Dementia, Delirium and Depression

A Practical Approach

By
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About me

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Granddaughter to 2 living 93yo females that may represent the spectrum of aging

- Active vs. passive
- Medical co morbidity
Older people are a heterogeneous group. When you've seen one you've just seen one.

There are robust elderly, frail ones and those entering the last stages of life.
Geriatricians

Only about 7000 physicians in the nation are certified geriatricians.

By 2030 we will need 36,000 geriatricians to provide care for the aging population.

More elderly people will turn to the internist and family physicians for care.
Goals of Care- THRIVE

Keep them functioning independently and having a good quality of life!

The goal is maintaining a proper balance between treating enough to make a difference without over-treating.
The top priorities as I see them

**Fall prevention/Hip fractures**
Get up and go test vs. Tinnetti gait and balance

**Incontinence**
#1 reason why patients get placed in SNF for long term care.

**Medication errors**
Bring a bag of medications including OTC to every visit changes are written on the medication bottles

**End-of-life care**
POLST/advance directive
Palliative Care/Hospice
Dementia, Delirium, Depression
What is wrong with grandma?
Objectives

1. Differentiate between normal age-related cognitive decline, mild cognitive impairment and dementia.

2. Differentiate between dementia and delirium.

3. Utilize tools applicable to the primary care setting to identify patients with dementia.
Early detection of dementia helps families anticipate the patient's needs. Helps physicians identify those who could benefit from pharmacotherapy. Helps identify those in need of additional support such as:
- MSW, adult day care center, paid caregiver, respite…
Normal Aging

Some cognitive functions such as mental flexibility and speed of processing decline in normal aging.

Most common complaints in the elderly tend to be related to working memory: recalling names and telephone numbers, misplacing objects, multitasking, attention and concentration.

Learning new information remains intact.
Dementia versus MCI

Need to assess both cognition and function including ADLs and IADLs.
ADLs

Bathing with sponge, bath, or shower
Dressing
Toilet Use
Transfers (in and out of bed or chair)
Urine and Bowel Continence
Eating
IADLS

Ability to use telephone
Shopping
Food Preparation
Housekeeping
Laundry
Transportation
Responsibility for own medications
Ability to Handle Finances
MCI

Memory impairment (word finding) without impairment in activities of daily living.

May precede Alzheimer's disease or other dementias.

6% to 25% of patients with MCI progress to dementia annually.
Recommendations for MCI patients

Healthy diet including the consumption of fish and a regular basis
No smoking
Regular exercise
Regular mental activity such as puzzles or discussion groups
Social contacts/education
Antioxidants are controversial (folate okay but vitamin E has been disappointing)
Tight control of chronic illnesses including diabetes high blood pressure and cholesterol
Omega 3 fatty acids, green tea, curcumin (curry) may lower levels of amyloid
Medication management on a case by case basis (cholinesterase inhibitors are used but no FDA approved)
What is the best screening instruments for dementia in the primary care setting?

**Mini-Cog** (3 word registration, clock drawing test, 3 word recall)

**MMSE**

The Mini-Cog has accuracy similar to or better than the MMSE and can be done in the primary care setting in about 3 minutes.
Mini-Cog

Scoring

- 0 recall is Positive for cognitive impairment

- 1-2 and Abnormal CDT then positive for cognitive impairment

- 1-2 and Normal CDT then negative for cognitive impairment

- 3 recall is Negative screen for dementia (no need to score CDT)
-clock drawing test - a measure of cognitive decline in Alzheimer patients
Orientation
- (5) “What is the year? Season? Date? Day of the week? Month?”
- (5) “Where are we now: State? County? Town/city? Hospital? Floor?”

(3) word registration

(5) Attention and calculation
- serial 7s (93, 86, 79, 72, 65) vs. “Spell WORLD backwards.” (D-L-R-O-W)

(3) word recall

Language
- (2) have patient name two simple objects, such as a wristwatch and a pencil.
- (1) “Repeat the phrase: ‘No ifs, ands, or buts.’”
- (3) “Take the paper in your right hand, fold it in half, and put it on the floor.”
- (1) follow written instruction (“Close your eyes.”)
- (1) “Make up and write a sentence about anything.”
- (1) “Please copy this picture.” two intersecting pentagons all ten angles must be present and two must intersect to score one point.

30 TOTAL
Interpretation of the MMSE

Single Cutoff <24 Abnormal

Range
- <21 Increased odds of dementia
- >25 Decreased odds of dementia

Education
- <21 Abnormal for 8th grade education
- <23 Abnormal for high school education
- <24 Abnormal for college education

Severity
- 24-30 No cognitive impairment or MCI
- 18-23 Mild dementia
- 0-17 Severe dementia
MMSE

Owned by copyright owner Psychological Assessment Resources (PAR).

We may not be able to use this test next year.
The Montréal Cognitive Assessment (MoCA)

a 30 point test similar to the MMSE
5 word recall
Clock drawing
Executive and visuospatial items
May be more sensitive for MCI
### Montreal Cognitive Assessment (MOCA)

#### Copy Cube
- **Points:** 5
- **Instructions:** Copy the given cube. 

#### Draw Clock (Ten past eleven)
- **Points:** 2
- **Instructions:** Draw the clock to show ten past eleven.

#### Naming
- **Points:** 3
- **Instructions:** Name the pictures of the rhinoceros, elephant, and camel.

#### Memory
- **Points:** 2
- **Instructions:** Read the list of words. The subject must repeat them in the forward order and backward order.

#### Attention
- **Points:** 2
- **Instructions:** Read the list of digits. The subject must repeat them in the forward order.

#### Language
- **Points:** 2
- **Instructions:** Repeat: "I only know that John is the one to help today."

#### Abstraction
- **Points:** 1
- **Instructions:** Similarity between "banana - orange - fruit" and "train - bicycle - wheel".

#### Delayed Recall
- **Points:** 5
- **Instructions:** How many words in the list were repeated?

#### Orientation
- **Points:** 6
- **Instructions:** Name the date, month, and year. 

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**www.mocatest.org**

**Normal ± 2SD**

Administered by: __________________________

Kaiser Permanente
(3) What day of the week, year and state
Five recall objects given
You have $100 and you go to the store and buy a dozen apples for $3 and a tricycle for $20.
    - How much did you spend? (1)
    - How much do you have left? (2)

Please name as many animals as you can in one minute.
    (0) 0-5 animals (1) 5-10 animals (2) 10-15 animals (3) 15+ animals

Recall of 5 object (5)
series of numbers backwards
    (0) 87 (1) 649 (1) 8537
**Clock.** Please put in the hour markers and the time at ten minutes to eleven o’clock.
(2) Hour markers okay
(2) Time correct

(1) Please place an X in the triangle. (triangle, square and circle pics)
(1) Which of the above figures is largest?

**Story and follow up questions**
Jill was a very successful stockbroker. She made a lot of money on the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Chicago. She then stopped work and stayed at home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after.
(2) What was the female’s name? (2) What work did she do?
(2) When did she go back to work? (2) What state did she live in?
SLUMS-scoring

High School education
27-30 normal
20-27 MCI
1-19 Dementia

Less than HS
20-30 normal
14-19 MCI
1-14 Dementia
Dementia screening

- History- reliable family member or friend medications
- Physical exam including MMSE/MoCA/SLUMS
- Blood test including TSH, folate, B12, MMA, homocystine, syphilis screen.
- CT scan versus MRI-to rule out tumor/vascular lesions.
  - hippocampus volume reduction may be used in future diagnosis.
- PET scan shows hypometabolism in the temporal and parietal cortices.
- Neuropsychological testing
- Lumbar puncture?
A decrease in the amyloid beta 1-42 peptide and an increase in the tau and phospotau proteins may be the earliest signs of AD.

Sensitivity and specificity need to be established before this test can be used in the clinical practice.
Genetic role of Alzheimer's disease

Apolipoprotein E4 allele is a marker for Alzheimer's disease

People of European descent who have one copy have 3 times the risk (70s)

Homozygous have 15 times the risk with an earlier onset (60s)

Although commercially available this test is still considered research tool.
Dementia diagnosis

DSM-IV defines dementia as memory loss and at least one other area of cognitive impairment that interferes with social and occupational functioning, not due to delirium.
other cognitive difficulties

aphasia (speech problems)
apraxia (motor memory problems)
agnosia (sensory recognition problems)
diminished executive functioning (complex behavior sequencing problems).
Alzheimer's disease

The most common cause of dementia in the United States.

Over 5 million people in the U.S. are affected.

Prevalence doubles every 5 years from age is 65-85. AD affects 30% to 50% of all people at age 85.

Often seen in conjunction with vascular dementia.

2.8 point declining MMSE/year is predicted with faster decline in the moderate to severe stages of the illness.
Community resources- senior centers, adult day care facilities, adult day healthcare facilities.
Safe return bracelet, life alert.
IHSS(medical), hired help, home health services including home safety check.
Referral to geriatric clinic where a team approach to diagnosis and management of the patient takes place.
Legal considerations-DURABLE POWER OF ATTORNEY for health care and finances.
Capacity declaration.
Driving- accidents, near misses, getting lost. Trail marking test part B (completion time >3min). Dementia is a reportable condition.
Elder abuse- fiduciary, physical, sexual, neglect, isolation.
End-of-life care- POLST form, hospice.
To drive or not to drive...
Trail Making Test Part B
Cholinesterase inhibitors are approved for mild to moderate disease.

Memantine (Namenda) an NMDA antagonist is approved for moderate to severe disease.
Cholinesterase Inhibitors

decrease rate of decline over time rather than improvement in cognitive or behavioral symptoms.

1. Tacrine (Cognex)- 4 times a day, GI side effects, may raise hepatic enzyme levels thus not used.

2. Donepezil (Aricept)- once a day.

3. Galantamine (Razadyne)- has extended release formula.

4. Rivastigmine (Exelon)- taken BID with meals (GI side effects), also comes as a patch.
Treatment Strategy

1. start with **cholinesterase inhibitor** soon after diagnosis
2. titrate dose as tolerated
3. once MMSE decline is seen (10-20 or moderate range) **namenda** should be added
4. titrate **namenda** to goal of 10mg bid
5. may d/c **cholinesterase inhibitors** although some say they are associated with less behavioral disturbances.
Disease-modifying agents are being tested to see if they delay disability,

1. Compounds that reduce **amyloid** (the amyloid cascade hypothesis)

2. Agents that modulate and inhibit **gamma secretase** (enzyme that cleaves the amyloid precursor)

3. **Immunotherapy** approaches that target the toxic fragments of beta amyloid (vaccines have side effects but IVIG with beta amyloid antibodies may be safer)
Mr. B. is an 82-year-old retired accountant.
PMHx: HTN, dementia.
needs supervision with bathing and dressing and can no longer recognize family.
Recent aspiration pneumonia (second in the last 6 months). Failed swallow study and was given a dysphagia diet. Has been increasingly disoriented and has fallen several times. He has lost 10 pounds from last 6 months.
Criteria For Eligibility for Medicare Hospice Benefit

Stage 7 or beyond according to the FAST scale
   Unable to ambulate without assistance
   Unable to dress without assistance
   Unable to bathe without assistance
   Urinary or fecal incontinence, intermittent or constant
   No meaningful verbal communication, stereotypical phrases only, or ability to speak limited to six or fewer intelligible words

Plus one of the following within the past 12 months:
   Aspiration pneumonia
   Pyelonephritis or other upper UTI
   Septicemia
   Multiple stage 3 or 4 decubitus ulcers
   Fever that recurs after antibiotic therapy
   Inability to maintain sufficient fluid and calorie intake, with 10 percent weight loss during the previous six months or serum albumin level less than 2.5 g per dL (25 g per L)

FAST = Functional Assessment Staging Scale
**HIPAA PERMITS DISCLOSURE OF POLST TO OTHER HEALTH CARE PROFESSIONALS AS NECESSARY**

### Physician Orders for Life-Sustaining Treatment (POLST)

**A**  
**CARDIOPULMONARY RESUSCITATION (CPR):**  
- Person has no pulse and is not breathing.  
- Attempt Resuscitation/CPR  
- Do Not Attempt Resuscitation/DNR (Allow Natural Death)  
  
**B**  
**MEDICAL INTERVENTIONS:**  
- Person has pulse and/or is breathing.  
  
- **Comfort Measures Only:** Use medication by any route, positioning, wound care and other measures to relieve pain and suffering. Use oxygen, suction and manual treatment of airway obstruction as needed for comfort. Antibiotics only to promote comfort. **Transfer if comfort needs cannot be met in current location.**  
  
- **Limited Additional Interventions:** Includes care described above. Use medical treatment, antibiotics, and IV fluids as indicated. **Do not intubate. May use non-invasive positive airway pressure. Generally avoid intensive care.**  
  
- **Do Not Transfer to hospital for medical interventions. Transfer if comfort needs cannot be met in current location.**  
  
- **Full Treatment:** Includes care described above. Use intubation, advanced airway interventions, mechanical ventilation, and defibrillation/cardioversion as indicated. **Transfer to hospital if indicated. Includes intensive care.**  
  
- **Additional Orders:**  

**C**  
**ARTIFICIALLY ADMINISTERED NUTRITION:**  
- Offer food by mouth if feasible and desired.  
- No artificial nutrition by tube.  
- Defined trial period of artificial nutrition by tube.  
- Long-term artificial nutrition by tube.  

**D**  
**SIGNATURES AND SUMMARY OF MEDICAL CONDITION:**  
- **Discussed with:**  
  - Patient  
  - Health Care Decisionmaker  
  - Parent of Minor  
  - Court Appointed Conservator  
  - Other  

**Signature of Physician**  
- My signature below indicates to the best of my knowledge that these orders are consistent with the person’s medical condition and preferences.  

**Print**  
- Physician Name  
- Physician Phone Number  
- Date  

**Physician signature (required)**  
- Physician License #  

**Signature of Patient, Decisionmaker, Parent of Minor or Conservator**  
- By signing this form, the legally recognized decisionmaker acknowledges that this request regarding resuscitative measures is consistent with the person's desires and, with the best interest of the individual who is the subject of the form.  

**Signature required**  
- Name (print)  
- Relationship (wrt self patient)  

**Summary of Medical Condition**  
- Office Use Only  

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**SEND FORM WITH PERSON WHENEVER TRANSFERRED OR DISCHARGED**

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**Kaiser Permanente**
Dementia and Behavioral problems

Reduced quality of life

No pharmaceutical silver bullet

Behavioral Problems may lead to higher levels of care.
Behavioral Problems

1. **Apathy** is very common. Some clinical trial with **Ritalin** (methylphenidate) and **provigil** (modafanil)
2. **Depression/irritability**- responds well to SSRI
3. **Agitation/psychotic features** (delusions and hallucinations) of dementia
4. **Anxiety**- pacing, day and night reversal

All can lead to **caregiver stress** and inability to cope. Behavioral treatment such as reducing environmental stressors, daily routine, etc (36hr day).
Treatment/Conservative measures

Treat underlying medical conditions such as hypoglycemia, pain and constipation.

Review medications and stop anti-cholinergic drugs that may contribute to hallucinations.

Provide a safe environment to permit safe wandering.

Exercise 30 minutes/3 days a week has been shown to have reduce agitation and depression in demented patients.
Antipsychotics

FDA black box advisory: hyperglycemia, CVAs and even death associated with the use of these medications.

Dose reduction trial and possible discontinuation should be part of the plan of care.
Anticonvulsant

Have been used in known psychotic agitation, aggression and impulsivity associated with dementia.

Valproic acid (Depakote)
Carbamazepine (Tegretol)

Limitations include adverse metabolic profile including hyperglycemia, weight gain and hyperlipidemia, dose related orthostasis and sedation.
Mrs. S

76-year-old woman who is agitated and confused.

Status post L5-S1 spinal fusion 3 days earlier.

PMHx: Mixed connective tissue disease.

Medications: Prednisone, Celebrex, nortriptyline, Coumadin, Ultram.
On the day of surgery she had confusion in the evening and very little sleep.

On postop day 1 she had increased confusion and did not sleep.

On postop day 2 she was not oriented to time place or person. Agitation was noted as the patient was calling out. On exam there were no focal neurological findings. Laboratory workup failed to reveal a cause of confusion.
Delirium is an emergency that requires immediate intervention.
Delirium

Common in the postop period
Prompt identification and treatment of the underlying cause is essential (meds, infection, electrolyte imbalances, etc.)

74% of ill cancer patients who recovered from delirium remember the episode as reported by Cancer (February 24th 2009).
Delirium

**Global impairment** of cognitive function.
Symptoms appear **suddenly**, usually hours or days.
Oriented to person, but not to time or place.
Thought process is **disorganized** and ability to shift focus, sustain attention, or cooperate with caregivers is greatly impaired.
Speech may be loud, argumentative, and difficult to follow or understand.
Visual **hallucinations**, may lead patient to misinterpret the environment. (may feel threatened by shadows on the wall.)
Symptoms tend to **fluctuate throughout the day**, so the patient may appear lucid at one time and grossly confused at another. These symptoms usually are **worse at night** or upon awakening.

Although many delirious patients are agitated, restless, or combative, others are **lethargic and difficult to rouse**. Some alternate between agitation and lethargy.
Delirium Management

Adequate lighting, familiar objects including clocks and calendars should be present.
Access to all normal sensory input including glasses dentures and hearing aids.
The presence of family members or friends will help with frequent re-orientation.
Adequate nutrition, hydration, oxygenation and sleep.
Delirium Management

Only if there is a concern for patient safety or staff safety and other measures have been ineffective then pharmacological intervention should be considered.

Restrain should be avoided if at all possible as they can lead to increased agitation.

Antipsychotic agents may be used.

Benzodiazepines should be reserved for patients whose delirium is due to alcohol or benzodiazepine withdrawal.
Delirium Management

Although newer antipsychotic agents are widely used these are no better than Haldol. 

Haldol 0.25-0.5 mg every 4 hours as needed.

In June of 2008 the FDA issued a black box warning for typical antipsychotic agents. A similar warning for atypical antipsychotic agents was issued in 2005. Major contributors to increased mortality were cardiovascular causes and sudden death.
Atypical Antipsychotics

risperidone (Risperdal), olanzapine (Zyprexa), and quetiapine (Seroquel), may have fewer extrapyramidal adverse effects.

Quetiapine (Seroquel) and olanzapine (Zyprexa) are often used for treating psychosis in Parkinson's disease (less dopamine receptor blockade)
Mr. B

78-year-old retired engineer.

Worsening memory over last 3-4 months, described as difficulty remembering conversations and keeping appointments.

Recently, his son found statement on the kitchen table and realized his father had not paid his bills.
Mr. B

PMHx: HTN and BPH.
ROS: frequent “aches and pains of old age.”
Mr. B. lives alone; his wife passed away a year ago. He eats dinner at his daughter's home once or twice a week. He does not smoke or drink.
MMSE 27/30, (2 points in recall and 1 point in calculation)

GDS 7/15 (normal is 0 to 5)
Geriatric Depression Scale-Short Form

1. Are you basically satisfied with your life? YES / NO
2. Have you dropped many of your activities and interests? YES / NO
3. Do you feel that your life is empty? YES / NO
4. Do you often get bored? YES / NO
5. Are you in good spirits most of the time? YES / NO
6. Are you afraid that something bad is going to happen to you? YES / NO
7. Do you feel happy most of the time? YES / NO
8. Do you often feel helpless? YES / NO
9. Do you prefer to stay at home, rather than going out and doing new things? YES / NO
10. Do you feel you have more problems with memory than most? **YES** / **NO**
11. Do you think it is wonderful to be alive now? **YES** / **NO**
12. Do you feel pretty worthless the way you are now? **YES** / **NO**
13. Do you feel full of energy? **YES** / **NO**
14. Do you feel that your situation is hopeless? **YES** / **NO**
15. Do you think that most people are better off than you are? **YES** / **NO**

Answers in bold indicate depression. Score 1 point for each bolded answer.
A score > 5 points is suggestive of depression.
A score > 10 points is almost always indicative of depression.
A score > 5 points should warrant a follow-up comprehensive assessment.
Depression

Difficult to assess in patients with dementia

Apathy is seen in both dementia and depression

Depression and dementia may coexist leading to greater disability and faster cognitive decline.

Suicide is seen frequently in the elderly. Those at higher risk are white males older than 80.
Pseudodementia

Nondemented older patients can appear to have cognitive impairment when they develop depression.

Disturbances in attention, speed of mental processing and executive function can be seen.
Depression Treatment

**Remeron (mirtazapine)** improves sleep and appetite; but may not be the best option for those with diabetes, hyperlipidemia or obesity.

**Effexor (venlafaxine) and Cymbalta (duloxetine)** may help in *pain syndromes*. They may cause anorexia and elevated blood pressure at higher doses. Effexor can be associated with insomnia.

**Wellbutrin (bupropion)** risk of seizures is seen at higher levels. High incidence of weight loss.
Depression Treatment

**Trazodone** at low doses may help with sleep but at antidepressant doses may cause orthostatic side effects.

**Nortriptyline** has anticholinergic side effects. **Monoamine oxidase inhibitors** have fallen out of favor.

**Ritalin (methylphenidate)** low doses may be used for depression. Patients who respond may need to be transitioned to another antidepressant drug after 2-4 weeks of therapy.
SSRI Issues

Falls, fragility fractures and urinary incontinence may be seen in frail elderly patients.

May decrease appetite during the initial treatment.

**Paxil** has the most anti-cholinergic properties thus may lead to constipation and delirium.

**Prozac** has a long half-life that can lead to insomnia and agitation and may not be appropriate in older adults.

Tremors can be seen with all SSRIs. Parkinsonism is also possible.

Hyponatremia, bruising and increased bleeding time can occur with SSRIs.
The 3 Ds

Step back and take a deep breath...

Assess the situation
Obtain information
Trial and error

Consult a Geriatrician!
The End