Dementia, delirium, and depression in older adults

Differentiating the 3 D’s

Olivia Taylor, PMHNP-BC

Objectives

- Identify importance of recognizing symptoms in common mental disorders seen in older adults.
- Differentiate between depression, dementia, and delirium.
- Compare and contrast features of depression, dementia, and delirium.
- Discuss evaluation and assessment tools.

Why is it important to know the differences between dementia, delirium, and depression?

To be able to refer to appropriate clinicians, teams, or services for further assessment, diagnosis and treatment.
IMPORTANT:
What is patient’s baseline? What is usual/normal for this person?
We need to know this to be able to recognize key risk factors.
Obtain from caregivers, family members, etc.

Delirium
• A syndrome involving acute, fluctuating course and disturbances of:
  ▫ Consciousness
  ▫ Attention
  ▫ Orientation
  ▫ Memory
  ▫ Thought
  ▫ Perception (illusions, hallucinations)
  ▫ Behavior
• Occurs in up to 50% of older hospital patients
• Many have pre-existing dementia
  ▫ Dementia is the strongest risk factor for delirium among older patients.

Delirium: Etiology
• Almost always from identifiable physiologic, metabolic, or cerebral disturbance, disease, or drug intoxication/withdrawal.
• Most common causes (next slide)
### Most Common Causes of Delirium

<table>
<thead>
<tr>
<th>Common causes</th>
<th>Miscellaneous causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Hypoxia</td>
<td>✓ Sensory deprivation</td>
</tr>
<tr>
<td>✓ Hypoglycemia</td>
<td>✓ Sleep deprivation</td>
</tr>
<tr>
<td>✓ Hyperthermia</td>
<td>✓ Fecal impaction</td>
</tr>
<tr>
<td>✓ Anticholinergic delirium</td>
<td>✓ Urinary retention</td>
</tr>
<tr>
<td>✓ Alcohol or sedative withdrawal</td>
<td>✓ Postictal state</td>
</tr>
<tr>
<td>✓ Infections</td>
<td>✓ Change of environment</td>
</tr>
<tr>
<td>✓ Meningitis</td>
<td>✓ Medications</td>
</tr>
<tr>
<td>✓ Encephalitis</td>
<td></td>
</tr>
<tr>
<td>✓ HIV-related brain infections</td>
<td></td>
</tr>
<tr>
<td>✓ Septicemia</td>
<td></td>
</tr>
<tr>
<td>✓ Pneumonia</td>
<td></td>
</tr>
<tr>
<td>✓ Urinary tract infections</td>
<td></td>
</tr>
<tr>
<td>✓ Structural lesions of the brain</td>
<td></td>
</tr>
</tbody>
</table>

### Most Common Causes of Delirium

<table>
<thead>
<tr>
<th>Common causes</th>
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</tr>
</thead>
<tbody>
<tr>
<td>✓ Metabolic abnormalities</td>
<td>✓ Hypoperfusion states</td>
</tr>
<tr>
<td>✓ F/E abnormalities</td>
<td>✓ Congestive heart failure</td>
</tr>
<tr>
<td>✓ Hypoglycemia</td>
<td>✓ Cardiac arrhythmias</td>
</tr>
<tr>
<td>✓ Hepatic or renal failure</td>
<td>✓ Anemias</td>
</tr>
<tr>
<td>✓ Vitamin deficiency states</td>
<td></td>
</tr>
<tr>
<td>✓ Thyroid/parathyroid</td>
<td></td>
</tr>
</tbody>
</table>

### Most Common Causes of Delirium

<table>
<thead>
<tr>
<th>Surgery</th>
<th>Common causes</th>
</tr>
</thead>
<tbody>
<tr>
<td>✓ Preoperative</td>
<td>✓ Hypoxia</td>
</tr>
<tr>
<td>✓ Dementia</td>
<td>✓ Hypotension</td>
</tr>
<tr>
<td>✓ Polypharmacy</td>
<td>✓ Drug withdrawal</td>
</tr>
<tr>
<td>✓ Fluid and electrolyte imbalance</td>
<td></td>
</tr>
<tr>
<td>✓ Intraoperative</td>
<td>✓ Anticholinergics (atropine)</td>
</tr>
<tr>
<td>✓ Medication</td>
<td></td>
</tr>
<tr>
<td>✓ Long-acting benzodiazepines</td>
<td></td>
</tr>
<tr>
<td>✓ Postoperative</td>
<td></td>
</tr>
<tr>
<td>✓ Hypoxia</td>
<td></td>
</tr>
<tr>
<td>✓ Hypotension</td>
<td></td>
</tr>
<tr>
<td>✓ Drug withdrawal</td>
<td></td>
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</tbody>
</table>
Risk Factors for Developing Delirium

- Use of physical restraints
- Malnutrition
- Use of a bladder catheter
- Use of 3 or more medications
- Dysphoric mood and hopelessness
- Dementia

Delirium, con’t

- Mortality rates for those with delirium in the hospital is twice that of patients with similar medical conditions without delirium.
  - Rises as high as 14% within 1 month of diagnosis
- Occurs in >20% of hospitalizations annually
- The most common hospital-related complication in the US.
- Despite its frequency, delirium remains frequently under-recognized
  - Likely R/T fluctuating nature of symptoms
  - Overall under-appreciation of its significance by healthcare providers.
- Associated with elevated risks for functional and cognitive decline, poor rehabilitation potential, institutionalization, and rehospitalization.

Delirium, con’t

- Delirium is generally considered reversible.
  - Recovery likely if underlying factor is promptly removed or corrected.
- Research suggests symptoms can last for weeks to months following onset.
- Persistent delirium has been found to be frequent in older hospitalized patients, and associated with adverse outcomes.
  - ↑ cognitive impairment
  - ↑ functional disability
  - ↑ LOS
  - ↑ rates of institutionalization
  - ↑ rates of death
**Delirium**

- **Prevalence:**
  - **Community**
    - 1-2%
    - Increases to 14% for patients age >85 years
  - **Hospitalized**
    - 14-24% in the ER
    - 15-53% for postoperative patients
    - 70-87% for intensive care patients
    - Especially among mechanically ventilated patients
  - Associated with ↑ LOS and ↑ mortality
- **Common in LTC settings**
  - Often leads to hospital admission

**3 main types of delirium**

1. **Hyperactive delirium**
   - Heightened arousal, restlessness, agitation, delusions, and/or aggressive behavior.

2. **Hypoactive delirium**
   - Sleepiness, quieting of symptoms, and/or disinterested behavior

3. **Mixed delirium**
   - Alternating hyperactive and hypoactive states

**What you may see**

<table>
<thead>
<tr>
<th>General Appearance</th>
<th>Speech</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Disturbance of psychomotor behavior</td>
<td>- Less coherent and more difficult to understand (as delirium worsens)</td>
</tr>
<tr>
<td>- Restless</td>
<td>- Persevere on a single topic or detail</td>
</tr>
<tr>
<td>- Hyperactive</td>
<td>- May ramble and be difficult to follow</td>
</tr>
<tr>
<td>- Frequently picking at bedclothes</td>
<td>- Pressured speech that is rapid, forced, and louder than normal</td>
</tr>
<tr>
<td>- Sudden, uncoordinated attempts to get out of bed</td>
<td>- May call out or scream (especially at night)</td>
</tr>
<tr>
<td>- May have slowed motor behavior</td>
<td>- Appearing sluggish</td>
</tr>
<tr>
<td>- Appearing sluggish</td>
<td>- Lethargic with little movement</td>
</tr>
</tbody>
</table>
What you may see

Sensorium and Intellectual Processes

Thought Process & Content

- It is difficult for staff to assess these changes accurately and thoroughly
  - Marked inability to sustain attention
  - Thoughts are unrelated to situation
  - Speech is illogical and difficult to understand
- Disorganized and make no sense
- Thoughts may be fragmented (disjointed and incomplete)
- May experience delusions (believing their altered sensory perceptions are real)

- *altered level of consciousness
  - Fluctuates throughout day
- Usually oriented to person
- Frequently disoriented to time and place
- Decreased awareness or environment or situation
  - May misinterpret stimuli such as background or the room
- Noises, people, or sensory misperceptions easily distract them
- Impaired recent and immediate memory
- May have to ask questions or provide directions repeatedly
  - Still may be unable to do what is requested
- Frequently experience misinterpretations, illusions and hallucinations
  - Based on actual stimuli in environment
  - Door slam = gunshot
  - Nurse reach for IV bag = nurse is going to hit them

Common illusions (examples)

- Mistaking IV tubing or electrical cord for a snake
- Mistaking the nurse for a family member

Hallucinations

- Most often visual
- “see” things (no stimulus in reality)
  - Bugs on the wall
- Some patients are aware they are experiencing sensory misperceptions
- Others actually believe their misinterpretations are correct and cannot be convinced otherwise
What you may see

Sensorium/Intellectual

- Examples of common illusions
  - IV tubing or electrical cord = snake

Speech

- Less coherent and more difficult to understand (as delirium worsens)
- Perseverate on a single topic or detail
- May ramble and be difficult to follow
- Pressured speech that is rapid, forced, and louder than normal
- May call out or scream (especially at night)

Delirium diagnosis

- The Diagnostic and Statistical Manual of Mental Disorders (DSM-5) diagnostic criteria:
  - Disturbance in attention and awareness
  - Change in cognition that is not better accounted for by a preexisting, established, or evolving dementia
  - Disturbance develops over a short period (usually hours to days) and tends to fluctuate during the course of the day
  - There is evidence from the history, physical examination, or laboratory findings that the disturbance is caused by a direct physiologic consequence of a general medical condition, an intoxicating substance, medication use, or more than one cause.

- No laboratory test to diagnose it
- Common tool for screening and diagnosis:
  - Confusion Assessment Method (CAM)

What can I do to help identify delirium?

- Know how to use facility specific screening tool.
- Understanding of diagnostic criteria.
- Knowledge of patient’s baseline mental status is imperative.
- Gaps in medical record make it more difficult and can delay timely diagnosis
  - No formal assessments on the hallmarks of delirium (attention span and fluctuation)
  - Providers depend on nursing notes/social work notes to identify the fluctuating course
### Differentiating Features of Delirium and Dementia

<table>
<thead>
<tr>
<th>Features</th>
<th>Delirium</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Onset</td>
<td>Acute</td>
<td>Insidious</td>
</tr>
<tr>
<td>Course</td>
<td>Fluctuating</td>
<td>Progressive</td>
</tr>
<tr>
<td>Duration</td>
<td>Days to weeks</td>
<td>Months to years</td>
</tr>
<tr>
<td>Consciousness</td>
<td>Altered</td>
<td>Clear</td>
</tr>
<tr>
<td>Attention</td>
<td>Impaired</td>
<td>Normal, except in severe dementia</td>
</tr>
<tr>
<td>Psychomotor changes</td>
<td>↑ or ↓</td>
<td>Often normal</td>
</tr>
<tr>
<td>Reversibility</td>
<td>Usually</td>
<td>Rarely</td>
</tr>
</tbody>
</table>

### Confusion Assessment Method (CAM)

![CAM Image]

**IMPORTANT:**
Prevalence of delirium in LTC may be increasing as a result of the pressure to reduce the length of stay in a hospital.
Key Points

- Delirium is a condition that **comes on quickly** (within hours or days)

Dementia

- Umbrella term for several diseases that create **irreversible** changes in the brain that affect:
  - learning
  - memory
  - mood
  - behavior

Dementia

- “Dementia” is a syndrome, describes symptoms that occur when the brain is affected by certain diseases or conditions.
  - Some are potentially reversible
  - Develops gradually
  - Early warning signs of a decline in memory, thinking and orientation.

**IMPORTANT!**
The symptoms and progression of dementia can vary among individuals!
Diagnostic Approach

• Medical History:
  • Clinical interview with older adult and at least one additional informant.
  • Gather information about
    • Onset, course and nature of memory and other cognitive impairments
    • Any associated behavioral, medical, or psychological issues, including comorbid medical conditions, alcohol and other substance use, vision and hearing problems, and depression
    • Ask about recent illnesses, falls, head injury, prescription and over-the-counter medications, unintentional weight loss, and family history of dementia.

Diagnostic Approach, con’t

• Cognitive and Mental Status Testing
  • Use validated assessment instruments that measure multiple cognitive domains
    • Montreal Cognitive Assessment (MoCA)
    • Saint Louis University Mental Status (SLUMS) Examination
    • Mini-Mental State Examination (MMSE)
  • Test for delirium and depression
    • Confusion Assessment Method (CAM)
    • Patient Health Questionaire–9 (PHQ–9)
    • Geriatric Depression Scale (GDS)
Geriatric Depression Scale (GDS)

- 15 (short) or 30 (long) questions
- Yes/No format
  - 0-4 (Normal)
  - 5-8 (Mild)
  - 9-11 (Moderate)
  - 12-15 (Severe)
- Short form is more easily used by physically ill and mild to moderately demented patients who have short attention spans and/or feel easily fatigued.

Diagnostic Approach, con’t

- Functional Assessment
  - Ask the older adult and a family member/informant about the older adult’s daily functioning.
  - Commonly used instruments:
    - The Katz Index of Independence in Activities of Daily Living (ADL)
    - Instrumental Activities of Daily Living (IADL)
    - Functional Activities Questionnaire (FAQ)
  - A diagnosis of dementia requires impairment in functioning that is sufficient to interfere with performance of daily activities.
| 1. Escaping & being nearly shot | A lot | Improved | Not much change | A lot | Much |
| 2. Being telling things that have happened recently | A lot | Improved | Not much change | A lot | Much |
| 3. Handling interactions with people | A lot | Improved | Not much change | A lot | Much |
| 4. Being told to move by someone with authority | A lot | Improved | Not much change | A lot | Much |
| 5. Being told to stop by someone with authority | A lot | Improved | Not much change | A lot | Much |
| 6. Feeling discouraged by someone | A lot | Improved | Not much change | A lot | Much |
| 7. Feeling discouraged by someone who you look up to | A lot | Improved | Not much change | A lot | Much |
| 8. Having to do more than you're comfortable with | A lot | Improved | Not much change | A lot | Much |

| 9. Learning to work while being told what to do | A lot | Improved | Not much change | A lot | Much |

| 10. Learning to work without being told what to do | A lot | Improved | Not much change | A lot | Much |

| 12. Working in a group with others | A lot | Improved | Not much change | A lot | Much |

| 11. Working with others | A lot | Improved | Not much change | A lot | Much |

| 13. Working individually | A lot | Improved | Not much change | A lot | Much |

| 14. Working on a team with others | A lot | Improved | Not much change | A lot | Much |

| 15. Working on a team with others | A lot | Improved | Not much change | A lot | Much |

| 16. Working on a team with others | A lot | Improved | Not much change | A lot | Much |

| 17. Learning new things | A lot | Improved | Not much change | A lot | Much |

| 18. Learning new things | A lot | Improved | Not much change | A lot | Much |

| 19. Learning new things | A lot | Improved | Not much change | A lot | Much |

| 20. Learning new things | A lot | Improved | Not much change | A lot | Much |
Diagnostic Approach, con’t

• **Physical and Neurological Examination**
  - Assesses walking, gait disturbances, balance, coordination, speech and language impairment, vision, hearing, focal weakness, extrapyramidal signs, rigidity, tremor, blood pressure, heart and other vascular functions that affect blood flow to the brain.

• **Neuropsychological Testing**
  - Helpful in diagnosing mild and very early stage dementia and evaluating atypical presentations.
  - Can provide comprehensive, objective information about which cognitive functions are affected and establish a baseline for future re-evaluations.

Diagnostic Approach, con’t

• **Laboratory Tests**
  - Complete blood count
  - Serum B12
  - Serum calcium
  - Folate
  - Glucose
  - Electrolytes
  - Thyroid function
  - Liver and renal function

Diagnostic Approach, con’t

• **Neuroimaging**
  - **Recommendations vary**
  - CT and MRI scans may be included
### Common Causes of Dementia

<table>
<thead>
<tr>
<th>Cause</th>
<th>Characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alzheimer's disease</td>
<td>• Most common cause of dementia</td>
</tr>
<tr>
<td></td>
<td>• Accounts for est. 60 to 80 percent of cases.</td>
</tr>
<tr>
<td></td>
<td>• Difficulty remembering recent conversations, names/events, apathy and depression (often early symptoms)</td>
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<tr>
<td></td>
<td>Slowly progressive brain disease that begins many years before symptoms emerge.</td>
</tr>
<tr>
<td>Cerebrovascular disease/Vascular dementia</td>
<td>• 5 to 10 percent of individuals with dementia show evidence of vascular dementia alone.</td>
</tr>
<tr>
<td></td>
<td>• It is more common as a mixed pathology, with most cases showing the brain changes of cerebrovascular disease + Alzheimer's disease.</td>
</tr>
<tr>
<td></td>
<td>• Early symptoms: impaired judgment or impaired ability to make decisions, plan or organize. In addition, can have difficulty with motor function (slow gait and poor balance).</td>
</tr>
<tr>
<td>Lewy body disease</td>
<td>• 5 to 10 percent of individuals with dementia show evidence of DLB alone</td>
</tr>
<tr>
<td></td>
<td>• Most people with DLB also have Alzheimer's disease pathology</td>
</tr>
<tr>
<td></td>
<td>• Symptoms are common to Alzheimer's but more likely to have early symptoms: sleep disturbances, well-formed visual hallucinations, and slowness, gait imbalance or other parkinsonian movement features.</td>
</tr>
<tr>
<td></td>
<td>• These early features may occur in the absence of significant memory impairment.</td>
</tr>
<tr>
<td>Frontotemporal lobar degeneration (FTLD)</td>
<td>• About 50 percent of people with FTLD are ages 45 to 60.</td>
</tr>
<tr>
<td></td>
<td>• FTLD accounts for less than 10 percent of dementia cases.</td>
</tr>
<tr>
<td></td>
<td>• Typical early symptoms include: marked changes in personality and behavior, difficulty with producing or comprehending language.</td>
</tr>
<tr>
<td></td>
<td>• Memory is typically spared in the early stages of disease.</td>
</tr>
</tbody>
</table>

### Other conditions
- Conditions that can cause dementia or dementia-like symptoms (including reversible causes)
  - Reactions to medications
  - Thyroid problems
  - Blood sugar problems
  - Too little or too much sodium or calcium
  - Vitamin B12 deficiency
  - Infections: meningitis, encephalitis, untreated syphilis, lyme disease
  - Subdural hematomas
  - Heavy metal toxicity
  - Brain tumors
  - Lack of oxygen to brain
  - Heart and lung problems
Key Points

- Delirium is a condition that **comes on quickly** (within hours or days)
- Dementia is a disorder of the brain that **develops slowly** (over several months or years)

Depression

- May also be referred to as late-life depression, major depressive disorder, major depression
- Can be chronic, persistent, or recurrent
- Can be a reaction to events that are common in the lives of older adults
  - Developing an illness
  - Experiencing cognitive decline
  - Losing a loved one
  - Admission to hospital or LTC
- Large impact on quality of life
- Depression is common in older adults
  - **IT IS NOT A NORMAL PART OF AGING**
- Hypoactive delirium often misdiagnosed as depression
  - "Pseudodementia"

<table>
<thead>
<tr>
<th>Mental Decline</th>
<th>Depression</th>
<th>Dementia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Orientation</td>
<td>Oriented</td>
<td>Not Oriented</td>
</tr>
<tr>
<td>Memory</td>
<td>Difficulty Concentrating</td>
<td>Short term memory deficit</td>
</tr>
<tr>
<td>Motor Skills</td>
<td>Slow but normal</td>
<td>Impaired</td>
</tr>
</tbody>
</table>

Signs & Symptoms of depression in older adults

- Constant sadness
- Isolation
- Feelings of helplessness
- Changes in weight
- Insomnia/hypersomnia
- Inability to sit still (pacing, fidgeting)
- Constant worries about finances or health
- Poor concentration
- Unexplained physical complaints (somatic)

Hurley, 2019
Depression, con’t
• Major depression is reported in:
  ▫ 5-16% of community dwelling adults
  ▫ Up to 54% in the first year living in a nursing home
  ▫ 10-12% of hospitalized older adults
• Depression is more common in those with multiple chronic conditions
• Often reversible with prompt recognition and appropriate treatment.
• If left untreated, may result in the onset of physical, cognitive, functional, and social impaired, decreased quality of life, delayed recovery from medical illness and surgery, increased health care utilization, and suicide.

Depression, con’t
• In older adults, depression may be misattributed to physical illness, dementia, or aging process.
• Look for:
  ▫ Fatigue
  ▫ Sleep disturbance
  ▫ Cognitive difficulties (memory, concentration)
  ▫ Stress
  ▫ Weight gain or loss
  ▫ Dampened affect
  ▫ Work or relationship dysfunction
  ▫ Changes in interpersonal relationships
  ▫ Memory or cognitive difficulties including concentration or memory
  ▫ Poor behavioral follow-through of daily life activities or prior treatment recommendations
  ▫ Ask about chronic pain, including orthopedic pain
• Older adults may not complain of depressed mood or anhedonia.
• May present with nonspecific or specific somatic complaints including:
  ▫ Insomnia
  ▫ Appetite disturbances and/or weight gain or loss
  ▫ Lack of energy
  ▫ Fatigue
  ▫ Chronic pain
  ▫ Constipation
  ▫ Musculoskeletal disorders
  ▫ Irritable bowel syndrome
  ▫ Memory or cognitive difficulties including concentration or memory

Diagnostic Criteria
<table>
<thead>
<tr>
<th>Major Depressive Disorder</th>
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</thead>
<tbody>
<tr>
<td>At least 5 of the following symptoms have to have been present during the same 2-week period (and at least 1 of the symptoms must be diminished interest/pleasure or depressed mood)</td>
</tr>
<tr>
<td>• Depressed mood</td>
</tr>
<tr>
<td>• Diminished interest or loss of pleasure in almost all activities (anhedonia)</td>
</tr>
<tr>
<td>• Significant weight change or appetite disturbance</td>
</tr>
<tr>
<td>• Sleep disturbance (insomnia or hypersomnia)</td>
</tr>
<tr>
<td>• Psychomotor agitation or retardation</td>
</tr>
<tr>
<td>• Fatigue or loss of energy</td>
</tr>
<tr>
<td>• Feelings of worthlessness</td>
</tr>
<tr>
<td>• Diminished ability to think or concentrate; indecisiveness</td>
</tr>
<tr>
<td>• Recurrent thoughts of death, recurrent suicidal ideation without a specific plan, or a suicide attempt or specific plan for committing suicide</td>
</tr>
<tr>
<td>Feature</td>
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<tr>
<td>------------------</td>
</tr>
<tr>
<td>Onset</td>
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<tr>
<td>Course</td>
</tr>
<tr>
<td>Duration</td>
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<tr>
<td>Alertness</td>
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<tr>
<td>Attention</td>
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<tr>
<td>Orientation</td>
</tr>
<tr>
<td>Memory</td>
</tr>
<tr>
<td>Thinking</td>
</tr>
<tr>
<td>Perception</td>
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</tbody>
</table>

Key Points

- Delirium is a condition that **comes on quickly** (within hours or days)
- Dementia is a disorder of the brain that **develops slowly** (over several months or years)
- Depression may appear **abruptly or over weeks**.

References

- Geriatric Depression (Depression in Older Adults). [n.d.]. Retrieved from https://www.healthline.com/health/depression/elderly