

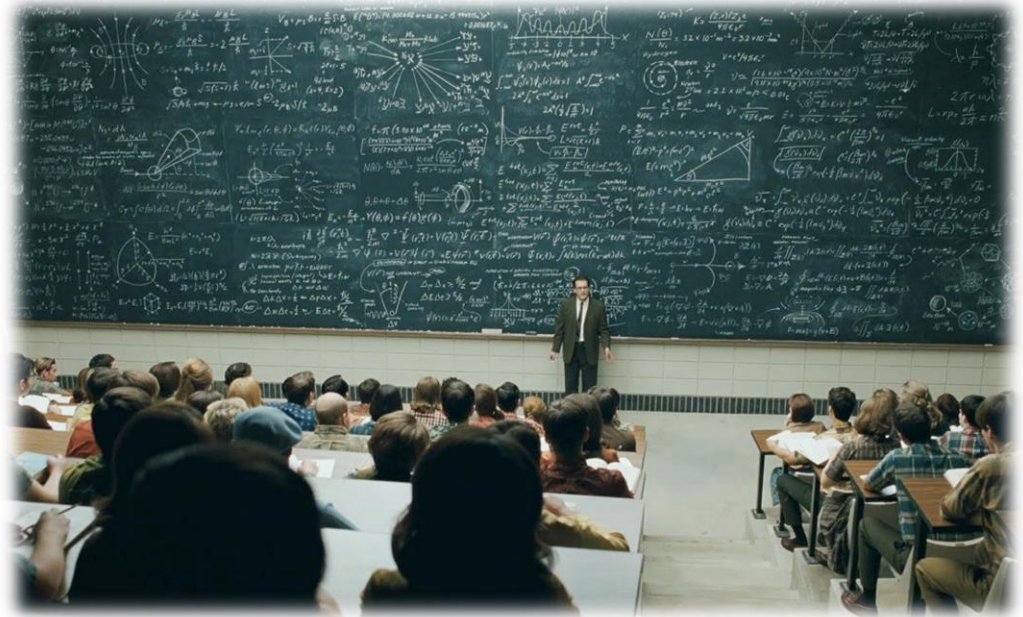
# Acute Confusional States

Dr Andrew Smith



# Acute Confusional States - Outline

- Definition
- Signs
- Assessment
- Management
- Mental Capacity Act
- Conflict Resolution
- Prognosis
  
- Cases Throughout



# Acute Confusional States

- I.e. Delirium
- It is an acute, fluctuating and reversible change in someone's mental state.
  - Some consider it an 'acute brain failure'.
  - May be:
    - Hyperactive – agitated, restless
    - Hypoactive – withdrawn, quiet
    - Mixed
- Affects up to 20% of hospital inpatients!
  - Increased morbidity/mortality
  - Increased length of stay
  - Increased costs



# Signs of Delirium

- **D**isordered thinking
- **E**uphoric, fearful, depressed or angry
- **L**anguage impairment
- **I**llusions, delusions and hallucinations
- **R**eversal of sleep-wake cycle
- **I**nattention
- **U**naware/disorientated
- **M**emory deficits



# Diagnosing Delirium

- NICE recommend diagnosis by using the CAM (Confusion Assessment Method) which is linked with the DSM criteria (see below).
- The CAM is a tool that diagnoses delirium if the following criteria are met:
  - Presence of acute onset and fluctuating course **AND**
  - Inattention
  - **AND EITHER**
  - Disorganized thinking **OR** Altered level of consciousness

## DSM-IV-TR diagnostic criteria

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- A. Disturbance of consciousness (i.e., reduced clarity of awareness of the environment) with reduced ability to focus, sustain, or shift attention.
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- B. A change in cognition (such as memory deficit, disorientation, language disturbance) or the development of a perceptual disturbance that is not better accounted for by a preexisting, established, or evolving dementia.
- 
- C. The disturbance develops over a short period of time (usually hours to days) and tends to fluctuate during the course of the day.
- 
- D. There is evidence from the history, physical examination, or laboratory findings that the disturbance is caused by the direct physiological consequences of a general medical condition.
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## Comparative Features of Delirium and Dementia

<b>Delirium</b>	<b>Dementia</b>
Develops suddenly/specific time	Onset is insidious/uncertain time
Fluctuating, usually reversible	Slow, progressive course
Usual duration of days to weeks	Usual duration of years
Cause: usually condition/ medication/withdrawal	Cause: usually neurologic (e.g., Parkinson's disease) or cardiovascular disorder (e.g., vascular dementia)
Greatly impaired attention	Attention only impaired in severe dementia
Varied range of consciousness	Normal level of consciousness (only impaired in severe dementia)
Variable orientation to time and place	Impaired orientation to time and place
Inappropriate, slow, and frequently incoherent language	Struggle to find the appropriate word
Sundowning—symptoms almost always worse at night	Symptoms often worse at night
Varied memory	Memory loss, particularly for recent events
Visual and tactile hallucinations are prominent	Delusions occur in 40% of individuals
Requires immediate medical attention	Requires nonemergency medical attention

### Case 1

Dorothy is an 87 year old lady who has been an inpatient for 4 days after a fractured neck of femur repair.

Her family are concerned that she seems more confused than usual and not engaging in conversation. She says she keeps seeing her deceased husband.

### Case 3

Craig is a 34 year old man who is day one following an emergency strangulated hernia repair.

The nurses are concerned that he is more agitated than when he was admitted and has started threatening other patients.

**Is it an Acute Confusion State?  
What could be the cause?**

### Case 2

Justin is an 18 year old boy who is brought to AnE at 2am on Saturday night by his friends.

They say he seems more drunk than usual, getting increasingly drowsy, incoherent and disorientated. He is not following your requests.



# Causes of Delirium

"I WATCH DEATH"	
Potential Causes	Differential Diagnosis
Infectious	Sepsis, encephalitis, meningitis, syphilis, central nervous system abscess
Withdrawal	Alcohol, barbiturates, sedative-hypnotics
Acute metabolic	Acidosis, electrolyte disturbance, hepatic/renal failure, other metabolic disturbances (glucose, magnesium, calcium)
Trauma	Head, burns
Central nervous system disease	Hemorrhage, cerebrovascular accident, vasculitis, seizures, tumor
Hypoxia	Acute hypoxia, chronic lung disease, hypotension
Deficiencies	Vitamin B12, hypovitaminosis, niacin, thiamine
Environmental	Hypo/hyperthermia, endocrinopathies, diabetes, adrenal, thyroid
Acute vascular	Hypertensive emergency, subarachnoid hemorrhage, sagittal vein thrombosis
Toxins/drugs	Medications, street drugs, alcohols, pesticides, industrial poisons, carbon monoxide, cyanide, solvents, etc.
Heavy metals	Lead, mercury

Source: Adapted from: Gower LE, et al. *Western J Emerg Med*. 2012;13:194-201.





# Assessment

- History (with collateral) is key
- Utilise cognitive assessment tools (e.g. AMTS, MMSE, MOCA)
- ABCDE
- Look at their drug chart
  - What are they taking, or not taking?*
- Check their observations
  - Hypotensive, hypoxic, temperature?*
- Look for infection
  - Urine dip, CXR, Blood culture*
- Check their U+Es, TFTs, Haematinics
- Check their glucose
- Further tests as indicated:
  - *CT head (if focal neurology, history of fall, raised ICP)*
  - *Lumbar Puncture*



"I'm stumped.  
We'll have to wait for  
the autopsy."

## The mini mental state examination

### Orientation

Year, month, day, date, season  
Country, county, town, hospital, ward (clinic)

### Registration

Examiner names three objects (for example, apple, pen, and table)  
Patient asked to repeat objects, one point for each.

### Attention

Subtract 7 from 100 then repeat from result, stop after five subtractions. (Answers: 93, 86, 79, 72, 65)  
Alternatively if patient errs on subtraction get them to spell world backwards: D L R O W  
Score best performance on either task.

### Recall

Ask for the names of the objects learned earlier.

### Language

Name a pencil and a watch.  
Repeat: 'No ifs, and or buts.'  
Give a three stage command. Score one for each stage (for example, 'Take this piece of paper in your right hand, fold it in half and place it on the table.'  
Ask patient to read and obey a written command on a piece of paper stating: 'Close your eyes.'  
Ask patient to write a sentence. Score correct if it has a subject and a verb.

### Copying


Ask patient to copy intersecting pentagons.  
Score as correct if they overlap and each has

MONTREAL COGNITIVE ASSESSMENT (MOCA)

NAME: \_\_\_\_\_  
Education: \_\_\_\_\_  
Sex: \_\_\_\_\_  
Date of birth: \_\_\_\_\_ DATE: \_\_\_\_\_

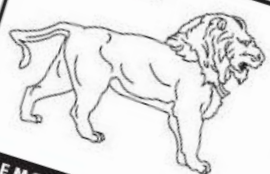
**VISUOSPATIAL / EXECUTIVE**


End (E) → A → 2  
Begin (1) → B → 2  
5, D, C, 4, 3

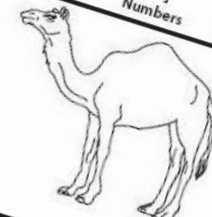
Copy cube  [ ]

Draw CLOCK (Ten past eleven) (2 points) [ ]

**NAMING**

 [ ]

 [ ]

 [ ]

Contour [ ] Numbers [ ] Hands [ ]

**MEMORY**

repeat them. Do 2 trials, even if 1st trial is successful.  
Do a recall after 5 minutes.

Read list of words, subject must repeat them. Do 2 trials, even if 1st trial is successful.

**ATTENTION**

Read list of letters. The subject must tap with his hand at each letter.

1st trial	FACE			
2nd trial	VELVET	CHURCH	DAISY	RED

Serial 7 subtraction starting at 100

Subject has to repeat them in the following order: \_\_\_\_\_

Subject has to repeat them in the following order: \_\_\_\_\_

**LANGUAGE**

Repeat: \_\_\_\_\_

Fluency / Name maximum number of words in \_\_\_\_\_

**ABSTRACTION**

Similarity between \_\_\_\_\_

**DELAYED RECALL**

Has to recall WITH NO \_\_\_\_\_

Category \_\_\_\_\_

Multiple choice correct \_\_\_\_\_

**Optional**

**ORIENTATION**

[ ] Date \_\_\_\_\_

© Z. Nasreddine MD Version 7.1  
Administered by: \_\_\_\_\_

Total score \_\_\_\_\_

1. Age
2. Time (to nearest hour)
3. Address for recall at end of test: e.g. 42 West Street. (Ask patient to repeat the address to ensure it has been heard correctly)
4. Year
5. Name of hospital
6. Recognition of two persons (e.g. doctor, nurse)
7. Date of birth
8. Year of start of first world war (or any famous event)
9. Name of monarch
10. Count backwards from 20 to 1

Each point scores one

# Medications Associated with Delirium

General Drug Class	Specific Drug Types	Example Medication
Anticholinergics	H <sub>1</sub> receptor blockers Antiparkinson Phenothiazine	diphenhydramine, meclizine, hydroxyzine benztropine promethazine
Antidepressants	Tricyclics SSRIs	amitriptyline, nortriptyline fluoxetine, sertraline
Sedative	Benzodiazepines	alprazolam, diazepam
Analgesics	Opioids	codeine, morphine
Antiinflammatory	NSAIDs Corticosteroids	aspirin, ibuprofen hydrocortisone, prednisone
Antihypertensives & Antiarrhythmics	Beta blockers Ace inhibitors Calcium channel blockers Other	metoprolol, propranolol lisinopril, captopril amlodipine, nifedipine digoxin
Antibiotics	Quinolones Macrolides	levofloxacin, ciprofloxacin azithromycin, clarithromycin
Anticonvulsives	Barbiturates	phenobarbital

### Case 1 - Dorothy

Col. Hx: ~~Stop the Cocodamol~~ and high functioning.  
Non-smoker. On regular Cocodamol.

Environmental modifications

Obs: BP 115/63 P 98 RR 19 Sats 98% air T 37.4

O/E: wound site clean, bruise on the back of the head

No other changes from admission

CT Head

Bloods: WCC 24 CRP 46 Glucose 6.4

Fluids

Na 148 K 5 Urea 17.1 Crea 210

Consider TFTs

Urine Dip: Nit + Leuc + Prot + Bld -

### Case 3 - Craig

### Case 3 - Craig

Can security (intervene using reasonable

Col. Hx: No next of kin. Patients say he has been  
vomiting and getting agitated all day.

Are communication techniques effective?

Last Obs: BP 145/86 P 101 RR 18 Sats 98% air T 36.5

Lorazepam 0.5 - 1mg PO/IV/IM

FBC: Hb 102 MCV 105 WCC 25.2

O/E: Unkempt, tremulous, sweaty. Non-cooperative  
with examination.

*Diazepam/Chlordiazepoxide are preferred.*

He starts physically attacking one of the other patients.

Thiamine (i.e. Pabrinex), and investigate

other deficiencies

### Case 2 - Justin

Glucose! (+/- fluids)

### Case 2 - Justin

Orally if possible  
Dextrose IV

Col. Hx: ?T1DM, friends say he always injects  
himself with something. They think he has epilepsy  
too.

Note

*Glucagon IM can be used in*

Obs: BP 138/89 P 98 RR 17 Sats 99% air T 36.4  
*hypoglycaemia but not in alcohol-*

O/E: Alcohol smell noted, sweaty.  
*induced hypoglycaemia, as the cause*

GCS 12/15 (E3 V4 M5) Nil else

*of low glucose in this case is*

ABG: pH 7.59 pO2 13.5 pCO2 4.8 pO2 2.5  
*inhibition of gluconeogenesis*

Na 147 K 3.3 Glu 1.1 Lac 1.9

?Epileptic Medication Toxicity

?Drug levels



### Case 1 - Dorothy

Stop the Codeine

Environmental modifications

Antibiotics for UTI

CT Head

Fluids

Consider TFTs

### Case 3 - Craig

Call security (?intervene using “reasonable” force, as per the Criminal Law Act 1967)  
Are communication techniques effective?

Lorazepam 0.5-1mg PO/IV/IM

*If alcohol withdrawal,*

*Diazepam/Chlordiazepoxide are preferred.*

Thiamine (i.e. Pabrinex), and investigate other deficiencies

### Case 2 - Justin

Glucose! (+/- fluids)

Orally if possible

Dextrose IV

*Note*

*Glucagon IM can be used in hypoglycaemia but not in alcohol-induced hypoglycaemia, as the cause of low glucose in this case is inhibition of gluconeogenesis.*

?Epileptic Medication Toxicity

?Drug levels





# Management - Environmental

- Clear communication
- Continually re-orientate the patient
  - verbally, clocks, calendars, open curtains
- Home comforts
  - photographs, ornaments etc.
- Get the family present
  
- Staff consistency
- Use health advocates if required
- Control temperature and lighting levels
- Single rooms if possible
  
- Prevention is better than cure
- MDT approach to identify high risk patients



# Management - Medical

- Treat the underlying cause
- Avoid use of sedatives unless no alternative
  - i.e. Patient is at risk to self or others and environmental tactics have failed

## Options:

- Low dose benzodiazepine e.g. **Lorazepam**  
0.5-1mg PO/IV/IM
- Antipsychotics e.g. **Haloperidol**  
0.5-2mg PO/IV/IM
- Atypical antipsychotics e.g. Clozapine
- Start with low-dose and reassess.



# Mental Capacity Act (2005)

- Different to the Mental Health Act which only governs the assessment and treatment of mental health disorders.
- **The MCA is based on 5 principles**
  - Capacity is presumed
  - Individuals should be supported to make decisions
  - Decisions made can be unwise/eccentric
  - Always act in the best interest of the patients
  - Use the least restrictive intervention
- **Capacity** is decision specific. To have capacity, one must:
  - Understand the information
  - Retain the information
  - Use the information to make an informed decision
  - Communicate the decision



# Mental Capacity Act (2005) continued

## **Deprivation of Liberty Safeguards (DoLS) – *part of the MCA***

- A DoLS is required in a patient who lacks capacity if the deprivation of liberty is in the best interests of the patient and is disputed by the patient or family.
- DoLS is a broad term but includes, for example, denying discharge, using restraint, one-to-one supervision.
- Standard application can take 21 days. Urgent applications can be made.

## **Independent Mental Capacity Advocate (IMCAs)**

- Neutral professionals appointed to act on behalf of patients who have no-one to represent them.
- Must be involved in serious decisions/DoLS applications if other suitable advocates are not available.
- Individuals can make **Advanced Directives** that govern decisions if they lose capacity
- They cannot demand treatments that are not medically justified
- **Lasting Powers of Attorney** allow others to be appointed to act in the patient's best interests.



# Conflict Resolution

- You may all be exposed to situations in which a person becomes agitated, angry and/or aggressive.
- Possible Triggers/Exacerbators :
  - Long wait before consultation/delays in investigations or treatment
  - Receiving Bad News
  - Loss of Control (e.g. forced dependency)
  - Mental health problems
  - Substance abuse/medications (active or withdrawal)





# Conflict Resolution (continued)

- There is usually a progression through certain behaviours and there are specific *warning* and *danger* signs that should be watched for.

- **Compliance** – the person will offer no resistance and complies with your request.
- **Verbal resistance and gestures** – the person refuses to comply either verbally or with their body language.
- **Passive resistance** – the person will either sit or stand and will not move.
- **Active resistance** – the person pulls away or pushes you, but makes no attempt to strike.
- **Aggressive resistance** – the person physically attacks you.
- **Serious or aggravated resistance** – the person causes serious injury and may use weapons.

## Warning signs

(if you can deal with these then they may never become danger signs)

- Direct prolonged eye contact
- Facial colour may darken
- Head is back
- Subject stands tall
- Kicking the ground
- Large movements close to people
- Breathing rate accelerates
- Behaviour may stop / start abruptly.

## Danger signs

(you need to think of your escape plan)

- Fists clenching and unclenching
- Facial colour may pale
- Lips tighten over teeth
- Head drops to protect throat
- Eyebrows droop to protect eyes
- Hands rise above waist
- Shoulders tense up
- A sideways stance is adopted
- Stare is now at intended target
- Lowering of body to launch forward.

- When assessing a conflict resolution scenario, there are certain factors that should be borne in mind:
  - People: *gender, age, size, mental state, number*
  - Objects: *alcohol or drugs, potential weapons*
  - Environment: *Time of day, space, safety exits, alarms*



# Conflict Resolution (continued)

## “Dos”

- Recognise the signs of anger and try to prevent escalation.
- Stay calm and composed.
- Acknowledge the legitimacy of the emotion but don't appropriate blame, i.e. show empathy.
- Apologise if appropriate.
- Demonstrate active listening
- Try to de-escalate the situation, e.g. soft voice, neutral body position
- Provide assertive explanation of what is not appropriate if required
- Keep your space, get help if required.

## “Don'ts”

- Interrupt the person
- Get angry/raise your voice/'square-up'
- Be defensive about the situation
- Try to pacify using touch



# Acute Confusional States - Prognosis

- Approx 2/3rds of patients should see complete resolution of the ACS. However, the ACS may last longer than the underlying cause.
- There may be a prolonged (e.g. 12 months) or residual deficit in some individuals.
- The presence of an ACS increases the risk of hospital acquired infections, fractures, pressure sores.



# Summary

- Delirium is a common condition, especially in hospitals.
- Its causes are legion; it is not the psychiatrists' problem to sort.
- Simple environmental techniques are beneficial.
- Treat the underlying cause.
- Short acting benzodiazepines or Haloperidol are first line medications if required but they should be avoided if possible.



# Thanks

## Any Questions?

### Bibliography

OHCM. – Longmore et. al.

[www.physiciansweekly.com/managing-delirium-elderly-patients](http://www.physiciansweekly.com/managing-delirium-elderly-patients)

[www.patient.co.uk/doctor/delirium](http://www.patient.co.uk/doctor/delirium)

NICE Guidelines on Delirium

