Delirium
Assessment and Management

Critical Concepts
Psychiatry
LSU School of Medicine
ALERT & AWAKE

DELIRIUM

STUPOR

COMA
Delirium

- Short term confusion and changes in cognition
- Symptoms fluctuate in intensity over a 24 hour period
- “waxing and waning”
- Subcategories based on cause:
  - Due to General Medical Condition
  - Substance Intoxication or Withdrawal
  - Due to Multiple Etiologies
  - Delirium Not Otherwise Specified

Descriptive studies of delirium date back 2500 years to the works of Hippocrates (460-366 BC)
DSM-IV-TR Diagnostic Criteria for Delirium due to General Medical Condition

A. Disturbance of consciousness (i.e., reduced clarity of awareness of the environment) with reduced ability to focus, sustain or shift attention.

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.
Delirium

• Also known as
  – “ICU Psychosis”
  – “Toxic Psychosis”
  – “Posttraumatic Amnesia”
  – “Acute Confusional State”

• Frequently not detected
  – Agitated, psychotic patient not representative of majority of patients with mixed or hypoactive symptom profile
Signs and Symptoms of Delirium

• Diffuse Cognitive Deficits
  – Attention
  – Orientation
  – Memory
  – Visuoconstructional ability
  – Executive functions

• Temporal Course
  – Acute onset
  – Fluctuating severity of symptoms
  – Usually reversible
  – Subclinical syndrome may precede and/or follow episode

• Psychosis
  – Perceptual disturbances (especially visual), illusions, metamorphopsias
  – Delusions (paranoid and poorly formed)
  – Thought disorder

• Sleep-wake Disturbance
  – Fragmented throughout 24 hour period
  – Reversal of normal cycle
  – Sleeplessness
Signs and Symptoms of Delirium

- **Psychomotor Behavior**
  - Hyperactive
  - Hypoactive
  - Mixed

- **Language Impairment**
  - Word-finding difficulty
  - Dysgraphia
  - Altered semantic content

- **Altered or Labile Affect**
  - Any mood can occur, usually incongruent to context
  - Anger and irritability common
  - Lability common
# Differential of Delirium

<table>
<thead>
<tr>
<th></th>
<th>Delirium</th>
<th>Dementia</th>
<th>Depression</th>
<th>Schizophrenia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset</strong></td>
<td>Acute</td>
<td>Insidious</td>
<td>Variable</td>
<td>Variable</td>
</tr>
<tr>
<td><strong>Course</strong></td>
<td>Fluctuating</td>
<td>Progressive</td>
<td>Diurnal Variation</td>
<td>Variable / Chronic</td>
</tr>
<tr>
<td><strong>Reversibility</strong></td>
<td>Usually</td>
<td>Not Usually</td>
<td>Usually</td>
<td>Not</td>
</tr>
<tr>
<td><strong>Level of Consciousness</strong></td>
<td>Impaired</td>
<td>Clear until late stages</td>
<td>Generally Unimpaired</td>
<td>Unimpaired</td>
</tr>
<tr>
<td><strong>Attention / Memory</strong></td>
<td>Inattention, poor memory</td>
<td>Poor memory</td>
<td>Decreased Attention</td>
<td>Decreased Attention</td>
</tr>
<tr>
<td><strong>Hallucinations</strong></td>
<td>Usually VH, Can TH, AH</td>
<td>Can have VH or AH</td>
<td>Can have AH</td>
<td>Usually AH</td>
</tr>
<tr>
<td><strong>Delusions</strong></td>
<td>Fleeting, Fragmented, Persecutory</td>
<td>Paranoid, often fixed</td>
<td>Complex, mood congruent</td>
<td>Frequent, Complex, Systematized</td>
</tr>
</tbody>
</table>
Delirium Epidemiology

• Can occur at any age

• Prevalence 5 - 44% in hospitalized patients

• 10 – 15% of elderly persons are delirious when admitted to a hospital
  – Another 10 – 40% are diagnosed with delirium during hospitalization

• 30% of ICU patients
Delirium Morbidity and Mortality

• Poor prognostic sign
• 3 – month mortality rate of patients with an episode of delirium: 23 – 33%
• 1 – year mortality rate up to 50%
• Elderly patients with delirium while hospitalized have 20 – 75% mortality rate during that hospitalization
Delirium Risk Factors

Vulnerability:
- Age
- Preexisting Cognitive Impairment
- Previous Delirium
- Increased Blood-Brain Permeability
- CNS Disorder

Environmental:
- Social Isolation
- Sensory Extremes
- Visual Deficit
- Hearing Deficit
- Immobility
- Novel Environment
- Stress

Drug:
- Polypharmacy
- Drug/ETOH Dep.
- Psychoactive Drugs
- Anticholinergics

Medical:
- Severity
- Burns
- HIV/AIDS
- Organ Insufficiency
- Infection (UTI)
- Hypoxemia
- Metabolic Disturbance
- Dehydration
- Low Albumin

Surgical:
- Perioperative
- Type of Surgery (Hip)
- Emergency Procedure
- Duration of Operation
Diagnosis

• Made at bedside
  – History
    • Need information about baseline mentation
  – Mental Status Examination
    • Formal Mini Mental Status Exam (MMSE) can be helpful but does not differentiate from dementia
  – “SAVEAHAART “
    • CAM ICU
  – EEG can be useful
    • Generalized slowing
    • Improvement in background rhythm parallels clinical improvement
Etiologies of Delirium

• Drug Intoxication
  – Alcohol
  – Sedative-hypnotic
  – Opiate
  – Psychostimulant
  – Hallucinogenic
  – Inhalants
  – Industrial poisons
  – OTC or prescribed

• Drug Withdrawal
  – Alcohol
  – Sedative-hypnotic
  – Opiate
  – Psychostimulant
  – Prescribed

• Traumatic Brain Injury
• Seizures

• Metabolic/Endocrine Disturbance
  – Volume depletion/overload
  – Acidosis/alkalosis
  – Hypoxia
  – Uremia
  – Anemia
  – Low B1, B6, B12, Folate
  – Elevated A, D
  – Hypo/hyperglycemia
  – Hypoalbuminemia
  – Bilirubinemia
  – Hypo/hypercalemia
  – Hypo/hypernatremia
  – Hypo/hyperthyroidism
  – Cushing’s syndrome
  – Addison’s disease
  – Hypopituitarism
  – Porphyria
Etiologies of Delirium

- Neoplastic disease
  - Intracranial primary, metastasis
  - Paraneoplastic (PLE)
- Intracranial Infection
  - Meningitis
  - Encephalitis
  - Neurosyphilis
  - HIV
- Systemic Infection
  - Sepsis
- Organ Insufficiency
  - Cardiac/pulmonary/hepatic/renal/pancreatic
- Other systemic
  - Heat stroke
  - Hypothermia
  - Electrocution
  - Burn
- Cerebrovascular
  - TIA
  - Subarachnoid/dural hemorrhage
  - CVA
  - Subdural hematoma
  - Cerebral edema
  - Hypertensive encephalopathy
  - Cerebral vasculitis
- Other CNS
  - Parkinson’s disease
  - Huntington’s disease
  - Multiple sclerosis
  - Hydrocephalus
  - Lupus cerebritis
Course of Delirium

- Symptoms last as long as underlying cause is present.
- After removal or treatment of causative factor, symptoms of delirium usually recede over 3 – 7 days.
- Older the patient and the longer delirious, the longer the delirium takes to resolve.
Treatment

• Treat underlying cause
• Restraints may be needed to avoid self harm, but try to avoid
• Use orienting techniques
  – Calendar, frequent reminders
  – Natural day/night lighting, nightlights
  – Family
Treatment

• Haloperidol (Haldol)
  – Neuroleptic most often chosen for delirium
  – p.o., I.M., or I.V.
    • I.V. route not FDA approved and with warning regarding QTc prolongation
    • I.V. and I.M. route twice as potent as p.o.
  – Reduces agitation, aids in cognition and psychotic symptoms
  – Watch for possible QTc prolongation
    • 28 deaths reported
  – Underlying cause must still be addressed
Treatment

- Haloperidol (Haldol)
  - Check EKG
  - QTc < 450 = OK
  - QTc : 450 – 500 = caution
  - QTc > 500 = use something else p.o. or I.M.
  - 2 mg IV Q8 hr and Q4 hr prn
    - Elderly: 0.5 mg or 1 mg
  - Dosages up 1200 mg in 24 hr given safely in literature
    - (don’t try to repeat)
  - 5 mg IM Q4 hr prn (often given with 50 mg benadryl and 2 mg ativan: want to avoid both in delirium)
Treatment

• Risperdal
  – 0.5 mg p.o. Q8 hr and Q4 prn
  – Like Haldol, has low anticholinergic activity
  – EPS

• Zyprexa
  – 5 mg p.o. QAM, 10 mg p.o QPM
    and 5 mg Q4 prn
  - Theoretical concern with anticholinergic activity
  - Possible dec WBC and plts, inc LFTs
  - Acute agitation: 10 mg IM Q2 hr (x2 in 24 hr) –
    - Don’t give with benzos (reports of death – more than IV Haldol)
Treatment

- **Seroquel**
  - 50 mg p.o. BID, 100 mg p.o. QHS and 50 mg Q4 hr prn
  - Sedating
  - Possible dec WBC and plts, inc LFTs
  - Advantage in pts with parkinsons or lewy body dementia
Treatment

• Geodon
  – Check EKG – wouldn’t use if >450
  – 40 mg p.o. Q8 hr or higher
    • Problem is inconsistent results on agitation
  – In acute agitation: 20 mg I.M. Q2 hr (x2)
    • Less sedation

• Abilify
  – Inconsistent in delirium

• Saphris, Fanapt, Latuda - new
Good Luck!