Building your Toolkit: Differentiating Depression from Delirium and Dementia

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Audio and Control Panel instruction

On the phone?
“Raise your hand” and we will open up your lines for you to ask your question to the group. (Right)

Using computer speakers?
Type into the question box and we will address your questions. (Left)
Objectives

Following the webinar, participants will be able to:

- Describe three symptoms that aid in differentiating depression from delirium and depression from dementia
- Describe what clinical assessment tools can be used to identify depression, delirium and dementia
- Describe two management principles for delirium and dementia
- Identify risk factors for suicide in older adults
Overview of Depression

• Depression and anxiety symptoms are a common response to loss and other stressors (e.g. grief reaction, normal bereavement, fear response)
• Depression is not inevitable with aging
• Predisposing factors:
  – Medical illness
  – Disability
• Major depressive disorder represents the classic condition in this group of disorders. It is characterized by discrete episodes of at least 2 weeks’ duration (although most episodes last considerably longer) involving clear-cut changes in affect, cognition, and neurovegetative functions and inter-episode remissions. A diagnosis based on a single episode is possible, although the disorder is a recurrent one in the majority of cases.

http://proxy.library.upenn.edu:2308/dsmLibrary.aspx
Etiology

• Genetic predisposition
  – family history
  – common comorbid conditions

• Psychological triggers
  – external events (stressors)
  – interpersonal relationships
### Depressive Symptoms Differ by Age

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Adult Presentation</th>
<th>Geriatric Presentation</th>
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</thead>
<tbody>
<tr>
<td><strong>Mood</strong></td>
<td>Depressed</td>
<td>Weary, hopeless, angry</td>
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<tr>
<td></td>
<td>Anhedonic</td>
<td>Anxious</td>
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<tr>
<td></td>
<td>Suicide thoughts</td>
<td>Death ideation</td>
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<tr>
<td><strong>Somatic</strong></td>
<td>↓↑ Sleep</td>
<td>↑ Pain</td>
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<tr>
<td></td>
<td>↓↑ Appetite</td>
<td>Somatic symptoms overlap with</td>
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<tr>
<td></td>
<td>↓↑ Psychomotor</td>
<td>effects of medications and comorbid</td>
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<tr>
<td></td>
<td>↓↑ Increased pain</td>
<td>disease</td>
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<tr>
<td><strong>Cognitive</strong></td>
<td>↓ Concentration</td>
<td>↓ Selective attention</td>
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<tr>
<td></td>
<td>Indecisiveness</td>
<td>↓ Working memory/retrieval</td>
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<td></td>
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<td>↓ New learning</td>
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<tr>
<td></td>
<td></td>
<td>↓ Processing speed</td>
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<tr>
<td></td>
<td></td>
<td>↓ Executive function</td>
</tr>
</tbody>
</table>

Gallo, 1997; Geiselmann and Bauer 2000; Devanand 1994; Mazure, 2002; Lezac 1994; Lavretsky and Kumar 2002.
Depression Cascade: Medical Complications, Disability, Poor Outcomes

- loss of appetite
- fatigue / apathy
- anxiety

- malnutrition & dehydration
- inactivity & bedrest
- rehab refusal

- failure to thrive
- deconditioning

- risk of mortality & institutional placement
Neurological Co-morbidity

• Depression common in neurodegenerative diseases / neurological disorders
  – Post-CVA
  – Alzheimer’s disease (AD)
  – Parkinson’s disease (PD) and dementia with Lewy bodies (DLB)
  – Huntington’s disease (HD)
Syndrome of Vascular Depression

- **Defined by:**
  - First onset of depression after 60 years of age
  - Presence of vascular disease (HTN, CAD, diabetes, CVA)

- **Associated with:**
  - Reduced depressive ideation
  - Increased psychomotor retardation
  - Cognitive dysfunction
    - Executive impairment
  - **MRI findings:**
    - Prefrontal and basal ganglia deep white matter hyperintensities

Screening

Clinical routines
- add items to self-report questionnaires
- observation
- direct questions
  - depression, anxiety
  - suicide
- collateral informants

Standardized instruments
- Patient Health Questionnaire-9
- Geriatric Depression Scale
- Beck Depression Inventory
History of Present Illness: CEASE SAAD

- Crying
- Eating
- Anxiety
- Sleep
- Energy

- Sex
- Anhedonia
- Agitation
- Depressed mood
Mental Status Examination

- Appearance and self-care
- Psychomotor behavior
- Variant presentations of mood and affect
  - Withdrawal
  - Weariness
  - Comorbid anxiety
- Thought content
  - Somatic preoccupations
  - Pain
  - Complaints regarding cognitive functioning
  - Psychosis
- Suicide and death ideation
Suicide in the Elderly

- Rate of suicide highest in the elderly
- Among the elderly:
  - 19.1/100,000 over age 65
  - 22.9/100,000 ages 75-84
- Depression most frequent mental disorder preceding suicide
- Physical illness most frequent stressor in suicides >80 years of age
Suicide Risk Factors

- Advanced age
- Single or widowed, isolated
- Chronic illness
- Disability
- Alcohol or drug abuse
- History of prior suicide attempt
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Antidepressants and Elderly Suicide

- SSRI initiation associated with increased suicide risk during 1st month compared with other antidepressants
  - Odds ratio = 4.8
  - Violent suicide distinctly more common with SSRIs
  - No disproportionate risk seen after 1st month
- Overall risk low
  - <1 in 3,000 (0.3%)
- Total 1,329 suicides
  - 73 on SSRI
  - 907 not treated at all, yet many were likely depressed
Treatment Modalities for Depression

- Pharmacotherapy
  - Antidepressant drugs
  - Anxiolytic drugs
- ECT
- Psychotherapy
  - Cognitive-Behavioral
  - Interpersonal
  - Problem-solving
General Principles

• Start low and go slow
• Monitor side effects carefully
• Adjust one medication at a time
• Achieve adequate dosage and duration
  – At least mid-therapeutic range for 6-8 weeks
  – Consider increasing dosage after 3 weeks if no or little response
FDA-Approved Antidepressants

- **Tricyclics (TCAs)**
  - Amitriptyline (Elavil)
  - Imipramine (Tofranil)
  - Desipramine (Norpramin)
  - Nortriptyline (Pamelor)

- **MAO Inhibitors**
  - Phenelzine (Nardil)
  - Tranylcypromine (Parnate)
  - Selegiline patch

- **SSRIs**
  - Fluoxetine (Prozac)
  - Sertraline (Zoloft)
  - Paroxetine (Paxil)
  - Fluvoxamine (Luvox)
  - Citalopram (Celexa)
  - Escitalopram (Lexapro)

- **Others**
  - Trazodone (Oleptro)
  - Buproprion (Wellbutrin)
  - Venlafaxine (Effexor)
  - Mirtazapine (Remeron)
  - Duloxetine (Cymbalta)
Selective Serotonin Reuptake Inhibitors (SSRIs)

- **Advantages:**
  - Minimal toxicity
  - Avoidance of autonomic side effects
  - Less sedation
  - Ease of administration (once daily dosaging)
  - Most now available in generic version

- **Disadvantages:**
  - Overstimulation / insomnia
  - Gastrointestinal symptoms
  - Appetite changes
  - Sexual dysfunction
  - Hyponatremia (SIADH)
  - Drug-drug interactions for some
SSRIs – Specific Agents

• Fluoxetine (10-40 mg qd)
  – Long half life and drug-drug interactions limit use in elderly
• Sertraline (25-200 mg qd)
  – Broad range of dosaging possible
• Paroxetine (10-40 mg qd)
  – Most anticholinergic effects of SSRIs
  – Approved for multiple anxiety disorders as well
• Citalopram (10-20 mg qd)
  – Recommended as first line agent in elderly
• Escitalopram (10-20 mg/qd)
  – S-enantiomer of citalopram
• Fluvoxamine
  – Only approved to treat OCD
Other First Line Agents

- Venlafaxine (37.5-300 mg qd)
  - May increase blood pressure
  - Increases 3 neurotransmitters at highest dosage
- Mirtazapine (15-45 mg qd)
  - Associated with sedation and weight gain
- Bupropion (75-300 mg qd)
  - Structurally related to amphetamines
  - May affect dopamine system
- Duloxetine (30-60 mg qd)
  - Similar to venlafaxine in neurotransmitter effects
Treatment Algorithms

- Almost no controlled research in elderly
- Switch antidepressants
  - Within vs. between class
- Add second antidepressant
  - Bupropion
- Augment antidepressant
  - Lithium
  - $T_3$
  - Buspirone
  - Atypical antipsychotics (caution with demented patients)
- 2nd line antidepressants
  - MAOIs, TCAs
Monitoring

Response to treatment (therapeutic effects)
- symptom reduction
- functional gains (ADLs, IADLs)
- role functioning
- reduced health care utilization

Tolerability of treatment (adverse effects)
- vital signs
- weight / nutritional markers
- urinary / bowel function
- sleep patterns
- gait stability
Suicidal ideation was associated with greater depressive severity

Conclusion: Bupropion SR plus escitalopram significantly more effective in reducing suicidal ideation when compared with escitalopram alone

Venlafaxine XR plus mirtazapine may pose a higher risk of suicide attempts

SR, sustained release; XR, extended release.
Maintenance Treatment

• Almost no controlled research looking at relapse prevention
• General principle for continuation treatment:
  – 1\textsuperscript{st} episode of depression – 6-12 months treatment
  – 2\textsuperscript{nd} episode – ?
  – 3\textsuperscript{rd} episode – lifelong treatment
• One study showing antidepressant + interpersonal psychotherapy (IPT) had lower depression relapse rate than other treatment combinations
Geriatric Case Study: Rose

- 80-year-old woman who lives with her daughter
- Brought in by her daughter for evaluation due to:
  - Tearfulness
  - Decreased interest in going out of the house for the past 4 months
  - Cessation of participation in cooking and cleaning
  - Loss of interest in other normal activities, even watching television
Case Study: Rose — History and Presentation

● Medical history
  – Obesity
  – Hyperlipidemia
  – Hypothyroidism
  – Hypertension
  – Osteoarthritis of the knees

● Psychological evaluations
  – PHQ-9 score = 17
  – GDS-15 score = 10
Case Study: Rose —Current Medications

- Simvastatin 20 mg/d
- Aspirin 81 mg/d
- Levothyroxine 150 µg/d
- Metoprolol 150 mg twice per day
- Acetaminophen 1,000 mg three times per day
Case Study: Rose — Acute-Phase Treatment

- Started on citalopram (SSRI) 10 mg/d
- Minimal response at 3 weeks
- Dosage increased to 20 mg/d
- After additional 4 weeks at higher dose:
  - PHQ-9 score = 10
  - GDS-15 score = 8
- Complains of continued lack of energy, insomnia, and weight loss

GDS, Geriatric Depression Scale; PHQ, Patient Health Questionnaire; SSRI, selective serotonin reuptake inhibitor.
Case Study: Rose — Acute-Phase Assessment

- Physical examination:
  - Heart rate, irregular
  - Extremities, fine resting tremor in upper extremities
- Lab findings:
  - CMP, WNL
  - CBC, WNL, except:
    - HGB, 10 g/dL
    - HCT, 30%
  - TSH, low, 0.05 mIU/L
  - Vitamin B₁₂, > 500 pg/mL
- Cognitive assessment results: SLUMS, score of 26 out of 30
- Alcohol screen: negative
Case Study: Rose — Findings

- **Pain**
  - Rates pain 4 out of 10 on most days, with acetaminophen

- **Test results**
  - ECG: atrial fibrillation, rate 56 bpm; no prolonged Q-T interval

- **Medication**
  - Simvastatin, levothyroxin, and metoprolol doses need adjusting

- **Interprofessional communication**
  - Communicate with primary care provider about mood and current medications
Case Study: Rose — Continuation-Phase Treatment

- Patient continuing on venlafaxine XR 75 mg twice per day
- Patient continuing CBT with social worker/therapist
- Improvement in MDD symptoms sustained
- Cognition improved: SLUMS score now 29/30

CBT, cognitive-behavioral therapy; MDD, major depressive disorder; SLUMS, St. Louis University Mental Status; XR, extended-release.
Questions?
Overview of Dementia

- A group of conditions that impact cognitive function and are progressive
- Incidence of dementia increases with age
- Diagnosis of specific type of dementia is currently based on clinical presentation, ruling out reversible causes and imaging.
- Confirmation of diagnosis is completed at Autopsy
DSM V Dementia of AD type

The development of multiple cognitive deficits such as manifested by both, Impaired memory, long or short-term, can't learn new information or can't recall information previously learned and is distinguished by:

- one (or more) of the following cognitive disturbances:
  - Aphasia (language disturbance).
  - Apraxia (impaired ability to carry out motor activities despite intact motor function).
  - Agnosia (failure to recognize or identify objects despite intact sensory function).
  - Disturbance in executive functioning (i.e., planning, organizing, sequencing, abstracting)

National Council for Behavioral Health
Mental Health First Aid
Geriatric Technical Assistance Center
DSM V Dementia of AD type

- The cognitive deficits above each cause significant impairment in social or occupational functioning and represent a significant decline from a previous level of functioning.
  - The decline in mental functioning begins gradually and worsens steadily.
- The cognitive deficits above are not due to any of the following:
  - Other central nervous system conditions that cause progressive deficits in memory and cognition (e.g., cerebrovascular disease, Parkinson's disease, Huntington's disease, subdural hematoma, normal-pressure hydrocephalus, brain tumor).
- Systemic conditions that are known to cause dementia (e.g., hypothyroidism, vitamin B-12 or folic acid deficiency, niacin deficiency, hypercalcemia, neurosyphilis, HIV infection).
Multiple Types/Causes yet Similar Course

- Usually a disease in older adults
- Dementia prior to age 65 is early onset dementia
- Slow
- Insidious
- Irreversible
- Progressive
Types of Dementias

- Alzheimer’s Dementia
- Lewey Body Dementia
- Frontotemporal Dementia
  - Primary Progressive Aphasia
  - Behavioral variant
- Vascular Dementia
- Creutzfeldt-Jakob Disease
- Dementia due to Huntington’s Disease
- Dementia due to Parkinson’s Disease
- Normal Pressure Hydrocephalous
- HIV related dementia
Cognitive Testing

Screening Tools
- Mini-COG
- SLUMS
- MoCA

Research Based tools
- Consortium to Establish Registry for Alzheimer’s Disease
- Clinical Dementia Rating Scale
- Neuropsychological Testing
Alzheimer’s Dementia

- U.S. Prevalence in 2011 was 1 in 8 people over age 65 have AD 5.2 mil.
- Suggested to rise to 15.4 million by the year 2050.
- Slightly more common in women 3.2 million
- Slow gradual progression
- Not a stair step decline
**Figure 1**: Proportion of People Aged 65 and Older with Alzheimer’s Disease and Other Dementias, by Race/Ethnicity, Washington Heights-Inwood Columbia Aging Project, 2006

<table>
<thead>
<tr>
<th>Age</th>
<th>White</th>
<th>African-American</th>
<th>Hispanic</th>
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<tbody>
<tr>
<td>65 to 74</td>
<td>2.9</td>
<td>9.1</td>
<td>7.5</td>
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<tr>
<td>75 to 84</td>
<td>10.9</td>
<td>19.9</td>
<td>27.9</td>
</tr>
<tr>
<td>85+</td>
<td>30.2</td>
<td>58.6</td>
<td>62.9</td>
</tr>
</tbody>
</table>
Changes in the Brain

- As the disease progresses, more areas of the brain are affected. Shown here, the dissected brain is greatly reduced in size.
Staging of Alzheimer’s

• **Stage 1:** No cognitive or functional decline
• **Stage 2:** Very Mild forgetfulness some work difficulties
• **Stage 3:** Mild cognitive impairment, concentration problems, some difficulty at work.
• **Stage 4:** Late confusional stage, increased denial of problems; withdrawal.
• **Stage 5:** Poor recall of recent events; help with proper clothing and bathing.
• **Stage 6:** More advanced memory problems; ADL assistance needed.
• **Stage 7:** Late dementia with loss of verbal abilities
Medication management of Dementia

- Cholinesterase inhibitors
  - Donepezil/Aricept
  - Galantamine/Razadyne
  - Rivastigmine/Exelon

- NMNDA Inhibitor
  - Mementine/Namenda
Lewey Body Dementia

- Not rare 1.3 million in the United States
- Dx is clinical by constellation of symptoms
- Lewy body proteins
  - Alpha synuclein proteins
Features of LBD

• Central Feature
  – Progressive dementia
  – Deficits in attention
  – Deficits in executive function are typical

• Core Features
  – Fluctuating cognition
  – Variations in attention and alertness
  – Recurrent complex visual hallucinations
  – Spontaneous features of parkinsons
Features of DLB

- **Suggestive features**
  - REM sleep behavior disorder
  - Severe sensitivity to neuroleptics in 50% of LBD cases
  - Low dopamine transports uptake in the brains basal ganglia as seen on SPECT, & PET imaging scans

- **Supportive Features**
  - Repeated falls and syncope
  - Transient unexplained loss of consciousness
  - Autonomic dysfunction
  - Hallucinations of other modalities
  - Visual spatial abnormalities
  - Other psychiatric disturbances
Vascular Dementia

- Classic Stair Step Decline: Decline, plateau, decline plateau etc.
- Focal Neurological Signs & Symptoms are present
- Other signs of vascular disease: HTN, CAD, PVD
- Cat Scan findings consistent with neurological findings.
Management of Vascular Dementia

• Primary Prevention
  – Smoking Cessation
  – Low fat diet
  – Exercise
  – Rest
  – Immunizations
  – Adequate Hydration
  – Moderate Alcohol intake

• Secondary Prevention
  – Blood Pressure Control
  – Anticoagulation for Afib
Frontotemporal Dementia (Pick's Disease)

- Diverse group of uncommon disorders affecting primarily the frontal and temporal lobes
- Mutations of genes have been linked to subtypes of microscopic Pick’s Bodies, abnormal protein filled structures
Primary Progressive Aphasia

• Increasing difficulty thinking of words
  – Substitute wrong word
  – Mistakes in pronunciation
  – Talk around word

• Problems reading and writing
  – Difficulty with check writing
  – Difficulty following written directions

• Difficulty understanding speech
  – Trouble following conversation despite normal hearing
Behavior Management

- Need-Driven Behaviors
  - Wandering
  - Repetitive Questioning
  - Agitation
  - Restlessness
  - Combativeness
  - Sexually inappropriate Behavior
  - Incontinence
Perceptions

• Based on previous experience
• Need to distinguish between intention & behavior
• Behavior $\neq$ Problem to be controlled
• Behavior = Communication of need
• Change in perception requires ‘decentering’ from how one ordinarily ‘sees’ and accepting the supremacy of the patient’s perceptions
Behavioral Assessment: Reframing

• Reframing behavior is essential for designing appropriate interventions
  – Suspend judgment
  – Avoid ‘labeling’
  – Collect clues
  – Behavioral assessment
# Behavioral Logs

**LIFE**

![Logo](https://via.placeholder.com/150)

> **Behavior Monitoring Log**

**Member:** __________________________  →  →  →  →  **Date:** ________________

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity going on at time of behavior</th>
<th>What happened right before behavior</th>
<th>What was the behavior</th>
<th>What was the result of the behavior</th>
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<tbody>
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Consider unmet needs: Physical, Psychological, Physical Environment, Social Interaction

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**CENTER**
Needs-Driven Dementia- Compromised Behavior Model: Proximal Factors

- **Physiologocial Needs**
  - Nutrition
  - Hydration
  - Elimination
  - Oxygenation
  - Comfort
  - Rest

- **Social Environmental**
  - Staff mix
  - Staff Stability
  - Ward Ambiance
  - Presence of others

- **Psycho-Social Needs**
  - Affect
  - Assistance matches ability
  - Diversional activities

- **Physical Environment**
  - Light, sound, temperature
Medication Management of Behavior

- OBRA Regulations has limited use of medications
- HCFA recently provided a list of medications to be avoided in the elderly.
- Go low, Go Slow, Frequent Med reduction attempts
Dopamine & Serotonin Pathways

Dopamine Pathways
- Frontal cortex
- Nucleus accumbens
- VTA
- Hippocampus

Functions
- Reward (motivation)
- Pleasure, euphoria
- Motor function (fine tuning)
- Compulsion
- Perseveration

Serotonin Pathways
- Striatum
- Substantia nigra
- Raphe nuclei

Functions
- Mood
- Memory processing
- Sleep
- Cognition
Medications to Manage Behaviors when Nursing Measures Fail

- **Serotonin Reuptake inhibitors** (off label)
  - Celexa for behavior management *Citad Study* (10-20mg)

- **Antipsychotics** (off label)
  - Abilify (10-15 mg)
  - Risperidone (0.25-2 mg)
  - Olanzapine (5-7.5mg)
  - Quentiapine (25-200mg)
  - Haloperidol (0.5 -2 mg)

- **Non tricyclics**
  - Trazadone (25-200mg)
  - Buspiron (10 to 15 tid)

- **Sexually inappropriate behavior**
  - SSRIs
  - Beta Blocker
  - Provera
  - Cholinesterase inhibitors

- **Terminal behaviors**
  - Benzodiazepines
  - Lorazepam
  - Short-term
Risks Associated with Antipsychotics

- Pneumonia
- Cardiovascular risks
  - Prolonged QT interval, ventricular tachycardia (especially if given IV)
- Neuroleptic Malignant Syndrome
- Death
  - Risk of death in those taking antipsychotics vs placebo 4.5% vs. 2.6%
## Pain Assessment & Intervention

Miller et al 2005, Alz Care Quarterly.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Know elder</td>
<td>Remove cause of pain</td>
</tr>
<tr>
<td>Multifaceted ongoing process</td>
<td>Scheduled doses</td>
</tr>
<tr>
<td>Know pain history</td>
<td>Constipation does not prevent morphine use</td>
</tr>
<tr>
<td>Use words like hurt or discomfort</td>
<td>IDGT approach important for meds dosing/titration</td>
</tr>
<tr>
<td>Get info from DCS, families</td>
<td>Rxg agitation with psychotropic meds confounds Rx for pain</td>
</tr>
</tbody>
</table>
Dementia Care Planning

• Advanced directives
• Connect with Alzheimer’s Association
• Safe Return or medic alert bracelet
• Discuss delirium and depression
• Discuss social engagement for individual with dementia and caregiver
• Encourage to ask for help
• Discuss the possibility of physical or verbal aggression as disease progresses. Do not suffer in silence.
Questions
Overview of Delirium

• The abrupt (hours to days) onset of a cluster of global, transient changes constituting disturbances in attention, cognition, psychomotor activity, level of consciousness, and/or sleep-wake cycle
• More than 7 million hospitalized older adults suffer from delirium each year 29-64% incidence in hospitalized older adults
• Two major forms hypoactive and hyperactive
• Higher risk of death and often multifactorial
• A higher probability of developing dementia at 48% following delirium episode (63% vs 8%)

www.american-delirium-society.org
Delirium: Background

- Diagnosis of delirium is highly clinical and dependent upon clinician's level of expertise, systematic screening & careful clinical observations (Wong et al. 2010)
- Delirium is a cardinal sign of a geropsychiatric emergency and must be promptly identified and addressed with biopsychosocial and environmental interventions.
- Progression to stupor and/or coma, seizures, and death is possible.
- Early recognition of delirium followed by rapid management of underlying medical and environmental factors decreases the severity and can lead to improved outcomes. (Tullman, Mion, Fletcher & Foreman, 2008)
Cognitive Trajectories after Postoperative Delirium

Saczynski, Marcantonio, Quach, Fong, Gross, Inouye & Jones (2012)

C Sensitivity Analysis with Duration of Delirium

Estimated Score

Before Surgery

Days after Surgery

No delirium

<3 Days delirium

≥3 Days delirium

NEJM 2012: 367:30-9
Delirium: Clinical Presentation

Clinical subtype

- Hyperactive
  - Increased psychomotor activity, such as rapid speech, irritability, and restlessness

- Hypoactive
  - Lethargy
  - Slowed speech
  - Decreased alertness
  - Apathy

- Mixed
  - Shift between hyperactive and hypoactive states
# The Richmond Agitation and Sedation Scale: The RASS


<table>
<thead>
<tr>
<th>Score</th>
<th>Term</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>+4</td>
<td>Combative</td>
<td>Overtly combative, immediate danger to staff</td>
</tr>
<tr>
<td>+3</td>
<td>Very Agitated</td>
<td>Pulls or removes tubes or catheters; aggressive</td>
</tr>
<tr>
<td>+2</td>
<td>Agitated</td>
<td>Frequent non-purposeful movement, fights ventilator</td>
</tr>
<tr>
<td>+1</td>
<td>Restless</td>
<td>Anxious but movements not aggressive vigorous</td>
</tr>
<tr>
<td>0</td>
<td>Alert &amp; Calm</td>
<td></td>
</tr>
<tr>
<td>-1</td>
<td>Drowsy</td>
<td>Not fully alert, but has sustained awakening to voice</td>
</tr>
<tr>
<td>-2</td>
<td>Light Sedation</td>
<td>Briefly awakens with eye contact to voice</td>
</tr>
<tr>
<td>-3</td>
<td>Moderate sedation</td>
<td>Movement or eye opening to voice (no eye contact)</td>
</tr>
<tr>
<td>-4</td>
<td>Deep sedation</td>
<td>No response to voice, but movement or eye opening to physical stimulation</td>
</tr>
<tr>
<td>-5</td>
<td>Unarrousable</td>
<td>No response to voice or physical stimulation</td>
</tr>
</tbody>
</table>

If RASS is above -4 (-3 to +4) complete a CAM
### Advanced Old Age
- Comorbid illness

### Delirium
- Depression
- Sensory impairment
- Electrolyte imbalance and dehydration
- Infection
- Pain
- Previous episodes of delirium
- Alcohol Abuse

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**Inouye & Charpentier, 1996; Inouye 2006; Voyer et al. 2010;**
Delirium: 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

Irving, Fick, Foreman, 2006; Tune et al., 2003; Young & Inouye, 2007
Prevention of Delirium in Older Adults

- Early identification & modification of predisposing factors
- Early recognition & treatment of cognitive impairment
- Rapid identification & treatment of acute illness
- Assessment & appropriate management of pain

- Maintenance of normal sleep-wake cycle
- Avoidance of deliriogenic medications & polypharmacy
- Assurance of adequate hydration & nutrition
• Enhancement of sensory status by use of aids & appropriate levels of light & sound
• Enhancement of cognitive reserve
• Provision for family presence

• Avoidance of urinary catheterization
• Avoidance of physical restraint use
• Assessment & management of drug and alcohol withdrawal
Is Delirium the same as Dementia?

Although there are similarities between dementia and delirium, it is possible to differentiate between the two.

Common Error:

→ Misdiagnosing delirium as dementia

DSM-IV Criteria
Can be helpful in distinguishing dementia from delirium.

- Consciousness
- Onset
- Fluctuating course
- Attention
Differentiating Delirium from Dementia & Depression

• Chronic cognitive impairment seen in dementia typically:
  – Occurs gradually over time
  – Persists greater than one month
  – Is irreversible
• Most older adults with dementia are alert and able to maintain attention in the early stages of dementia
• Depression may also present acutely with deficits in ability to sustain attention.
• Depression may present similar to hypo or hyper active delirium; therefore, it is important to screen for depression in older adults who present with a mixed picture.
Delirium: Differential Diagnosis

- **Functional psychosis**
  - Acute functional psychosis can resemble delirium
  - Onset at an earlier age
  - Most older patients with functional psychosis have a history of psychiatric illness
  - Hallucinations tend to be auditory
  - Delusions are more elaborate than those associated with delirium
  - Dementia with Lewy Bodies includes fluctuating cognition and visual hallucinations
  - Consultation with a psychiatrist or a neurologist may be necessary in difficult cases
Confusion Assessment Method

Feature 1: Acute onset of mental status changes or fluctuating course.
   And
Feature 2: Inattention
   And Either
Feature 3: Disorganized Thinking
   OR
Feature 4: Altered Level of Consciousness

Inouye, 1990
The CAM Diagnostic Algorithm

- Can be accurately administered by individuals without formal psychiatric training
- Based on the Diagnostic and Statistical Manual of Mental Disorders-TR criteria for delirium
- Captures cardinal elements of delirium & incorporates specific observations relevant to each
- Patients are identified as positive for delirium using the CAM if 3 out of 4 features are present: acute onset and fluctuating course* and inattention* with either disorganized thinking or altered level of consciousness

*denotes required features
DELIRIUM PS

- D rugs
- Eyes and ears
- Low oxygen states
- Infections
- Retention (urine or stool)
- Ictal states
- Underhydration/nutrition
- Metabolic
- Pain
- Subdural
Delirium: General Management

- Multi-component interventions are most effective
- Prompt recognition & treatment of underlying cause
- Creation of a maximum supportive environment
- Immediate medical treatment as necessary
- Discontinuation or reduced doses of medications thought to be deliriogenic
- Use of environmental interventions such as a delirium room

Flaherty et al., 2010; Givens et al., 2009; Inouye, 2006; Milisen et al., 2005
Medication Management of Delirium

- Remove offending agents
- Antipsychotics
  - Haloperidol
  - Risperidol
  - Quetiapine
  - Olanzapine
  - Ziprasidone
- Benzodiazepines
  - Lorazepam
  - Diazepam
  - Alprazolam
Delirium: Medication Management

Use medications when:

- behaviors associated with psychotic thinking and perceptual disturbances (e.g., hallucinations) pose a safety risk or are distressing to the individual.
  - delirium interferes with needed medical therapies
  - behavioral interventions fail

**Do Not** use medications as a substitute for detection, correction, or elimination of underlying causes of delirium

Use low doses of medications over the shortest possible time period
Summary of Management of Delirium

• Multifactorial
• Prevention
• Early Recognition
• Identify and treat underlying cause (s)
• Reduce risk factors
• Manage Behaviors
• Recognize when terminal sign

• Multidisciplinary
• Inouye, 2006
• Levkoff et al., 1997
• Neelon et al., 1997
• Fisk & Mion, 2009
• Foreman, 1999
• Kolonowski et al., 2010
• Tullman et al. 2008
• Voyer et al., 2010
The Three D’s

<table>
<thead>
<tr>
<th></th>
<th>Delirium</th>
<th>Depression</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Onset</strong></td>
<td>Abrupt</td>
<td>Recent</td>
<td>Insidious</td>
</tr>
<tr>
<td><strong>Duration</strong></td>
<td>Hrs/Wks</td>
<td>Variable</td>
<td>Months/Yrs</td>
</tr>
<tr>
<td><strong>Alertness</strong></td>
<td>Fluctuates</td>
<td>Won’t Talk</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Orientation</strong></td>
<td>Variable</td>
<td>Don’t Know</td>
<td>Near Miss</td>
</tr>
<tr>
<td><strong>Affect</strong></td>
<td>Variable</td>
<td>Flat</td>
<td>Labile</td>
</tr>
</tbody>
</table>

Questions

Thank You!