brain injury)

### Risk factors for delirium

- Infection
- Pain
- Constipation
- Urinary retention
- Drugs
  - E.g. side-effects of analgesics such as opiates or neuroleptics
  - E.g. sudden withdrawal of alcohol (delirium tremens)
- Diseases causing cerebral irritation
  - E.g. encephalitis/meningitis
  - E.g. post-ictal in an epileptic patient
- Unfamiliar places/surroundings
  - E.g. hospitals
- Poor lighting/lack of natural light
  - E.g. hospitals
- Abnormal electrolyte/plasma concentrations
  - E.g. uraemia, hyponatraemia, hypercalcaemia
- Surgical interventions
  - Potentially secondary to post-op complications such as pain/infection as above
  - Increased risk of delirium secondary to general anaesthetic – ongoing research into the effects of induction agents on the brain in mouse models
- Patients with terminal conditions

### Presentations of delirium

- Delirium can be broadly classified into two general subtypes: hyper- and hypoactive.
  - There is no real association between the underlying cause of the delirium and the type of behaviour seen, but it is important not to miss the hypoactive symptoms, or to dismiss them as one of the differential diagnoses

- **Hyperactive delirium**
  - Increased agitation (e.g. fiddling at bed sheets, wandering on the ward, calling out)
  - Hallucinations (visual or auditory)
  - Altered personality (e.g. more aggressive)
  - Altered sleep pattern (e.g. daytime sleeping and night-team waking)
  - New or worsening confusion
- **Hypoactive delirium**
  - Increasingly withdrawn and uncommunicative
  - Worsening mood and depression-like symptoms
  - Worsening oral intake and failure to self-initiate activities of daily care
  - Worsening mobility
  - Poor concentration and poor persistence
    - E.g. giving up on tasks quickly – can relate back to poor oral intake
  - In the extreme cases, can lead to catatonic states

### Differential diagnosis of delirium

- New diagnosis of – or deterioration of – dementia
  - Of note, Lewy body dementia can be associated with visual hallucinations
- Psychiatric diseases
  - E.g. schizophrenia for auditory hallucinations
  - Depression/manic phase of bipolar disorder
- Neurologic disease
  - Stroke
  - Post-ictal confusion
  - Encephalitis
- Try to not dismiss any symptoms – particular hypoactive symptoms – as “just old age”

### Diagnosing delirium

- Be aware of which patients are at particular risk of delirium
- NICE guidelines on delirium particularly highlight the following groups as at-risk:
  - Age > 65 years
  - Previous episodes of delirium/confirmed PMH of dementia
  - Current hip fracture
  - Severe concurrent illness
- Diagnostic tools include:
  - CAM (Confusion Assessment Method):
    - Acute onset and fluctuating course *and*
    - Inattention *and either*
    - Disorganised thinking *or*
    - Altered level of consciousness (which may include hyper-alert in addition to depressed levels of consciousness)
- Other simple tools such as the AMTS (abbreviated mental test score), MMSE (mini-mental state examination), or MOCA (Montreal cognitive assessment) can provide an idea of the presence of cognitive impairment, but it is the other aspects (the acute onset, fluctuating course, and inattention) that help to determine the presence of acute delirium

### Prevention of delirium

- Experiencing an episode of delirium is associated with increased morbidity, mortality, and length of hospital stay. As such, prevention is better than cure. All healthcare professionals can take simple steps to drastically reduce the risk of patients suffering from delirium. These include:
  - Trying to maintain familiarity with the healthcare professionals taking care of a patient
  - Nurse in a well-lit, well signposted ward during the day
  - Try to keep light and noise levels at night to a minimum to help promote a normal sleep cycle
  - Ensure bowels are opening regularly – check daily during the ward round and ensure laxatives/enemas/suppositories are available
  - Ensure appropriate oxygenation – ensure a patient is not persistently hypoxic whilst on treatment (e.g. PE or pneumonia), and similarly that people at risk of CO<sub>2</sub> retention are not being over-oxygenated
  - Monitor blood sugar levels and ensure good nutritional intake
  - Ensure good fluid intake to prevent dehydration
  - Check if the patient is in pain and provide good analgesia
    - But beware of the potential for opiate and neuroleptic analgesics to actually cause delirium
  - Review all drugs on a regular basis
    - There is the potential for patients to be continuing to take medications which are either inappropriate or no longer required
    - Benzodiazepines, anti-psychotics, and anti-depressants are all common causes of drug-induced delirium, and if they can be stopped, they should be
  - Photos of friends and families around the bedside can act to comfort a patient and reduce the chances of precipitating delirium; maintain a good relationship with relatives and seek their help in the care of your patient

#### **Treatment of delirium**

- Reversing the underlying cause of the delirium is key to the treatment of delirium
- Ensure all possible causes of delirium have been reviewed and appropriately treated
  - In view of the wide range of possible causes, it is beyond the scope of this section to discuss the treatment of each of them in detail – ensure each has been considered, and if a potential cause, treat appropriately
- To treat the symptoms themselves, try to not resorting to pharmacological therapies straight away as they can make the symptoms worse
  - Re-orientate the patient to the time, place, person whenever you interact with them
  - Leave a brief summary of where they are and what they are being treated for in front of them, to act as a regular reminder
  - If a particular patient is very agitated, and if staffing allows, 1-1 nursing can provide more support to a patient that pharmacological intervention can ever manage
  - Try to ensure familiar faces are nearby to reassure the patient (e.g. family members, photos, healthcare professionals who have cared for the patient regularly)

#### **Further management of delirium**

- If despite treatment of the underlying cause, or if whilst the delirium is resolving and despite non-pharmacological treatments as suggested above, a patient remains acutely agitated and a risk to themselves or others, they may need further intervention
  - Short-courses of antipsychotics
    - Haloperidol (0.5mg to 1.5mg PO or SC – ideally on a OD dosing. Only IM if absolutely necessary)
    - Olanzapine (2.5mg po 5mg PO or SC – up to 2-hourly, max 3 doses/24h)

- If at all possible, benzodiazepines should be avoided
- The medications above should be reviewed on a regular basis and stopped as soon as possible
- Caution should be used when using such medications in a patient with a background of pre-existing dementia, in particular Lewy Body dementia, Parkinson's Disease or Parkinson's Plus syndromes. If possible, they should not be used in these patients.
- In severe hypoactive delirium where oral intake is impaired, artificial methods of supporting their nutritional status may be required such as NG-feeding
- Deprivation of Liberty Safeguards (DOLS)
  - DOLS may be required in order to safely treat a patient on the ward who – due to their delirium – lacks to capacity to agree to treatment
  - DOLS should ideally be completed in any patient who has any form of limitations to their freedom, which has been done in their best interests
    - E.g. stopping a confused patient from leaving the ward
    - E.g. putting on mittens to prevent them pulling out lines
    - E.g. leaving the side-rails of the bed up to stop them from falling or climbing out
  - Some of these examples may seem extreme, but they are important safeguards for both patients and healthcare professionals to ensure safe and ethical treatment of the acutely delirious patient
  - For more information, please see the section on DOLS and capacity

### Complications of delirium

- Risk of falls and their sequelae
- Deterioration in mobility secondary to prolonged bed rest
- Increased risk of aspiration pneumonia if a patient's swallow is affected
- Risk of misdiagnosis with a more generalised illness (e.g. dementia)
- Risk of injury to healthcare professionals (e.g. bites, scratches, and their associated infection risks)
- Increased risk of developing dementia in future
- Long-term effects on a patient's independence and self-confidence
  - Do not be fooled by the term "pleasantly confused"; delirium can be a truly terrifying experience, and can leave a lasting impression on the sufferer

### Prognosis of delirium

- If the underlying cause of the delirium is reversed, one can usually expect the delirium itself to subsequently resolve
  - This resolution has a variable time-course, and can at times be prolonged (up to months)
  - In up to 30% of cases the confusion will not fully resolve. This is more likely to be the case when there is some underlying cognitive impairment.
- There is an increased risk of subsequent delirium after an initial episode
- There is an increased risk of morbidity and mortality in patients who experience an episode of delirium. Within the hospital in-patient population, patients who suffer an episode of delirium are more likely to experience a prolonged hospital admission compared to those who do not
- Prognosis also dependent on any complications experienced during the acute episode itself
  - E.g. falls leading to head injury or fractured NOF
  - Prolonged periods of having an unsafe swallow leading to poor oral intake, or being bed-ridden may leave to a marked step-down in mobility and independence