Cognitive Impairment in Primary Care

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Objectives

• At the end of this presentation, one should be able to:
  • Identify common screening tools used in primary care to identify cognitive impairment in adult patients.
  • Differentiate the different types of cognitive impairment.
  • Recognize the impact of cognitive assessments on your patients.
Case #1

• 85 year old retired Professor here for routine visit.
  • PMH: Crohn’s disease, anxiety, hypertension
  • Meds: lisinopril, aspirin, temazepam PRN.
  • Social hx: Lives with wife; occ ETOH, still driving to Grand Rounds
  • “Doc, I’m having trouble with my memory . . .”
Cognitive Impairment in Primary Care: Barriers to Diagnosis

- Physicians vary in ability to diagnose and document symptomatic dementia (up to 75% missed in some studies)
- Lack of knowledge/lack of protocols/lack of time
- Opinion that specialists should do this
  - Screening for asymptotic disease vs active case finding
- Concerned about negative impact of diagnosis
- May doubt usefulness of early diagnosis/limited treatment options
- Difficulty relaying the diagnosis


Delayed Diagnosis May Have Negative Consequences

- Missed opportunity to identify contributing factors and potential beneficial treatments
- Uninformed hospital/consult care providers
  - One study: 42% of acute medical admissions > age 70 had dementia, but only half were diagnosed at the time
- Impacts the care plan
  - Less able to trust medical history taking
  - Need simpler med regimen, written instructions
  - Overall goals of care may change
- Missed opportunity for advanced care planning
  - Patients with mild dementia can still participate in discussions
Normal Aging

• No consistent, progressive deviations on testing of memory
• Some decline in processing and recall of new info: slower, harder
• Intact memory for current events
• Retention of verbal abilities and vocabulary
• Reminders work- visual tips, notes
• Absence of significant effects on ADLs or IADLs due to cognition

Dementia

• DSM-5: Major Neurocognitive Disorder
• Significant decline from prior level of function with impairment in at least one domain:
  • Learning and Memory
  • Executive function: finances, complex activities
  • Complex attention: sustained and divided attention, processing speed
  • Language: word finding, syntax errors
  • Visuospatial: difficulty in recognizing faces, objects in direct view, orienting clothes to body
  • Social cognition: difficulty in regulating emotion, behavior; empathy
• AND affects daily function/independence
• AND not a result of delirium or other mental disorder

• Specified as mild, moderate or severe
• With or without behavioral disturbance
Normal Aging or Dementia?

Normal Aging:
- Making a bad decision once in a while
- Missing a monthly payment
- Forgetting which day it is, and remembering later
- Sometimes forgetting which word to use
- Losing things from time to time
- Sometimes needing help using electronic devices
- More time/energy needed to encode new information

Dementia:
- Poor judgment and decision making
- Can no longer manage a budget
- Losing track of the season or year
- Difficulty having a conversation
- Misplacing things and unable to retrace steps
- Difficulty with familiar tasks
- Very difficult to encode new information

Mild Cognitive Impairment (MCI)

- DSM-5: Minor Neurocognitive Disorder
- Modest cognitive decline without functional impairment
- Problems with memory, language, judgment, and thinking—problems greater than expected for the age of the person, but less than is required for dementia diagnosis
- Prevalence of about 15-20% of those > 70 years old
- Not necessarily a precursor to dementia
  - About a three-fold risk of dementia
  - About 1/3
    - Improve to normal
    - Remain stable with MCI
    - Progress to dementia
When Does It Become Dementia?

• **Presence of cognitive impairment** detected via history taking and cognitive assessment
• **Decline** from previous level of function
• **Interference** with the ability to function at work or usual activities
• **Distinguish** from normal aging
• **Exclusion** of delirium or major psych disorder

Delirium

• Acute onset and fluctuating course
• **AND** disturbance in attention and awareness
• **AND** disturbance in cognition
• **AND** evidence that this is the consequence of another medical condition

• Can occur in outpatients! Can last months after a hospitalization.
Geriatric Syndrome

**Intrinsic Factors**
- Medical conditions
- Impaired vision and hearing
- Age related changes

**Extrinsic Factors**
- Medications
- Improper use of assistive devices
- Environment

FALLS

Functional Status and Syndromes

Function

High

Low

Institutionalization

Time
Functional Status and Syndromes: Falls

Function

High

Low

Polypharmacy
Osteoarthritis
Impaired Vision
Environment
Osteoporosis
Institutionalization

Time

Functional Status and Syndromes: Risk Factor Mitigation Additive/Synergistic?

Function

High

Low

Polypharmacy
Osteoarthritis
Impaired Vision
Environment
Osteoporosis
Institutionalization

Time
Geriatric Syndrome: Cognitive Impairment

Intrinsic Factors
- Medical conditions
- Impaired hearing
- Age related changes

Extrinsic Factors
- Medications
- Activity
- Environment

Cognitive Impairment

Cognitive Impairment in Primary Care (Ong), NW GWEC Spring 2020
Cognitive Impairment: Impact of Medications

- **Anticholinergics**
- **Side effects**
  - Poor coordination
  - Dry mouth, eyes
  - Constipation
  - Urinary retention
  - Cognitive impairment
  - Delirium

### Table 7. Drugs With Strong Anticholinergic Properties

<table>
<thead>
<tr>
<th>Anticholinergic</th>
<th>Promethazine</th>
<th>Pantoprazole</th>
<th>Tropicaine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticholinergic</td>
<td>Antipyrine</td>
<td>Pancreatin</td>
<td>Tropicaine</td>
</tr>
<tr>
<td>Antipsychotic</td>
<td>Chlorpromazine</td>
<td>Olanzapine</td>
<td>Ziprasidone</td>
</tr>
<tr>
<td>Antidepressant</td>
<td>Clomipramine</td>
<td>Venlafaxine</td>
<td>Ziprasidone</td>
</tr>
<tr>
<td>Diuretic</td>
<td>Captopril</td>
<td>Trichlormethane</td>
<td>Ziprasidone</td>
</tr>
<tr>
<td>Antihistamine</td>
<td>Diphenhydramine</td>
<td>Trihexyphenidyl</td>
<td>Ziprasidone</td>
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<tr>
<td>Antispasmodic</td>
<td>Hyoscine</td>
<td>Atropine</td>
<td>Tolazoline</td>
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<tr>
<td>Anticonvulsant</td>
<td>Lamotrigine</td>
<td>Phenytoin</td>
<td>Tolazoline</td>
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<tr>
<td>Antiarrhythmic</td>
<td>Lidocaine</td>
<td>Propafenone</td>
<td>Tolazoline</td>
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<td>Antipsychotic</td>
<td>Haloperidol</td>
<td>Quetiapine</td>
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<td>Antidepressant</td>
<td>Venlafaxine</td>
<td>Trazodone</td>
<td>Tolazoline</td>
</tr>
<tr>
<td>Antipsychotic</td>
<td>Clozapine</td>
<td>Ziprasidone</td>
<td>Tolazoline</td>
</tr>
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American Geriatrics Society 2019 Updated AGS Beers Criteria® for Potentially Inappropriate Medication Use in Older Adults

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**Over the Counter Medications**

- **Unisom SleepTabs**
  - 25 mg
  - 32 Tablets
- **Advil PM**
  - 200 mg ibuprofen, 30 mg diphenhydramine
  - 200 mg caplets

Cognitive Impairment in Primary Care (Ong), NW GWEC Spring 2020 10
Cognitive Impairment: Impact of Medications

- Higher cumulative anticholinergic medication use is associated with an increased risk for dementia.
  - 3,434 participants aged 65 and older with no dementia at study entry
  - Prospective population-based cohort study, mean follow-up of 7.3 years
  - Most common drug classes used were:
    - Tricyclic antidepressants (e.g., amitriptyline, nortriptyline, etc.)
    - First generation antihistamines (e.g., chlorpheniramine, diphenhydramine, doxylamine, meclizine, dicyclomine, promethazine)
    - Bladder antimuscarinics (e.g., oxybutynin, tolterodine, solifenacin, trospium, darifenacin)

Cognitive Impairment: Impact of Medications

- Benzodiazepines
  - One of the most common medication classes
  - Management of anxiety and insomnia
  - Conflicting studies: dementia can be preceded by symptoms such as insomnia, anxiety, and depression
  - American Geriatric Society Beers Criteria 2019

<table>
<thead>
<tr>
<th>Benzodiazepine</th>
<th>Short and Intermediate Acting</th>
<th>Long Acting</th>
<th>National</th>
<th>Recommendation</th>
<th>Quality of Evidence</th>
<th>Strength of Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alprazolam</td>
<td></td>
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<tr>
<td>Estazolam</td>
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<tr>
<td>Lurasidone</td>
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<tr>
<td>Oxazepam</td>
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<td>Temazepam</td>
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<tr>
<td>Triazolam</td>
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</tr>
</tbody>
</table>


Gray SI et al. Benzodiazepine Use and Risk of Incident Dementia or Cognitive Decline: Prospective Population Based Study. BMJ. 2016 Feb 2;352:i90. doi: 10.1136/bmj.i90.

Cognitive Impairment: Hearing Loss

- Up to two-thirds of older adults suffer from early loss
- Untreated hearing loss experience a faster decline in thinking and memory skills than do those with normal hearing.
- 1984 adults (mean age, 77.4y), prospective observational study of baseline cohort without cognitive impairment
  - Modified Mini-Mental State Examination [3MS] score, ≥80
  - Incident cognitive impairment was defined as a 3MS score <80 or a decline in 3MS score of >5 points from baseline.
  - 30-40% faster decline after six years when compared with those who did not have hearing loss

• 24% increased risk of cognitive impairment among those with hearing loss


Cognitive Impairment: Modifiable Risk Factors

• Vascular health
• Diabetes
• Physical inactivity
• Mental inactivity and social engagement
• Depression and anxiety
• Smoking
• Substance abuse
• Sleep disorders
• Diet
Cognitive Impairment: History Taking

- Which cognitive domains are impacted?
  - Learning and Memory
    - Working memory: verbal, spatial, location
    - Episodic memory
    - Semantic memory: long term
    - Prospective memory: future
    - Procedural memory
  - Executive function
    - Reasoning
    - Problem solving
  - Language/verbal
  - Complex attention
  - Visuospatial
  - Social Cognition: insight

- How long has the problem been present?
- What is the tempo of the condition?
- Has there been a history of repeated traumatic brain injuries?
- Is there tobacco, alcohol, and/or illicit drug use?
- What is the highest level of education attained?
- What are your hobbies? Do you still enjoy doing them?
- Medication review.
- Corroborate the history.
- Is there a family history?

10 Warning Signs of Alzheimer's

1. Memory loss that disrupts daily life.
2. Challenges in planning or solving problems.
3. Difficulty completing tasks at home, at work or at leisure.
4. Confusion with time or place.
5. Trouble understanding visual images and spatial relationships.
6. New problems with words in speaking or in writing.
7. Mislacing things and losing the ability to retrace steps.
8. Decreased or poor judgment.
9. Withdrawal from work or social activities.
10. Changes in mood or personality.
Cognitive Impairment: Non-Modifiable Risk Factors

- APOE4 is the major genetic risk factor for Alzheimer's disease.
  - Pleomorphic effects of APOE4
    - Interferes with Aβ clearance from the brain
    - Damage to brain blood vessels → leakage of the blood-brain barrier
- Lifetime risk for Alzheimer's disease is more than 50% for APOE4 homozygotes and 20-30% for APOE3 and APOE4 heterozygotes, compared with 11% for men and 14% for women overall irrespective of APOE genotype*


Cognitive Impairment: Examination

- Vitals
- Appearance and language
- Hearing impairment
- Psychiatric: content, attention, mood, affect, hallucinations, standardized screen for depression and anxiety
- HEENT: facies, ear canals, audiometry
- Cardiovascular
- Neurological: focal deficits, ambulation, tone
Alzheimer’s Disease

• 60-80% of dementia cases; after age 60 usually
• Clear evidence of decline in memory and learning and at least one other domain
• Typical presentation: Amnestic (↓ learning and recall)
• Atypical: non-amnestic (language or executive predominant)

• Steadily progressive, gradual decline w/o plateaus
• Prognosis 3-10 years after diagnosis
• Imaging: Possible global atrophy, small hippocampus

Hippocampal Atrophy in AD
Hippocampal Volumes

Vascular Dementia

- 2\textsuperscript{nd} or 3\textsuperscript{rd} leading cause; can occur with or w/o diagnosed stroke
- Clinical features c/w vascular etiology:
  - Onset temporally related to a vascular event
  - Prominent decline in complex attention, processing speed, executive function
  - Evidence of cerebrovascular disease
  - Small vessel strokes
    - Bilateral thalamic lesions OR
    - Multiple basal ganglia, thalamic and frontal WM lacunar stroke: need at least 2 in the BG area and at least 2 in the frontal white matter OR
    - “Extensive” periventricular WM lesions
- Classically presents with stepwise progression, but can be gradual as well
- Imaging: Cortical or subcortical changes in MRI
Dementia with Lewy Bodies

- 2nd or 3rd leading cause; more frequent in men, age of onset range 50-85y
- Insidious onset but progresses faster than AD
- Core diagnostic features:
  - Fluctuating cognition and attention/alertness, staring for long periods.
  - Recurrent well-formed detailed visual hallucinations
  - Parkinsonism onset within 1 year of cognitive decline.
- Suggestive diagnostic features:
  - REM sleep behavior disorder
  - Severe neuroleptic sensitivity
- Imaging may show global atrophy

Frontotemporal Dementia

- 1-5%, gradual onset, usually age <60
- Relative sparing of learning and memory
- Behavioral variant: ≥3 of the following behavioral symptoms:
  disinhibition, apathy, loss of empathy, perseverative or compulsive behavior, hyperorality and prominent decline in social cognition and/or executive abilities (often mistaken for mental health illness).
- Language variant: Prominent decline in language ability.
- Imaging: Frontal/temporal atrophy
Frontotemporal Dementia

Normal Pressure Hydrocephalus

- Gait difficulty: Frontal ataxia. “Magnetic gait” – feet appear stuck to the floor
- Cognition: psychomotor slowing, decreased attention & concentration, executive function, apathy
- Urinary urgency/incontinence
- May have hyperreflexia/spasticity
- MRI: ventriculomegaly without sulcal enlargement, loss of signal in Sylvian aqueduct
Normal Pressure Hydrocephalus

Due to brain atrophy

Due to obstructed hydrocephalus

Note enlarged subarachnoid spaces (arrow) proportionate to ventriculomegaly indicating brain atrophy (A), and the open high-convexity and medial subarachnoid spaces (arrow) despite enlarged ventricles (*) suggesting chronic occlusive hydrocephalus (B).

Hashimoto M, Cerebrospinal Fluid Res 2010

Substance-Induced Dementia

- Commonly alcohol, methamphetamine
- Neurocognitive impairments persisting beyond time of intoxication/withdrawal
- Deficits remain stable after a period of abstinence
Mixed Dementia

• Combination of etiologies.

Other Forms of Dementia-Like Symptoms

• Creutzfeldt-Jakob disease (prion disease)
• Parkinson’s disease
• Huntington's disease
• Chronic traumatic encephalopathy (CTE)
• HIV-associated dementia (HAD)
Case #1

• 85 year old retired Professor here for routine visit.
  • PMH: Crohn’s disease, anxiety, hypertension
  • Meds: lisinopril, aspirin, temazepam PRN.
  • Social hx: Lives with wife; occ ETOH, still driving to Grand Rounds
  • “Doc, I’m having trouble with my memory . . .”

• Exam was unremarkable except for obesity & mild hypertension
• Requested to stop temazepam and alcohol
• Sleep study

Cognitive Tests

• Single cognitive tests:
  • Accurate in distinguishing clinical Alzheimer-type dementia from normal cognition in older adults
  • Moderate accuracy in distinguishing mild clinical Alzheimer-type dementia from normal cognition
  • Tests are not adequate by themselves for making a clinical diagnosis.
  • Identifies who warrants further evaluation

Patient Cognitive Screen Tools: Mini-Cog

Mini-Cog

- Takes 2-4 min to administer
- Easy to memorize
- Does require paper and pencil
- Less effect of education level than w/ MMSE
- Similar sensitivity and specificity to MMSE
  - Minicog 76% sensitive, 89% specific
  - MMSE 79% sensitive, 88% specific
Patient Cognitive Screen Tools: General Practitioner Assessment of Cognition (GPCOG)

- 6 items
- 5-6 minutes to administer
- Sensitivity: 85%
- Specificity: 86%

Informant Screen Tools: GPCOG Informant

University of New South Wales as represented by the Dementia Collaborative Research Centre – Assessment and Better Care; Brodaty et al. J Am Geriatr Soc. 2002; 50:530-534.
Informant Screen Tools: AD8 Dementia

1. Remember, “Yes, a change” indicates that there has been a change in the last several years caused by cognitive decline.
2. No change
3. No change
4. No change
5. No change
6. No change
7. No change
8. No change

Based on clinical research findings from 995 individuals included in the development and validation samples, the following cut points are provided:
- 0 – 1: Normal cognition
- 2 or greater: Cognitive impairment is likely to be present

Administered to either the informant (preferable) or the patient, the AD8 has the following properties:
- Sensitivity > 84%
- Specificity > 85%
- Positive Predictive Value > 85%
- Negative Predictive Value > 70%
- Area under the Curve: 0.908; 95%CI: 0.868-0.929

Informant Screen Tools: Family Questionnaire

- Scoring:
  - Not at all = 0
  - Sometimes = 1
  - Frequently = 2
- Score ≥ 3 prompt further evaluation

Galvin JE et al. The AD8, a brief informant interview to detect dementia. Neurology 2005: 559-564.
Informant Screen Tools: Short Form of the Informant Questionnaire on Cognitive Decline in the Elderly (Short IQCODE)

Patient Cognitive Testing: Montreal Cognitive Assessment (MoCA)

- 30 question test, 10-12 minutes to administer
- 90% sensitivity; 90% specificity
- Measures executive function, can detect MCI
- Free for non-profit use
- Available in >35 languages
- MoCA Test Blind
- Education Level: 1 point is added to the test-taker's score if he or she has 12 years or less of formal education
MoCA-MIS as a Predictor of Conversion From Mild Cognitive Impairment to Alzheimer's Disease

- Individuals with MCI with a low MoCA score and a low memory index score (MoCA-MIS) are at greater risk of conversion to Alzheimer’s Disease
- Retrospective chart review
  - 90.5% of subjects MoCA > 20/30 and a MoCA-MIS > 7 at baseline converted to AD within the average follow-up period of 18 months (compared with 52.7% with MCI above the cutoffs on both scores).
Patient Cognitive Testing: St. Louis University Mental Status Examinations (SLUMS)


Patient Cognitive Testing: Rowland Universal Dementia Assessment Scale (RUDAS)

- 10-15 minutes to administer
- Sensitivity: 89%; Specificity: 98%
- Less affected by education, language, culture
- Texts praxis
- Not as well studied

Patient Cognitive Testing in a COVID Environment

- Not all clinical services are easily translated into a virtual environment.
- Many variables: internet connection speeds, camera quality, privacy, and access to a distraction-free environment.
Cognitive Testing: COVID

Table 1 Summary of Telem medicine Cognitive Measures

<table>
<thead>
<tr>
<th>Measure</th>
<th>Scores</th>
<th>Recommended Modality</th>
<th>Convergence With In-Person Assessments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brief Test of Adult Cogn*</td>
<td>Six subscale z-scores create composite score</td>
<td>Telephone or video</td>
<td>Convergent validity with neuropsychology assessment*</td>
</tr>
<tr>
<td>Cognitive Telephone Screening Instrument</td>
<td>Six weighted subset test scores</td>
<td>Telephone or video</td>
<td>Convergent validity with MMSE*</td>
</tr>
<tr>
<td>MMSE</td>
<td>0 to 30</td>
<td>Video</td>
<td>ICC = 0.91†</td>
</tr>
<tr>
<td>MoCA-Telehealth</td>
<td>0 to 30</td>
<td>Video</td>
<td>ICC = 0.93‡</td>
</tr>
<tr>
<td>MoCA-Telephone</td>
<td>0 to 22</td>
<td>Telephone or video</td>
<td>Comparable to TICS†</td>
</tr>
<tr>
<td>TICS</td>
<td>0 to 41</td>
<td>Telephone or video</td>
<td>Convergent validity with MMSE, with T-scores available for direct comparison*</td>
</tr>
</tbody>
</table>

Abbreviations: ICC, intraclass correlation coefficient; MMSE, Mini-Mental State Examination; MoCA, Montreal Cognitive Assessment; TICS, Telephone Interview for Cognitive Status.


Cognitive Testing: Telephone Interview for Cognitive Status (TICS)
Patient Cognitive Testing: Sweet 16

- Entirely verbal administration
- 2 minutes to administer
- 8 item orientation, 3 item repetition & recall, backwards digit span
- Total score is 16
- Score < 14 is abnormal
- Sensitivity of 80% and specificity of 72%
- Positive likelihood ratio = 2.7; Negative likelihood ratio = 0.28

Cognitive Test: MoCA Telephone Test

- Total score of 22.
- Score of ≥19 is normal.
Cognitive Test: MoCA 5 min Test

- Total score is 15.
- Score of ≥11 is normal.

Diagnostics: Laboratory

- Laboratory Tests
  - Complete blood cell (CBC)
  - Basic metabolic panel (BMP)
  - Liver function test (LFT)
  - Thyroid stimulating hormone (TSH)
  - Vitamin B12
  - ?RPR or MHA-TP
  - ?HIV
Diagnostics: Neuroimaging

• One structural scan (either CT or MRI) should be done at least once
  • Rule out intracranial causes (e.g., masses, subdural hematoma, etc...).
  • MRI: smaller strokes, cerebellar/posterior disease, hippocampal volume
  • MRI in early stage dementia might appear ‘normal’
  • Looking for localized atrophy, white matter change, microhemorrhages

• $^{18}$F-fluorodeoxyglucose (FDG) positron emission tomography (PET) scan [FDG PET]
  • Measures glucose uptake of neurons and glial cells
  • A normal FDG PET virtually excludes a diagnosis of neurodegenerative disease
  • AD: temporoparietal and posterior cingulate
  • FTD: anterior or asymmetric, or both
  • Medicare covers for the differential diagnosis of FTD and AD

Diagnostics: Amyloid PET

• Amyloid imaging
  • PET with ligands for Aβ allowing detection of in vivo amyloid plaques
    • Ligands: florbetapir, florbetaben, and flutemetamol ($^{18}$F compounds)
    • Ligands have very high accuracy for cortical amyloidosis
  • Not commonly used in clinical practice
  • Out-of-pocket costs can range upwards of $4000, typically not covered by insurance

• Diagnostic value is more exclusionary (i.e., a high negative predictive value)
  • Brain amyloidosis is necessary but not sufficient for diagnosis of Alzheimer’s
  • Up to 35% of cognitively healthy people older >60y have + amyloid PET scans*

Diagnostics: Neuropsychological Testing

- 3-4 hours of history and cognitive testing
- Much more information about the specific domains affected
- Can compare scores to age and education-adjusted norms
- Indicated in cases of:
  - early or mild symptom presentation
  - for differential diagnosis, determination of nature and severity of cognitive functioning
  - Development of appropriate treatment plan: identifies strengths and weaknesses for patients

Non-Pharmacologic Interventions

- Regular appointments for support
- Caregiver and patient support groups
- Exercise can improve physical function, mood, fall risk
  - 2x/week group exercise in studies
- 10 sessions of OT improved daily functioning and caregiver competence
- Weak evidence for cognitive rehab

Pharmacologic Interventions

- Acetylcholinesterase inhibitors (AChEIs)
- Memantine
- NO indications for the following:
  - Ginkgo biloba
  - Vitamins B, E, C, omega-3 fatty acids
  - Estrogen
  - NSAIDS

AChEIs: Benefits

- Modest benefits on cognition, behavior, ADL’s in AD, vascular, mixed, Lewy body, Parkinson’s (worsens FTD)
- May help delay SNF placement, may help with behavioral disturbance
- Approved for treatment of mild to moderate; might help later
- Shared decision making with family about whether these are helping
AChEi’s: Side Effects

- GI side effects in 20-30% (nausea, diarrhea, anorexia, mild weight loss); more common with galantamine
- Bradycardia: doubles risk of hospitalization for bradycardia; CI in sick sinus, baseline bradycardia; caution with beta blockers and CCB
- Evening dosing of donepezil can interfere with sleep.
- Discontinuation rate 40-60% by 18 weeks, mostly due to side effects.

Memantine

- NMDA receptor antagonist
- Modest benefits in moderate-severe disease
  - cognition in AD
  - Cognition and behavior in vascular dementia
- Evidence mixed for memantine + AChEi
- Main side effect is dizziness, some reports of increased agitation
- Shared decision-making

AChEI’s: Choice of Drug

- Donepezil has least GI side effects, easiest titration (5mg → 10 mg)
- Galantamine has most GI side effects, most extended titration
  - Contraindicated in end stage kidney and liver disease
- Rivastigmine is transdermal and has FDA indication for Parkinson’s dementia

<table>
<thead>
<tr>
<th>Patient characteristics</th>
<th>Caregiver experiences</th>
<th>Possible interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild dementia (MMSE 20-30)</td>
<td>Forgetfulness, word-finding problems, trouble with multistep instructions May have social withdrawal, depression, anxiety</td>
<td>Fearful about diagnosis and the future Helping with planning, remembering, finances</td>
</tr>
<tr>
<td>Moderate dementia (MMSE 10-20)</td>
<td>More language impairment, trouble with IADL’s, some ADL’s, driving, complex tasks May wander, leave stove on Beginning of paranoia, fearfulness</td>
<td>Increasing burden of care Frustration with deficits Increasing vigilance Poor sleep, depression, anxiety, resentment, grief</td>
</tr>
<tr>
<td>Severe dementia (&lt;10)</td>
<td>Physical manifestations: weakness, gait impairment, dysphagia Marked difficulty with ADL’s Paranoia, delusions, agitation</td>
<td>Increasing burden of care Severe fatigue Caregiver medical complications Guilt</td>
</tr>
</tbody>
</table>

### Functional Assessment Staging (FAST) Scale

<table>
<thead>
<tr>
<th>Severity</th>
<th>Stage</th>
<th>Assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult w/o cognitive decline</td>
<td>1</td>
<td>No difficulties, either subjectively or objectively.</td>
</tr>
<tr>
<td>Normal older adult w/ very mild memory loss</td>
<td>2</td>
<td>Complains of forgetting location of objects. Subjective word finding difficulties.</td>
</tr>
<tr>
<td>Early dementia</td>
<td>3</td>
<td>Decreased job function and organizational capacity.</td>
</tr>
<tr>
<td>Mild</td>
<td>4</td>
<td>Decreased ability to perform complex tasks.</td>
</tr>
<tr>
<td>Moderate</td>
<td>5</td>
<td>Requires assistance in choosing proper clothing.</td>
</tr>
<tr>
<td>Moderately severe</td>
<td>6A</td>
<td>Requires assist w/ dressing.</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Requires assist w/ bathing.</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Requires assist w/ toileting.</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Urinary incontinence.</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Fecal incontinence.</td>
</tr>
<tr>
<td>Severe</td>
<td>7A</td>
<td>Speech limited to ½ dozen different words or fewer.</td>
</tr>
<tr>
<td></td>
<td>B</td>
<td>Speech limited to single intelligible word.</td>
</tr>
<tr>
<td></td>
<td>C</td>
<td>Non-ambulatory.</td>
</tr>
<tr>
<td></td>
<td>D</td>
<td>Unable to sit up independently.</td>
</tr>
<tr>
<td></td>
<td>E</td>
<td>Lack of social smile.</td>
</tr>
<tr>
<td></td>
<td>F</td>
<td>Unable to hold head up.</td>
</tr>
</tbody>
</table>

### When to Refer to Hospice

- FAST stage 7a AND significant comorbidity OR disease related complication
- Dysphagia, febrile episode, pneumonia
- Significant infection preceding 12 months
- 10% weight loss in six months
- Recurrent hospitalizations
- Stage 3 or greater pressure sores, contractures
Summary

• Cognitive impairment is a geriatric syndrome with possibly many contributing factors.
• Utilize a standardized tool in screening and testing for cognitive impairment in patients.
• Utilize a standardized tool in obtaining corroborating history from informants.

Resources

• Alzheimer’s Association
  • 24/7 Helpline: (800) 272-3900
• Area Agencies on Aging (AAA)
  • https://www.n4a.org/
  • Local AAA
• Dementia Action Collaborative. Dementia Road Map: A guide for family and care partners.