Delirium: Diagnosis & Management
What is Delirium?

Acute Confusional State

Definition:
- acute decline in attention and cognition

Why important?
- common problem
- serious complications
- often unrecognized
- may be preventable
How common is it?

- 10% to 40% prevalence & 5% to 10% incidence in hospitalized patients
- Can be as high as 50% for elderly patients
Key features

1) Acute onset and fluctuating course
2) Inattention
3) Disorganized thinking
4) Altered level of consciousness

Note: disorientation and inappropriate behavior not useful diagnostically
Spectrum of Delirium

Ranging from:

Hypoactive delirium (lethargy, excess somnolence) -- often missed
to:

Hyperactive delirium (agitated, hallucinating, inappropriate)
Delirium is a syndrome

- That means we must recognize it and decide what is causing it – NOT just treat it

- What are some of the causes of delirium in the hospital?
What causes Delirium?

- Patient related
- Disease related
- Iatrogenic
- Unfamiliar hospital environment
Etiology

Dementia, Drugs
Electrolytes, Eyes, Ears
Lungs, liver, heart, kidney, brain
Infection
Rx
Injury, pain, stress
Unfamiliar environment
Metabolic
Assessment

- Establishing delirium – history

Acute onset and fluctuating course

and

Inattention

and

Either Disorganized thinking

Or Altered level of consciousness

(Inouye et al., 1990)
<table>
<thead>
<tr>
<th>A. Acute onset</th>
<th>Is there evidence of an acute change in mental status from patient baseline?</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>and</th>
<th>Does the abnormal behavior:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluctuating course</td>
<td>➢ come and go?</td>
</tr>
<tr>
<td></td>
<td>➢ fluctuate during the day?</td>
</tr>
<tr>
<td></td>
<td>➢ increase/decrease in severity?</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Inattention</th>
<th>Does the patient:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➢ have difficulty focusing attention?</td>
</tr>
<tr>
<td></td>
<td>➢ become easily distracted?</td>
</tr>
<tr>
<td></td>
<td>➢ have difficulty keeping track of what is said?</td>
</tr>
</tbody>
</table>

**AND the presence of EITHER feature C or D**

<table>
<thead>
<tr>
<th>C. Disorganized thinking</th>
<th>Is the patient’s thinking</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➢ disorganized</td>
</tr>
<tr>
<td></td>
<td>➢ incoherent</td>
</tr>
</tbody>
</table>

For example does the patient have:

|                          | ➢ rambling speech/irrelevant conversation?                               |
|                          | ➢ unpredictable switching of subjects?                                  |
|                          | ➢ unclear or illogical flow of ideas?                                   |

<table>
<thead>
<tr>
<th>D. Altered level of consciousness</th>
<th>Overall, what is the patient's level of consciousness:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>➢ alert (normal)</td>
</tr>
<tr>
<td></td>
<td>➢ vigilant (hyper-alert)</td>
</tr>
<tr>
<td></td>
<td>➢ lethargic (drowsy but easily roused)</td>
</tr>
<tr>
<td></td>
<td>➢ stuporous (difficult to rouse)</td>
</tr>
<tr>
<td></td>
<td>➢ comatose (unrousable)</td>
</tr>
</tbody>
</table>
### COMPARATIVE FEATURES OF DELIRIUM AND DEMENTIA

<table>
<thead>
<tr>
<th>Feature</th>
<th>Delirium</th>
<th>vs.</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Abrupt</td>
<td></td>
<td>Insidious</td>
</tr>
<tr>
<td>Duration</td>
<td>Hours to days</td>
<td></td>
<td>Months to years</td>
</tr>
<tr>
<td>Attention</td>
<td>Impaired</td>
<td></td>
<td>Normal unless severe</td>
</tr>
<tr>
<td>Consciousness</td>
<td>Fluctuating, reduced</td>
<td></td>
<td>Clear</td>
</tr>
<tr>
<td>Speech</td>
<td>Incoherent, disorganized</td>
<td></td>
<td>Ordered, anomic/aphasic</td>
</tr>
</tbody>
</table>
**Delirium - Psychosis**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Delirium</th>
<th>Psychosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Abrupt - Sudden</td>
<td>Usually insidious</td>
</tr>
<tr>
<td>Course over 24hr’s.</td>
<td>Fluctuating with nocturnal exacerbations</td>
<td>Stable</td>
</tr>
<tr>
<td>Consciousness</td>
<td>Reduced globally disordered</td>
<td>Clear May be disordered</td>
</tr>
<tr>
<td>Attention</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognition</td>
<td>Globally disordered</td>
<td>May be Selectively impaired</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>Visual or visual and auditory</td>
<td>Auditory</td>
</tr>
<tr>
<td>Delusions</td>
<td>Fleeting, poorly systematized</td>
<td>Sustained and systematized</td>
</tr>
</tbody>
</table>
Assessment

- Structured instrument – diagnosis & monitoring
- Looking for etiology
  - History – hints reg. etiology
  - Alcohol/ substance
  - Physical exam
  - Review treatment charts - any recent change etc.
  - Targeted Investigations: Metabolic work-up: CBC, E.lytes, BUN/Cr, Glucose, LFT’s, Calcium, p02, ECG, Search for occult infection …… *Neuroimaging not required routinely*
Criteria for neuroimaging

- History of recent falls or head trauma
- Signs of head trauma
- Focal neurologic changes
- Fever with acute mental status changes, suspicion of encephalitis
- No identifiable etiology of acute mental status change
Management
Non-pharmacological

- Restoration of sleep
  - Schedule medications, vital signs, procedures to allow uninterrupted sleep
  - Lights off and decreased noise-level at night
  - No naps during the day

- Hydration, Nutrition

- Reduce sensory deprivation

- Early mobilization protocol

- Familiar family member

- Re-orientation cues
AVOID PRN medications

**Antipsychotics**

- Haloperidol 0.25 – 3/5 mg/day orally (twice daily)
- Haloperidol IV up to 2mg rapidly for severe delirium
- Maintenance: 50% loading dose in divided doses over next 24 hours
- Taper dose over next few days
- Risperidone, olanzapine & quetiapine
Management
Pharmacological

BZD

- Main role in delirium tremens/ alcohol withdrawal complicating the picture
- Use with caution if at all in other conditions
Preventing Delirium

- Identify high risk group

<table>
<thead>
<tr>
<th>Risk factors &amp; intervention</th>
<th>Intervention Protocol</th>
</tr>
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<tbody>
<tr>
<td>Cognitive Impairment</td>
<td>Reality orientation, Activities protocol</td>
</tr>
<tr>
<td>Sleep Deprivation</td>
<td>Sleep enhancement protocol</td>
</tr>
<tr>
<td>Immobilization</td>
<td>Early mobilization protocol</td>
</tr>
<tr>
<td>Sensory impairment</td>
<td>Amplifying devices</td>
</tr>
<tr>
<td>Dehydration</td>
<td>Early recognition and volume repletion</td>
</tr>
</tbody>
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Case for discussion

- 64 / M, BA pass
- Date of Admission: 26.02.15
- Date of Surgery: 12.03.15
- Date of Examination by Psychiatry Referral team: 14.03.15
- Reason for Referral: Suspiciousness, irrelevant talk
- Medical/Surgical Diagnosis: CAD – TVD, POD-2 – CABG
Case for discussion

- Hypertensive
- 25th February 2015 – MI
- Diagnosed as CAD-TVD
- Underwent CABG on 12th March 2015
- On POD1 – Was somewhat drowsy and lethargic, would not be able to pay much attention to what was told to him – but would recognize family members, was co-operative
Case for discussion

- On morning of POD2 - all of a sudden family members noticed changes in his behavior
- Started saying that the doctors in the ward gathered together and were discussing about him, that by pressing a button the patient can be killed
- Non co-operative with staff
- Delusions
Case for discussion

- **Fluctuate** - for around ½ to 1 hour in between – would be his usual self and co-operate

- Also in-between would become drowsy and inattentive, and would have to be asked or told things repeatedly, or would simply drift into sleep

- By evening – his above symptoms worsened *sundowning*

- After sometime started talking something *irrelevantly* in a low and incomprehensible voice
Case for discussion

- No past history
- No other med history
- No substance use
- Physical exam – vitals stable
- MMSE – 16/30