The Misdiagnosis of Cognitive Disorders

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When to suspect cognitive disorder: patient “poor historian” (eg, unable to recall timing of events); poor adherence; difficulty with instructions; missed appointments; change in personality; changes in instrumental activities of daily living (IADLs; eg, money, medications, driving); decline in function; age most significant risk factor for dementia

Prevalence and risk for dementia: prevalence higher in women than in men (may be explained by longer life span of women; some evidence suggests that women may have increased risk); other risk factors — low level of education; low IQ; head injuries; medication; ethnicities — risk lowest among whites (followed by blacks, then Latinos); risk among American Indians probably similar to that among Latinos

Costs of dementia: presence of dementia increases cost of treating other diseases; poor adherence leads to hospitalization and longer hospital stays; long-term care high in cost; caregivers — miss work; physical and mental health may decline

Study on diagnosis and treatment of Alzheimer disease (AD): clinicians identified AD or dementia in only ~50% of patients with AD; among identified patients, <50% received treatment

Causes of death: AD third or sixth most common cause of death; study in Australia showed that coronary artery disease leading cause of death in men and women, followed by lung cancer in men and AD in women; frequency of deaths due to AD increasing

Evaluation of decline in cognitive function: patient history — tool for determining onset; patient and family members should be questioned to elicit relevant information (related to, eg, car accidents, overdosing or confusing medications, writing bad checks); physical examination — results typically normal in early AD; signs suggestive of stroke, Parkinson disease, or other gait abnormalities may focus diagnosis; may include laboratory testing; imaging studies — not required if neurologic examination normal, but many primary care physicians lack time to perform thorough neurologic examination; neuropsychological testing — useful for patients who show signs of decline but score ≥ 24 on Mini-Mental State Examination (MMSE)

Criteria for dementia from Diagnostic and Statistical Manual of Mental Disorders (Fourth Edition; DSM-IV): significant decline in cognitive function interferes with work or social function; impaired memory and impairment in one other domain (eg, language, movement, recognition, planning); no criteria refer to onset, progression, or reversibility

Neurocognitive disorders (NCDs) in DSM-5: dementia, delirium, and amnestic disorders referred to as NCDs in DSM-IV; mild NCD — does not significantly interfere with function (individual can live independently); major NCD — interferes with function (individual cannot live independently); delirium — features include inattention (not always obvious) and fluctuations; commonly occurs in individuals with dementia, but not AD or dementia; common NCDs — amnestic disorder; NCD due to AD; NCD with Lewy bodies; vascular NCD; frontal-temporal NCD

Staging: mild — patient able to manage IADLs; moderate — patient not managing IADLs; severe — patient not managing ADLs

Initial evaluation: determine whether patient has problem; identify psychiatric causes (eg, posttraumatic stress disorder); ask about driving errors (and patient’s awareness of errors) and who handles finances; performance on testing can be affected by depression, anger, poor motivation to participate, high education or IQ; and deficits in hearing or vision

Case example 1: diagnosis AD; man who worked as magician complained of memory loss and no longer able to perform magic tricks (eg, remembering where every card in deck was); MMSE score 30 (maximum); patient diagnosed with depression and progressed over next 3 yr to classic AD (with severe memory and language problems)

Lewy body disease: features include hallucinations (eg, intruders in house); patients with Lewy body disease may have Parkinson disease, so antipsychotic medications can be problematic; hallucinations should be treated only until no longer frightening to patient

Case example 2: diagnosis frontal lobe dementia; patient presented with drastic change in personality (eg, making poor financial decisions, alienating friends, switching political parties); cognitive impairment mild; neuropsychological testing — normal results may not be normal in patients with high baseline results

Case example 3: diagnosis delirium with features of dementia; woman 66 yr of age referred with diagnosis of AD; woman had dystaric speech and unsteady gait (atypical of early AD) with

Educational Objectives

The goal of this program is to improve diagnosis of cognitive disorders and assessment of decision-making capacity. After hearing and assimilating this program, the clinician will be better able to:

1. Identify risk factors for cognitive disorders.
2. Review criteria for dementia and neurocognitive disorders based on Diagnostic and Statistical Manual of Mental Disorders (Fourth and Fifth Editions).
3. Describe presenting features of common neurocognitive disorders.
4. Evaluate patients based on the four standards of capacity.
5. Recognize high-risk characteristics for capacity evaluation.

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no recent changes in medication; medical history complicated (eg, thyroid disease, Crohn disease, bladder cancer, anemia); patient was hospitalized in 2002 for urinary tract infection (UTI) and experienced hallucinations; patient misdiagnosed with Lewy body disease; patient diagnosed with vascular disease (not vascular dementia); medication history included lithium, thyroid medications, antidepressants, antipsychotics, anxiolytics, sleep medications, and cholinesterase inhibitor; woman exhibited moderate cognitive impairment and failed digit-span task (result suggests delirium until proven otherwise); results of electroencephalography encephalopathic, consistent with delirium; differential diagnosis included depression (patient had bipolar disorder); management — after consulting psychiatrist, medications stopped within 3 mo; patient recovered and lived independently until she died ≥4 yr later from unrelated cancer

**Suggested Readings**


**Assessing Decision-Making Capacity**

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**Studies:** 1) experts looked at ≥150 inpatients and determined ≥31% lacked decision-making capacity; medical team identified only 1 in 4 of these patients; results suggest that clinicians fail to identify 30% to 50% of patients who lack decision-making capacity; 2) another study looked at reliability of physician’s judgment of capacity; physicians reached consensus (80% of 45 patients) (some patients normal, some patients had mild Alzheimer disease [AD]); all physicians agreed that normal patients had capacity, but only 50% of physicians agreed on whether patients with AD had capacity

**Assessing poor decision-making capacity:** patient frequently changes mind with no documented reasoning; patient refuses standard of care; consider vascular diagnoses (eg, underlying vascular dementia) and level of education; determine whether patient received sufficient information to make decision; consider patient’s ability to care for self at home (if not, determine who else is at home); assess patient’s understanding of condition and health; evaluate psychological burden (eg, mood disorder); consider delirium; determine whether choices patient made appropriate, even if not considered ideal

**Competency vs capacity:** competency — requires clear and convincing evidence or high standard of proof; after determining patient lacks competency, establish power of attorney or guardianship; capacity — used to determine whether patient can accept or refuse treatment; can be determined by any physician (voluntarily and free of coercion); measure is task specific (ie, some patients may be able to participate in some medical decisions but not others)

**Standards for “capacity”:** must be met for patient to be able to make medical decision; choice — patient must be able to make choice and consistently maintain choice over time; patient has right to make unreasonable decisions; understanding — patient must be able to demonstrate ability to understand all relevant information (eg, nature of condition, purpose of treatment, risks and benefits of treatment, risks and benefits of alternative approaches); appreciation — patient must be able to appreciate situation, likely consequences, and effect on quality of life (QOL); standards subjective and based on patient’s perception of effect on QOL; reasoning — patient must be able to logically manipulate information related or unrelated to treatment

**Indications for formal capacity assessment:** change in mental status; patient refuses standard of care (accepting standard of care does not mean patient has capacity); patient consents quickly to invasive or risky treatment; patient refuses treatment but does not say why; refusal of treatment seems irrational; patient reverses choice without reasoning

**Gender disparity in capacity:** study found that assessment of decision-making capacity required twice as commonly among men, compared with women; in men, lack of capacity more commonly caused by neurologic issue or substance use (in women, caused by endocrine or mood disorder or psychiatric illness); men more likely to leave against medical advice

**Risk factors for impaired decision making:** altered mental status; extreme age; fear or discomfort in health-care setting; multiple sensory limitations (eg, vision and hearing)

**Neurocognitive dysfunction:** patients with moderate dementia shown to have decisional capacity; individuals with severe dementia universally lack capacity; capacity for decision making lacking in ≈50% of residents in nursing homes; study of patients with Parkinson disease found that impairment in decision-making capacity associated with mild cognitive impairment increases as dementia progresses

**Low education and health literacy:** proficient health literacy observed in 12% of adults; lower health literacy associated with higher uncertainty and decisional regret

**Language barriers:** study found full documentation of informed consent for intervention in 53% of charts for English-speaking patients (28% of charts for patients with limited proficiency in speaking English)

**Intelectual developmental disorder or mental retardation:** study found appreciation of relevance of treatment and ability to weigh risks and benefits in 50% of individuals with mild retardation and 18% of those with moderate retardation; right to refuse involvement understood by >50% of individuals with mild mental retardation (50% with moderate mental retardation), but <50% in each group understood they could withdraw from treatment; patients must be constantly reminded that they can make different choices; patient-centered team approach — involve power of attorney early (especially for high-risk decisions); involve patients (eg, discuss QOL)

**Psychiatric disorders:** reasoning most significant barrier; study found impairment in ≥1 element of capacity in 50% of hospitalized patients with schizophrenia or symptomatic bipolar disorder and 25% of hospitalized patients with depression; less severe depression not likely to impair capacity

**Assessment of capacity:** directed clinical interview; formal assessment tools; history from family; physical assessment; laboratory testing and neuroimaging studies; mental status examination

**Formal assessment tools:** *Aid to Capacity Evaluation* — simple; takes 5 min; validated in large trial; *Capacity to Consent to Treatment Instrument* — used in many studies; uses clinical vignettes rather than information from actual patient’s case; *MacArthur Competence Assessment Tool* — gold standard; assessment takes 20 to 30 min; used by many psychologists and psychiatrists; useful for routine cases

**Mini-Mental State Examination (MMSE):** study found that score <21 suggests lack of capacity (however, patients with moderate dementia with score of 18-20 can participate in some decision making); other studies found MMSE score to be poor predictor; MMSE should never be used alone to assess capacity

**Evaluation of capacity by primary care physician (PCP):** research has shown that PCP’s judgment of capacity equivalent to that of psychiatrist (especially when using good standard as tool); *reasons to involve psychiatrist* — help in deciphering why patient
does not want treatment; lack of trust for providers involved in care; patient feels rushed or overwhelmed when making decision; underlying psychopathology interfering with decision making; involvement of legal proceedings; difficulty of case

Addressing barriers: explore anxiety (difficult to assess capacity in patients with anxiety or underlying psychopathology); provide patient with pictures and written information in terms and language patient can understand; repeat information on multiple visits (allows physician to see whether patient keeps decisions consistent over time); include other family members in conversation

Surrogate decision makers for patients without capacity: 1) directed (living will); 2) delegated (health-care proxy); 3) default (state surrogacy laws); 4) displaced (guardianship); selection of health-care proxy — study showed that patients with significant cognitive impairment capable of appointing health-care proxy; residents in nursing homes named consistent choice (twice in one sitting) 80% of time and were consistent on 3 occasions per week 55% of time; patients who lack capacity to consent to research may be capable of appointing research proxy; lack of health-care proxy — increases risk for poor outcomes; appointment of guardian time consuming and stressful

Clinical pearls: legally and ethically favor patient’s autonomy (right to self-determination); adults allowed to make own decisions even if someone else appears to make better decisions for them; stringency of tests applied varies directly with seriousness of consequences of decision; documentation of 4 standards most important, regardless of tool used; if discussing placement issues, patient should be assessed as close to time of discharge as possible; keep in mind that capacity is dynamic measure; ensure patient has received all information needed to make decision; even individuals with severe psychological conditions can think logically and maintain capacity; clarify capacity-related issue (eg, below-knee amputation); evaluate patient at 2 separate times before determining lack of capacity; unless decision emergent, all effort should be made to reverse cause of incapacity prior to proceeding; if there is any uncertainty, clinician should err on side of capacity

Suggested Readings


Acknowledgments

Dr. Odenheimer and Dr. Crow spoke at the 15th Geriatric Medicine Update for Primary Care Providers, presented by the University of Oklahoma College of Medicine and the Irwin H. Brown Office of Continuing Professional Development, and held May 2, 2016, in Midwest City, OK. For information about upcoming CME activities presented by the University of Oklahoma College of Medicine, please visit https://ouhsc.cloud-cme.com/aph.aspx. The Audio Digest Foundation thanks the speakers and the sponsors for their cooperation in the production of this program.

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1. Which of the following factors is the most significant predictor of dementia?
   (A) Female sex
   (B) Advanced age
   (C) Low education level
   (D) Positive family history

2. Risk for dementia is lowest among which of the following ethnic groups?
   (A) Whites
   (B) Blacks
   (C) Latinos
   (D) American Indians

3. Which of the following statements about evaluating patients for declines in cognitive function is true?
   (A) Results of physical examination typically normal in patients with early Alzheimer disease (AD)
   (B) All patients should undergo imaging studies
   (C) All patients should undergo neuropsychological testing
   (D) Dementia can be ruled out in patients with Mini-Mental State Examination scores of 30

4. According to the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, which of the following factors is a criterion for dementia?
   (A) Sudden onset of memory loss
   (B) Progression of symptoms over time
   (C) Difficulty with executive planning
   (D) Mini-Mental State Examination score <18

5. Hallucinations are a feature of which of the following neurocognitive disorders (NCDs)?
   (A) NCD with Lewy bodies
   (B) Amnestic disorder
   (C) Vascular NCD
   (D) Frontotemporal NCD

6. All the following statements about legal “competency” are true, EXCEPT:
   (A) Requires clear and convincing evidence or a high standard of proof
   (B) Is task specific
   (C) Lack thereof must be determined before establishing power of attorney or guardianship

7. Compared with that in women, lack of capacity in men is more likely to be caused by:
   (A) Mood disorder
   (B) Endocrine disorder
   (C) Psychiatric illness
   (D) Substance use

8. The capacity for decision making is lacking in _______ of residents of nursing homes.
   (A) ≈10%
   (B) ≈25%
   (C) ≈50%
   (D) ≈75%

9. Which of the following standards of capacity is the most significant barrier for patients with psychiatric disorders?
   (A) Reasoning ability
   (B) Appreciation of consequences
   (C) Understanding of relevant treatment information
   (D) Ability to maintain choice over time

10. Which of the following tools is the gold standard for assessing decision-making capacity?
    (A) Aid to Capacity Evaluation
    (B) MacArthur Competence Assessment Tool
    (C) Capacity to Consent to Treatment Instrument
    (D) Mini-Mental State Examination

Answers to Audio Digest Family Medicine Volume 65, Issue 10: 1-A, 2-B, 3-D, 4-B, 5-C, 6-B, 7-A, 8-C, 9-D, 10-C