Dementia in the Older Adult

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DEMENTIA IN THE OLDER ADULT

LEARNING OBJECTIVES
1. Define dementia and distinguish it from delirium and mild cognitive impairment
2. Describe the use of triggers to help identify dementia early
3. Review the steps and interpretation of an initial dementia evaluation

SIGNIFICANCE
Patients and caregivers frequently misinterpret early dementia symptoms as normal aging cognitive losses. Additionally healthcare providers may not recognize or misdiagnose these early signs. In the United States, approximately 6.8 million individuals suffer from dementia. Within this group, two thirds (4.5 million) suffer from the Alzheimer’s (AD) type of dementia. Prevalence of AD after age 60 doubles every 5 years and is estimated to be 30% or more in those aged 85+. The number of Americans with AD has more than doubled since 1980 and will continue to grow. By 2050, without new advancements in prevention, those with Alzheimer’s are predicted to range from 11.3-16 million. After diagnosis AD patients live an average of 8 – 10 years (some as long as 20 years). Vascular dementia (thought to be the second most common dementia) 15% to 25% of dementia cases, commonly affects individuals between the ages of 60-75.

Dementia has a major economic impact on society. Total costs are $100+ billion annually including costs for medical and long-term care, home care and lost productivity. 7 out of 10 people with Alzheimer’s disease live at home, where family and friends provide an estimated 75% of care, bearing a supreme burden of expense.

Financial aspects represent only one facet of the total burden in caring for an individual with dementia. Millions of caregivers and relatives coping with the individual’s irreversible progressive decline, experience pain and anguish, 50% suffering psychological distress, specifically depression. The real economic evaluation without factoring in quality of life issues underestimates society’s actual cost.

GENERAL OVERVIEW
Recognition of Dementia
Dementia is a decline of intellectual function from previous level of performance sufficient to impair daily activities in someone who is alert and cooperative. Dementia is best recognized in outpatient settings when medical conditions and medication use are stable. In this definition intellectual function denotes two or more cognitive domains. Impairment of daily activities is judged based upon ability to independently perform the same activities, such as managing personal affairs and living as independently as in the past. It can be difficult to judge whether functional decline is due to cognitive impairment, emotional problems, or physical disability; clinical judgment is critical for this decision. Dementia can be static or progressive, acute or chronic, reversible or irreversible. Dementia can occur at any age, but is much more common in the older adult.

Dementia should be distinguished from delirium, which is a disorder of attention with fluctuating alertness, and from mild cognitive impairment, which is cognitive impairment insufficient to impair daily activities.
Sometimes patients and/or their family may identify that there is memory loss or thinking problems. Often however, patients may not recognize their deficits or have difficulty remembering their symptoms. Family members may not have the opportunity or feel reluctant to express their concerns. Consequently, one of the best ways to recognize dementia in clinical practice early is to identify “triggers” that suggest cognitive impairment. Some examples of triggers are:

- Difficulty providing coherent history or following instructions during an examination
- Failing to keep appointments, take medications as directed, or depending on others
- Delirium or “confusion” from a medication, medical illness, or surgery

RECOMMENDATIONS
Initial Assessment of Dementia
When there is a memory complaint or a trigger is identified, an initial assessment should be performed to see if dementia is present or not.

1. Obtain a history from the patient and at least one other knowledgeable informant.
2. Determine onset and course of symptoms. What were first symptoms and when were they noticed? Did symptoms come on suddenly or develop insidiously? Have symptoms been stable, step-wise, progressive, or only consist of distinct episodes?
3. Perform screening mental status exam: document both abilities and deficits; consider memory, language, visuospatial ability, and behavior. Some tips for this testing are listed below.
4. Consider depression; sleep disorders and use of medications with CNS effects (all commonly cause cognitive disturbance). Medications are most frequently a reversible cause of dementia. If possible, discontinue CNS active medications. Remember that the older adult metabolizes many drugs differently and are particularly susceptible to medication side effects.
5. Assess vision and hearing; visual impairment and hearing loss are very common in the older adult, particularly in those 75+, and may explain poor cognitive test performance.
6. Look for medical illnesses; they can cause dementia or worsen an underlying dementia. Screening laboratory blood tests assist in this search.
7. Perform a careful neurological examination; most common causes of dementia are neurological diseases.
8. Assess whether there is any functional impairment, and determine whether it is due to intellectual impairment or can be fully explained by physical disability.

Based upon this examination,

- If there is depression or delirium, treat and then re-evaluate
- If there is no cognitive impairment or functional loss, reassure the patient, but re-evaluate in 6-12 months because patients and families may be more sensitive to changes than findings at a clinic visit.
- If there is either cognitive impairment or functional loss, but not both, refer for additional testing
- If there is cognitive impairment and functional loss, the patient has dementia and a full dementia evaluation is needed to determine the cause so that appropriate treatment can begin. The full evaluation requires screening blood tests, structural brain imaging and more detailed mental status assessment.
Tips for the Screening Mental Status Examination

There are few substitutes for directly checking memory. Ask the patient to remember 3 words such as barn, stove, and mailbox. Check immediate recall of the words to make sure that the patient was paying attention. Then after about 5 minutes ask the patient to recall the words. Provide reminders for any words not remembered to see if this improves recall (in the examples provided this might be “something found on a farm”, “something in a kitchen”, and “a kind of box”). Cognitively intact individuals should be able to recall at least 2 of 3 words after 5 minutes without a delay.

Visuospatial abilities can be easily checked: ask the patient to draw the face of a clock or intersecting pentagons. Assess the fluency of speech and whether interactions are appropriate while taking the medical history and performing the physical examination.

The Mini-Cog assessment instrument (see pages 69-70) is a combination of the two above tests. This assessment can be administered in 3 minutes, without special equipment and is not weighed by the level of education or language.

A Mini-Mental State Examination takes approximately 10 minutes and provides a quantitative measure. Generally, a score of 26 or below should be considered suspicious. It is important to recognize that the MMSE is heavily weighted toward orientation and language. Thus, it can miss other important deficits. There are other brief screening mental status tests, but some patients find such a formal assessment off-putting.

It also is possible to consider integrating mental status questions with history taking, for example, checking the patient’s knowledge about personal information already in your records (e.g. date of birth, address, telephone number, medications taken, etc.). If you know the correct responses, checking on the number, names, birthdates, and location of children can be done unobtrusively.

The steps in this initial assessment are summarized in the algorithm on page 65.

If dementia is identified, a diagnostic evaluation is needed to determine its cause and appropriate treatment. This diagnostic evaluation should include a neurological examination, detailed sensory and mental status examination, brain imaging, and screening laboratory tests. The most common causes of dementia in the older adult are:

1. Alzheimer’s disease
2. Mixed dementia (Alzheimer’s disease with stroke)
3. Parkinson’s disease with dementia
4. Dementia with Lewy bodies
5. Vascular dementia
6. Frontotemporal dementia

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Figure. Flow chart for recognition and initial assessment of Alzheimer’s disease and related dementias

Symptoms possibly indicating dementia ("triggers")

Conduct initial clinical assessment:
• Focused history
• Focused physical exam
• Functional status
• Mental status (consider confounding and comorbid conditions)

Deliurm or depression present?

Yes

Evaluate, treat, and reassess

Symptoms of possible dementia remain?

No

Reassure

Yes

Interpret results of functional and mental status tests (consider confounding factors)

1. Result normal: mental status normal, no functional losses

2. Result abnormal: mental status impaired, functional losses present

3. Result mixed:

3a. Mental status impaired, no functional losses

3b. Mental status normal, functional losses present

Refer for neurological or psychiatric and, as indicated, neuropsychological evaluation

Refer for neuropsychological and, as indicated, neurological or psychiatric evaluation

Evidence of dementia?

Yes

Conduct further clinical evaluation or refer for second opinion

Followup

No

Remaining concern?

Consider referral for second opinion or further clinical evaluation

Reassure (suggest followup in 6-12 months)

Evidence of dementia?

Yes

No

Key:
- Clinical State
- Decision Box
- Action Box

### DSM IV Diagnostic Criteria for Alzheimer’s Dementia

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<th>A.</th>
<th>The development of multiple cognitive deficits manifested by both:</th>
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<tr>
<td>1.</td>
<td>Memory impairment</td>
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<td>2.</td>
<td>One or more of the following cognitive disturbances:</td>
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<td>a. Aphasia (language disturbance)</td>
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<td>b. Apraxia (impaired ability to carry out motor activities despite intact motor function)</td>
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<td>c. Agnosia (failure to recognize or identify objects despite intact sensory function)</td>
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<td>d. Disturbances in executive functioning (planning, organizing, sequencing, abstraction)</td>
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| B. | The cognitive deficits represent as decline from previous functioning and cause significant impairment in social or occupational functioning |

| C. | The course is characterized by gradual onset and continuing decline |

| D. | The cognitive deficits are not due to other central nervous system, systemic, or substance-induced conditions that cause progressive deficits in memory and cognition |

| E. | Deficits do not occur exclusively during the course of a delirium |

| F. | The disturbance is not better accounted for by another Axis I disorder (e.g. major depressive disorder, schizophrenia) |
NINCDS-ADRDA CRITERIA FOR THE CLINICAL DIAGNOSIS OF ALZHEIMER'S DISEASE

I. The criteria for the clinical diagnosis of PROBABLE Alzheimer's disease include:
- dementia established by clinical examination and documented by the Mini-Mental Test, Blessed Dementia Scale, or some similar examination, and confirmed by neuropsychological tests;
- deficits in two or more areas of cognition;
- progressive worsening of memory and other cognitive functions;
- no disturbance of consciousness;
- onset between ages 40 and 90, most often after age 65;
- absence of systemic disorders or other brain diseases that in and of themselves could account for the progressive deficits in memory and cognition.

II. The diagnosis of PROBABLE Alzheimer's disease is supported by:
- progressive deterioration of specific cognitive functions, such as language (aphasia), motor skills (apraxia), and perception (agnosia);
- impaired activities of daily living and altered patterns of behavior;
- family history of similar disorders, particularly if confirmed neuropathologically;
- laboratory results of: normal lumbar puncture as evaluated by standard techniques, normal pattern or nonspecific changes in EEG, such as increased slow-wave activity, and evidence of cerebral atrophy on CT with progression documented by serial observation.

III. Other clinical features consistent with the diagnosis of PROBABLE Alzheimer's disease, after exclusion of causes of dementia other than Alzheimer's disease, include:
- plateaus in the course of progression of the illness;
- associated symptoms of depression, insomnia, incontinence, delusions, illusions, hallucinations, catastrophic verbal, emotional, or physical outbursts, sexual disorders, and weight loss;
- other neurologic abnormalities in some patients, especially with more advanced disease and including motor signs, such as increased muscle tone, myoclonus, or gait disorder; seizures in advanced disease; and CT normal for age.

IV. Features that make the diagnosis of PROBABLE Alzheimer's disease uncertain or unlikely include:
- sudden, apoplectic onset;
- focal neurologic findings, such as hemiparesis, sensory loss, visual field deficits, and incoordination early in the course of the illness;
- seizures or gait disturbances at the onset or very early in the course of the illness.

V. Clinical diagnosis of POSSIBLE Alzheimer's disease: may be made on the basis of the dementia syndrome, in the absence of other neurologic, psychiatric, or systemic disorders sufficient to cause dementia, and in the presence of variations in the onset, in the presentation, or in the clinical course; may be made in the presence of a second systemic or brain disorder sufficient to produce dementia, which is not considered to be the cause of the dementia; and should be used in research studies when a single, gradually progressive, severe cognitive deficit is identified in the absence of other identifiable causes.

VI. Criteria for diagnosis of DEFINITE Alzheimer's disease are: the clinical criteria for probable Alzheimer's disease and histopathologic evidence obtained from a biopsy or autopsy.

VII. Classification of Alzheimer's disease for research purposes should specify features that may differentiate subtypes of the disorder, such as: familial occurrence; onset before age of 65; presence of trisomy-21; and coexistence of other relevant conditions, such as Parkinson's disease.

CLOCK DRAW TEST

Patient name
Patient ID 
Date __/__/__

1) Inside the circle, please draw the hours of a clock as they normally appear

2) Place the hands of the clock to represent the time: “ten minutes after eleven o’clock”

The Mini-Cog Assessment Instrument for Dementia

The Mini-Cog assessment instrument combines an uncued 3-item recall test with a clock-drawing test (CDT). The Mini-Cog can be administered in about 3 minutes, requires no special equipment, and is relatively uninfluenced by level of education or language variations.

Administration
The test is administered as follows:
1. Instruct the patient to listen carefully to and remember 3 unrelated words and then to repeat the words. *(The words should be nouns and one syllable, such as ball, flag and ship.)*
2. Instruct the patient to draw the face of a clock, either on a blank sheet of paper or on a sheet with the clock circle already draw on the page. After the patient puts the numbers on the clock face, ask him or her to draw the hands of the clock to read a specific time, such as 11:20. These instructions can be repeated, but no additional instructions should be given. Give the patient as much time as needed to complete the task. The CDT serves as the recall distractor.
3. Ask the patient to repeat the 3 previously presented word.

Scoring
Give 1 point for each recalled word after the CDT distractor. Score 1-3.
A score of 0 indicates positive screen for dementia.
A score of 1 or 2 with an abnormal CDT indicates positive screen for dementia.
A score of 1 or 2 with a normal CDT indicates negative screen for dementia.
A score of 3 indicates negative screen for dementia.

The CDT is considered normal if all numbers are present in the correct sequence and position, and the hands readable display the requested time.
Dementia References

References and Articles:


Geldmacher DS, ed/ Dementia update: overview from the first annual dementia congress. 


Resources:
