

Old Age Module

A large, stylized orange bracket that spans across the width of the slide, pointing downwards towards the word 'Delirium'.

Delirium

Delirium

Aims and Objectives

- The overall aim of the session is for the trainee to gain an overview of delirium
- By the end of the sessions the trainee should:
 - Understand the epidemiology, the risk factors associated and the basic physiological and psychological changes associated with delirium
 - Have an understanding of the clinical features of delirium, and have a framework for the basic assessment process, principles of management, and prognosis.

Delirium

To achieve this

- Case Presentation
 - Journal Club
 - 555 Presentation
 - Expert-Led Session
 - MCQs
-
- Please sign the register and complete the feedback

Delirium

Expert Led Session

Delirium in the Elderly

Dr Sadia Ahmed

Consultant Older Adult Psychiatrist

Peer reviewed by Dr Anthony Peter, June 2020

Delirium

- A neuropsychiatric syndrome that is common among the medically ill and often is misdiagnosed as a psychiatric illness which can result in delay of appropriate medical intervention
- There is significantly mortality associated with delirium so identifying it is crucial!

Clinical Features

- Acute onset
 - Usually develops over hours to days
 - Onset may be abrupt
- Prodromal phase
 - Initial symptoms can be mild/transient if onset is more gradual
 - Fatigue/daytime somnolence
 - Decreased concentration
 - Irritability
 - Restlessness/anxiety
 - Mild cognitive impairment

Clinical Features

- **Fluctuation**
 - Unpredictable
 - Over course of interview
 - Over course of 1 or more days
 - Intermittent
 - Often worse at night
 - Windows of lucidity (may function at “normal” level)
- **Psychomotor disturbance**
 - Restless/agitated
 - Lethargic/inactive

Clinical Features

Disturbance of consciousness

- Hyperalert (overly sensitive to stimuli)
- Alert (normal)
- Lethargic (drowsy, but easily aroused)
- Comatose (unroutable)

Inattention

- Reduced ability to focus/sustain/shift attention
- Easily distractible
 - External stimuli interfere with cognition
- May account for all other cognitive deficits

Clinical Features

Disruption of sleep and wakefulness

- Fragmentation/disruption of sleep
- Vivid dreams and nightmares
 - Difficulty distinguishing dreams from reality
- Somnolent daytime experiences are “dreamlike”

Emotional disturbance

- Fear
- Anxiety
- Depression

Clinical Features

Disorders of thought

- Abnormalities in form and content of thinking are prominent
- Impaired organization and utilization of information
- Thinking may become bizarre or illogical
- Content may be impoverished or psychotic
- Delusions of persecution are common
- Delusions tend to be fragmented
- Judgment and insight may often poor

Clinical Features

Disorders of language

- Slow and slurred speech
- Word-finding difficulties
- Difficulty with writing

Disorders of memory and orientation

- Poor registration
- Impaired recent and remote memory
- Confabulation can occur
- Disorientation to time, place, and occasionally person

Three Types of Delirium

1. Hyperactive Delirium

- The patient is hyperactive, combative and uncooperative.
- May appear to be responding to internal stimuli
- More likely to come to our attention because they are difficult to care for.

Types of Delirium

2. Hypoactive Delirium

- Patient appears to be napping on/off throughout the day
- Unable to sustain attention when awakened, quickly falling back asleep
- Misses meals, medications, appointments
- Does not ask for care or attention
- Easy to miss ‘Mrs Smith is no problem at all doctor!’

Types of Delirium

3. Mixed

- a combination of both types just described

The most common types are hypoactive and mixed accounting for approximately 80% of delirium cases

Screening

Confusion Assessment Method (CAM – 4 features)

- 1. Acute change in mental state with a fluctuating cause and**
- 2. Inattention**
plus
- 3. Disorganised thinking or**
- 4. Altered level of consciousness.**

Sensitivity 94-100%

Specificity 90-95%

Diagnosis and severity rating

- **Delirium Rating Scale Revised 98 (DRS-R98)** Trzepacz, P.T., Baker, R.W. and Greenhouse, J. (1988).
- Diagnosis (initial assessment) and severity (repeated measurements) scale that can be used in research or clinical evaluations of symptom severity
- Severity items are rated on a scale of 0-3 and diagnostic items are rated on a scale of 0-2 or 0-3. The maximum possible score for severity items is 39, while the maximum total score is 46. Higher scores indicate more severe delirium; score of 0 indicates no delirium.
- Other scales are available

Epidemiology of Delirium

- Approximately
 - 40% of hospitalized elderly pts >65 years of age
 - 50% of pts post-hip fracture
 - 30% of pts in surgical intensive care units
 - 20% of pts on general medical wards
 - 15% of pts on general surgical wards

Why does it matter?

After adjusting for age, gender, race, pre-existing comorbidity & cognitive impairment, diagnosis and severity of illness:

- 3 fold higher rate of death by 6 months
- 1.6 fold increase in ICU costs.
- Longer hospital stays
- Nearly 10x rate cognitive impairment on discharge.
- 1 in 3 survivors with delirium develop cognitive impairment.
- Institutionalisation

Table 1

Differentiating features of conditions that mimic delirium

Feature	Condition			
	Delirium	Alzheimer disease	Psychotic disorders	Depression
Descriptive features	Confusion and Inattention	Memory loss	Loss of contact with reality	Sadness, anhedonia
Onset	Acute	Insidious	Acute or slow	Slow
Course	Fluctuating, often worse at night	Chronic, progressive (but stable over the course of a day)	Chronic, with exacerbations	Single or recurrent episodes; can be chronic
Duration	Hours to months	Months to years	Months to years	Weeks to months
Consciousness	Altered	Normal	Normal	Normal

A Model of Delirium

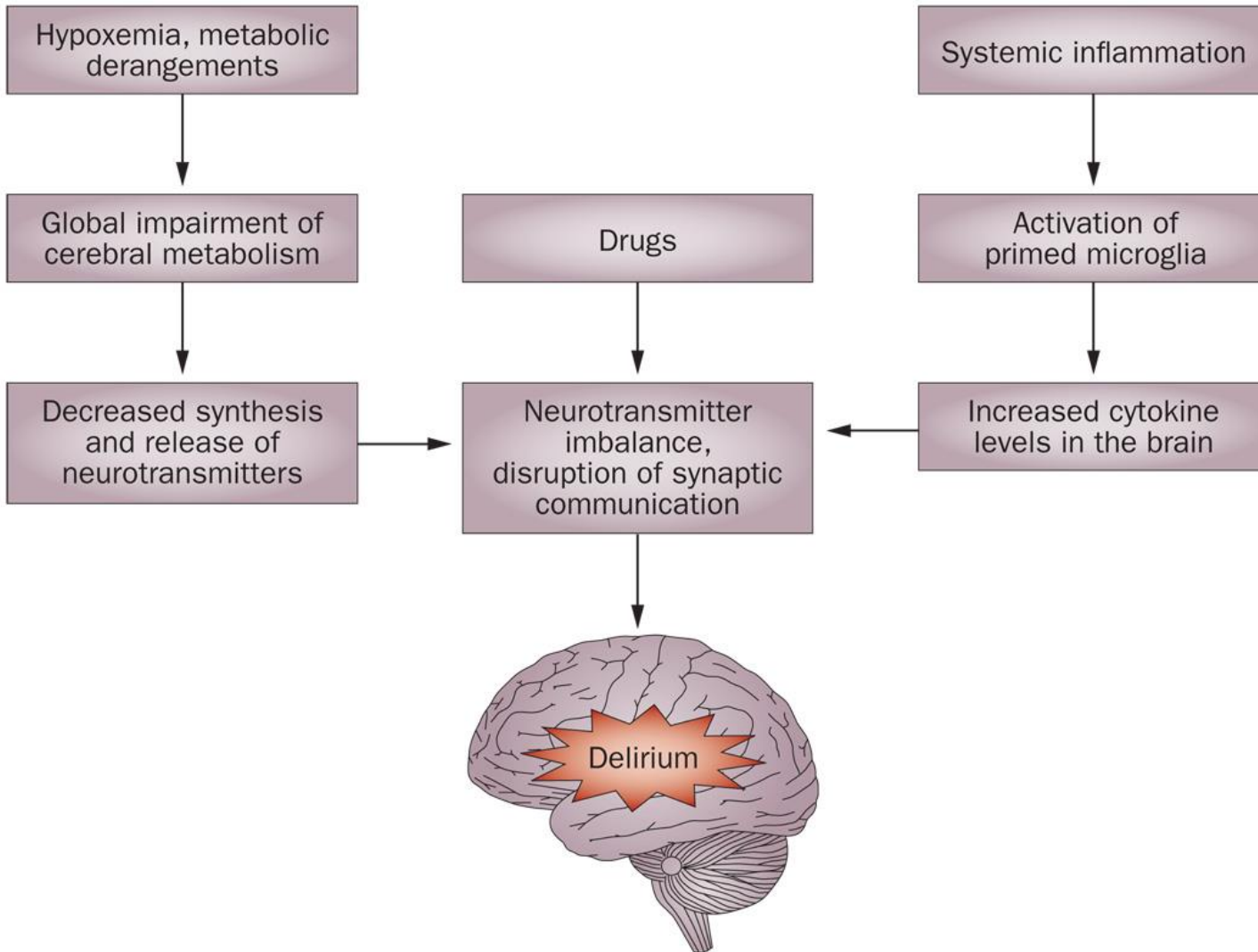
A multifactorial syndrome that arises from an interrelationship between

Predisposing factors → a patient's underlying vulnerability

and

Precipitating factors → noxious insults

Often no one single cause - multifactorial



Fong, T.G., Tulebaev, S.R. and Inouye, S.K., 2009. Delirium in elderly adults: diagnosis, prevention and treatment. *Nature Reviews Neurology*, 5(4), p.210.

Predisposing Factors

- Baseline cognitive impairment
 - 2.5 fold increased risk of delirium in dementia patients
 - 25-31% of delirious patients have underlying dementia
- Medical comorbidities:
 - Any medical illness
- Visual impairment
- Hearing impairment
- Functional impairment
- Depression
- Advanced age
- History of alcohol abuse
- Male gender

Precipitating Factors

- Medications
- **Bedrest**
- **Indwelling catheters**
- **Physical restraints** (also a proxy for severity)
- Iatrogenic events
- **Uncontrolled pain**
- Fluid/electrolyte abnormalities
- Infections
- Surgery
- Medical illnesses
- **Urinary retention and faecal impaction**
- Alcohol and drug withdrawal
- Environmental influences

Medication Related Precipitating Factors

Anticholinergics

- Opiates
- Benzodiazepines
- Corticosteroids
- Alcohol withdrawal
- Sedative-hypnotic drug withdrawal
- Any newly prescribed medication
- Over the counter (OTC) “home remedies,” especially those with anticholinergic effects (NSAIDs, nasal sprays, cold and flu meds)
- Addition of 3 newly prescribed medications

History is crucial

- When did the change in mental status begin?
- Does the condition change over a 24-hour period?
- Is there a change in the person's sleep patterns?
- What specific thought problems have been noticed?
- Is there a history of mental illness or similar thought disturbance?
- Has there been a sudden decline in physical function or a new onset of falls?
- Any recent changes to medications?
- **Collateral hx if vital 'what is normal' for this patient**
- **Avoid trap of labelling prematurely as dementia**

Delirium “Work Up”

REMEMBER THAT DELIRIUM IS A MEDICAL EMERGENCY!

PHYSICAL EXAMINATION IMPERATIVE

1. Vital signs
2. Cardiovascular, respiratory and GI
3. Neurological examination
4. Hydration and nutritional status
5. Evidence of sepsis
6. Evidence of alcohol abuse and/or withdrawal

Key to Effective Management

Examine for signs of:

- Hypoxia
- Volume depletion/overload
- Cardiovascular injury
- Metabolic encephalopathy
- Alcohol withdrawal
- Hypo- or hyperthermia
- New onset incontinence
- Urinary retention or faecal impaction

Key to Effective Management

Review medication list!

Baseline laboratory studies:

- Urinalysis
- Blood Investigations – FBC / U&Es / LFTs / TFT / ESR / CRP / Glucose / ABGs / blood Cultures

Further diagnostic testing (based on exam):

- Neuroimaging
- ECG
- Chest X-Ray
- EEG – (When difficult to differentiate delirium from acute psychotic state)
 - EEG typically shows slowing of alpha rhythms, the emergence of theta waves, and eventually bilaterally symmetrical predominantly frontal delta waves

Non-Pharmacological Approaches

- Presence of family members
- Interpersonal contact and reorientation
- Provide visual and hearing aids
- Remove indwelling devices: i.e. Foley catheters
- Mobilize patient early
- A quiet environment with low-level lighting
- Uninterrupted sleep

Delirium: Maximising Cognition

- Re-orientating strategies
 - Inclusion of orienting facts in normal conversation
 - Discussion of current events
 - Discussion of specific interests
 - Structured reminiscence
 - Word games
 - Cognitive stimulation

Management: Hyperactive Delirium

- **There is no pharmacological treatment of delirium**
- Use drugs only if absolutely necessary: harm, interruption of medical care
- **First line agent: haloperidol** (IV, IM, or PO)
 - For mild delirium:
 - Oral dose: 0.25-0.5 mg
 - IV/IM dose: 0.125-0.25 mg
 - For severe delirium: **0.5-1 mg IV/IM**
 - Patient will likely need **2-5 mg total** as a loading dose
- May use olanzapine and risperidone
(Loneragan E et al. *Cochrane Database Syst Rev.* 2007 Apr 18; (2))
- **NB** – check NICE guideline (olanzapine or haloperidol)

Haloperidol

WHAT SIDE EFFECTS WOULD YOU MONITOR FOR?

- QT prolongation
 - Risk of ventricular arrhythmias
 - Consider getting a baseline ECG
 - This medication is 'off label' without an ECG
- Extrapyrarnidal side effects
 - Acute dystonia
 - Parkinsonism
 - Akathisia
- Neuroleptic malignant syndrome
- Orthostatic hypotension (falls)
- Over-sedation

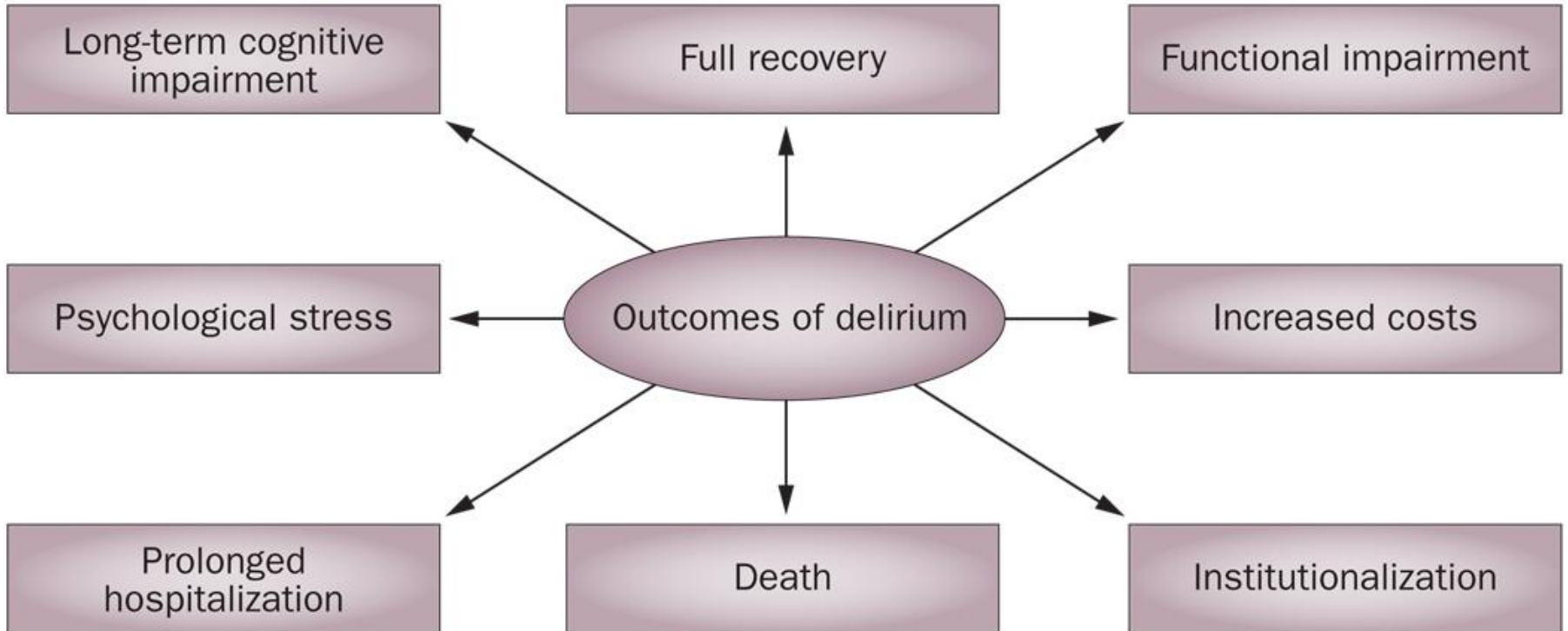
Lorazepam

- Second line agent
- Reserve for:
 - Sedative and alcohol withdrawal
 - Parkinson's Disease
 - Neuroleptic Malignant Syndrome

AVOID RESTRAINT AT ALL COSTS

Measure of LAST resort

Outcomes



Fong, T.G., Tulebaev, S.R. and Inouye, S.K., 2009. Delirium in elderly adults: diagnosis, prevention and treatment. *Nature Reviews Neurology*, 5(4), p.210.

Outcome

- **Poor prognosis** in the elderly
- Independently associated with:
 - Increased functional disability
 - Increased length of hospital stay
 - Greater likelihood of admission to long-term care institution
 - Increased mortality
 - 1 month: 16%
 - 6 months: 26%
- Symptoms often persist **6 months later**

Discussion Point

- Delirium often persists 6 months later or even longer
- Acute services not really designed for effective delirium management – ward environment, staffing levels etc
- Pressure to discharge patients who are ‘medically optimized’ (but may not be mentally optimized)
- Medical ward – ongoing treatable medical factors?
- Psychiatric ward – if severe persistent behavioral and psychiatric disturbance?
- Short term care – residual features but not safe to return home?
- Ideally need ‘delirium rehab’

Summary

- A multifactorial syndrome: predisposing vulnerability and precipitating insults
- Delirium can be diagnosed with high sensitivity and specificity using the CAM
- Prevention should be our goal
- If delirium occurs, treat the underlying causes
- Always try nonpharmacological approaches first
- Use low dose antipsychotics in severe cases

Selected references

- Delirium: prevention, diagnosis and management, NICE guidelines [CG103]
- Breitbart, W., Marotta, R., Platt, M.M., Weisman, H., Derevenco, M., Grau, C., Corbera, K., Raymond, S., Lund, S. and Jacobsen, P., 2005. A double-blind trial of haloperidol, chlorpromazine, and lorazepam in the treatment of delirium in hospitalized AIDS patients. *Focus*, 153(2), pp.231-340.
- Heneghan, C. and O'Sullivan, J., 2020. Antipsychotics for preventing and treating delirium: not recommended. *BMJ Evidence-Based Medicine*.

Online resources

- <http://www.europeandeliriumassociation.com/>
- <http://www.scottishdeliriumassociation.com/>
- <https://deliriumnetwork.org/resources/>
- <https://drshibleyrahman.wordpress.com/>
- <https://www.the4at.com/>
- <https://www.youtube.com/watch?v=BPfZgBmcQB8&feature=youtu.be>
- <https://deprescribing.org/>

Please provide feedback/suggestions on this presentation to the module lead Anthony.Peter@lancashirecare.nhs.uk

Old Age Module

MCQs

1. Which of the following is most frequently observed in delirium?
 - A. Hallucinations
 - B. Disturbed sleep-wake cycle
 - C. Labile mood
 - D. Increased motor activity
 - E. Systematised delusions

Old Age Module

MCQs

1. Which of the following is most frequently observed in delirium?
 - A. Hallucinations
 - B. Disturbed sleep-wake cycle**
 - C. Labile mood
 - D. Increased motor activity
 - E. Systematised delusions

Old Age Module

MCQs

2. Delirium increases the risk of developing dementia:
- A. No increase
 - B. Five-fold
 - C. Eight-fold
 - D. 20-fold
 - E. 30-fold

Old Age Module

MCQs

2. Delirium increases the risk of developing dementia:

- A. No increase
- B. Five-fold
- C. Eight-fold**
- D. 20-fold
- E. 30-fold

Davis, D.H., Muniz Terrera, G., Keage, H., Rahkonen, T., Oinas, M., Matthews, F.E., Cunningham, C., Polvikoski, T., Sulkava, R., MacLulich, A.M. and Brayne, C., 2012. Delirium is a strong risk factor for dementia in the oldest-old: a population-based cohort study. *Brain*, 135(9), pp.2809-2816.

Old Age Module

MCQs

3. Which of the following is not a risk factor for delirium:
- A. Recent surgery
 - B. Poor sight
 - C. Terminal illness
 - D. Pre-existing memory problems
 - E. Intellectual disability

Old Age Module

MCQs

3. Which of the following is not a risk factor for delirium:
- A. Recent surgery
 - B. Poor sight
 - C. Terminal illness
 - D. Pre-existing memory problems
 - E. Intellectual disability**

Old Age Module

MCQs

4. Which is a clinical feature common to both dementia and delirium:
- A. Rapid onset
 - B. Global cognitive impairment
 - C. Clouding of consciousness
 - D. Clear consciousness
 - E. Gradual onset over 6 months

Old Age Module

MCQs

4. Which is a clinical feature common to both dementia and delirium:
- A. Rapid onset
 - B. Global cognitive impairment**
 - C. Clouding of consciousness
 - D. Clear consciousness
 - E. Gradual onset over 6 months

Old Age Module

MCQs

5. Which assessment rating tool does NICE recommend using to assess for delirium:
- A. MOCA
 - B. CAM
 - C. MMSE
 - D. ACEIII
 - E. DAS21

Old Age Module

MCQs

5. Which assessment rating tool does NICE recommend using to assess for delirium:
- A. MOCA
 - B. CAM**
 - C. MMSE
 - D. ACEIII
 - E. DAS21

Old Age Module

Any Questions?

Thank you