Delirium in the Elderly

Learning Objectives

- Recognize that delirium is a common presentation of disease in the elderly
- Recognize that delirium is associated with adverse outcomes
- Know how to distinguish between delirium and other diagnoses (dementia, depression)
- Identify risk factors for delirium and strategies for risk reduction
- Discuss management strategies, recognizing the limitations of current data

Definition

- "an acute disorder of attention and cognition" (de lir-ia "off the path")
- Standard definition not use until 1980 with publication of DSM III
- Other terms used include organic brain syndrome, metabolic encephalopathy, toxic psychosis, acute mental status change, exogenous psychosis, sundowning

Delirium Risk Factors

- Age
- Cognitive impairment
  - 25% delirious are demented
  - 40% demented in hospital delirious
- Male gender
- Severe illness
- Hip fracture
- Fever or hypothermia
- Hypotension
- Malnutrition
- High number of meds
- Sensory impairment
- Psychoactive medications
- Use of lines and restraints
- Metabolic disorders:
  - Azotemia
- Hypo- or hyperglycemia
  - Hypo- or hypernatremia
- Depression
- Alcoholism
- Pain

Differential Diagnosis

- CNS pathology
- Dementia, particularly frontal lobe
- Other Psychiatric disorders
  - Psychosis
- Depression: 41% misdiagnosed as depression Farrell Arch Intern Med 1995
  - Bipolar disorder
- Aconvulsive status epileptics
- Akathisia
- Overall, 32-67% missed or misdiagnosed

Diagnosis

- DSM-IV
  - A. Disturbance of consciousness with reduced ability to focus, sustain, or shift attention.
  - B. A change in cognition or the development of a perceptual disturbance that is not better accounted for by a pre-existing, established, or evolving dementia.
  - C. The disturbance develops over a short period of time and tends to fluctuate during the course of the day.
  - D. There is evidence from the history, PE, or lab that the disturbance is caused by the direct physiologic consequences of a general medical condition
CAM
(Confusion Assessment Method)
1. Acute change & fluctuation in mental status and behavior
   AND
2. Inattention
   AND EITHER
3. Disorganized thinking
   OR
4. Altered consciousness (not alert)

1990;113:941-948.

Diagnostic Tools

<table>
<thead>
<tr>
<th>Sensitivity</th>
<th>Specificity</th>
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</thead>
<tbody>
<tr>
<td>CAM*</td>
<td>.46-.92</td>
</tr>
<tr>
<td>Delirium Rating Scale*</td>
<td>.82-.94</td>
</tr>
<tr>
<td>Clock draw</td>
<td>.87</td>
</tr>
<tr>
<td>MMSE (23/24 cutoff)</td>
<td>.52-.87</td>
</tr>
<tr>
<td>Digit span test</td>
<td>.34</td>
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</tbody>
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*validated for delirium & capable of distinguishing delirium from dementia

Diagnosis

MMSE & Clock draw
- Not designed for delirium
- Useful at separating normal from abnormal
- Not specific for distinguishing delirium from dementia
- May be useful as change from baseline

Delirium versus Dementia

Delirium
- Rapid onset
- Primary defect in attention
- Fluctuates during the course of a day
- Visual hallucinations common
- Often cannot attend to MMSE or clock draw

Dementia
- Insidious onset
- Primary defect in short term memory
- Attention often normal
- Does not fluctuate during day
- Visual hallucinations less common
- Can attend to MMSE or clock draw, but cannot perform well

Medications and Delirium

- Sedative-hypnotics, especially benzos
- Narcotics, especially meperidine
- Anticholinergics
- Miscellaneous
  - Lidocaine - Propranolol
  - Amiodarone - Digoxin
  - H2 Blockers - Lithium
  - Steroids - Metoclopramide
  - NSAIDs - Levodopa
- Consider any drug a possible cause

Searching for the cause

- History and PE (consider possible urinary retention & PVR, impaction)
- Discontinue or substitute high risk meds
- Labs: CBC, lys, BUN, Cr, glucose, calcium, LFTs, UA, EKG
- And if those don’t tell you, consider:
  - Neuroimaging
  - CSF
  - Tens screen, thyroid, B12, drug levels, ammonia, cultures, ABG
  - EEG - in difficult cases to r/o occult seizures or psych disorders - 17% false neg, 22% false pos
Possible Benefit From:

- Preoperative psychiatric assessment followed by nursing reorientation (33% vs 14%)
- Postoperative reorientation (87% vs 6%)
- Preoperative education about delirium (78% vs. 69%)
- Pre and post operative psychiatric intervention (13% vs 0)

-- British J. Psych 1996 512-515
-- Can Med Ass J 1994 965-70
-- Nurs Res 1974 341-348
-- Res Nurs Health 1985 329-337

Intervention Protocol

- Cognition
- Orientation, activities
- Sleep
- Bedtime drink, massage, music, noise reduction
- Immobility
- Ambulation, exercises
- Vision
- Adaptive equipment
- Hearing
- Portable amplifiers, cerumen disimpaction
- Dehydration
- BUN, Volume repletion

Interventions that May Help

- Eliminate extra meds, reverse metabolic abnormalities, hydration, nutrition
- Geriatric consultation?
- Education of patients and family
- Re-orientation by staff, family, sitters, clocks, calendars
- Remove nonessential lines and tubes
- Quiet, uninterrupted sleep at night
- Stimulation (but not too much) during day
- Discharge home?

Drug therapy

- All drug therapy has side effects
- Use only if delirium interfering with therapy, or risking patient’s or others’ safety and welfare
- Almost no data on outcomes in drug treated versus non drug treated patients
- No good RCTs
- Approach based on case reports and expert opinion

Drug Therapy of Delirium

- One small RCT of neuroleptics vs. benzos in AIDS associated delirium/dementia found higher SE’s with benzos
- Improved outcomes with neuroleptics (N=67)
- Small sample, generalizability uncertain


Neuroleptics

- Considered agents of choice for most cases of delirium
- RCTs in agitation and dementia suggest benefit (NNT = 5)
- Side effects can include extrapyramidal SE’s, hypotension, sedation, akathisia
- Sedation effect before antipsychotic effect
- Haloperidol, droperidol
- Atypical: Respridone, olanzapine
Use of Haloperidol
- Lowest possible dose, e.g., .5-1.0 BID tapering down as delirium clears
- 0.5mg, repeat every 30 minutes until agitation is controlled
- Some advocate doubling of dose every 30 minutes until agitation is controlled (probably not wise in elderly?)
- Droperidol can be used IV - more rapid onset
  - Caution: sedation, hypotension, less anti-psychotic than haloperidol

Atypical neuroleptics
- Risperidone: for those with side effects from haloperidol or contraindications
  - Starting dose: .5mg HS or BID
- Olanzapine: agent of choice for patients with PD with hallucinations/delirium
  - Starting dose 2.5mg PO HS or BID

Benzodiazepines
- Should usually be avoided
- Agents of choice for EtOH, benzo withdrawal
- More rapid onset than neuroleptics
- Peak effects brief, sedation more common, can prolong delirium
- May be useful in terminal delirium associated with high dose narcotics and myoclonus
- Lorazepam .5-1.0 mg IV or PO (t1/2 15-20 hours)

Other agents
- ?Trazodone 25-100mg
- ?Physoptigmine (don’t try this)
  - reverses delirium due to anticholinergic activity
  - SE’s: bradycardia, asystole, bronchospasm, seizures
- ?Donepezil
- ?Mood stabilizers
- Narcotics and pain medications (empiric use in patients with dementia often helpful)

Prevention is the Best Medicine
- All evidence suggests that it is easier to PREVENT delirium than to TREAT delirium
- Prevention of delirium is least likely to be possible in the intensive care unit
- Treatment of delirium in the intensive care unit is particularly challenging and most likely to require medications, sitters, and/or physical restraints

Summary
- Delirium is common in older inpatients, associated with poor outcomes, and commonly missed or misdiagnosed
- Prevention is the best approach
- Management involves treating underlying causes, minimizing medications, supportive care, and avoidance of restraints when possible
- ICU delirium poses particular challenges
- Further research and RCT’s are needed