

Assessing Cognitive Disorders in General Practice

Aiming for a feasible approach given
the constraints of primary care

Adrian Visoiu, MD

Disclosure Statement

- none

Should you screen for cognitive impairment?

- USPSTF (2014) DOESN'T RECOMMEND SCREENING ADULTS OVER 65:
 - Current evidence is insufficient to “assess the balance of benefits and harms of screening”
 - interventions (medications, counseling caregivers) may have small effect but “magnitude of clinically relevant benefit is uncertain”
- COGNITIVE ASSESSMENT IS REQUIRED FOR MEDICARE ANNUAL WELLNESS VISIT:
 - but only “by direct observation, with due consideration of information obtained” from patient or family
 - AWV does not require use of a screening test
- DIAGNOSTIC EVALUATION DIFFERS FROM SCREENING:
 - assessment is appropriate when patient, family or clinician have concerns about cognition, function, behavior

Patients' reasons for avoiding cognitive assessment

- Iatrogenic harm:
 - labeling stigma, exposure of disability
 - impact on family and relationships
 - loss of occupation/income, driving
 - loss of ability to enter into contracts/execute advance directives
 - difficulty purchasing life insurance
- Higher priority competing agenda

Clinicians' reasons not to assess cognitive status

- Inadequate time/competing agenda
- Loaded issues:
 - driving
 - accepting help
 - moving out of home
 - family conflicts
 - exposing and labeling
- Lack of effective treatment

Potential benefits of assessing cognition

- Detect treatable medical, pharmacologic or psychiatric disorders manifesting with cognitive or behavioral signs
- Modify approach to care, because with cognitive disorder, the following are diminished:
 - adherence to medications and lifestyle recommendations
 - ability to navigate health care system
 - life expectancy, especially quality-adjusted LE, with reduced value of screening and prevention

Benefits beyond medical

- Protect patient from
 - entering into harmful contractual/legal agreements
 - driving-related harms
- Alert family to potential for
 - medication errors
 - financial errors/victimization
 - wandering
 - injury in home
- Assist in meeting needs for services/assistance, more supportive living arrangements
- Encourage completion of POA's, advance directives
- Assist with applications for disability/other documentation

What questions might be addressed in cognitive assessment?

- Does this patient have a cognitive disorder?
- If patient has a disorder, what stage is it?
- What disease(s) may be causing this disorder?
- What more evaluation is needed/wanted?
- What interventions might be offered?
- What needs might be addressed?

Does patient have cognitive disorder?

- Does patient/informant report new cognitive difficulties?
- Does patient perform below expectations on cognitive screening test?
- If Yes to both, patient has a cognitive disorder
- If no to both, this may be normal aging, or Subjective Cognitive Disorder

Is the cognitive disorder dementia or MCI?

- Dementia if significant **decline in one or more cognitive domains has resulted in loss of independence in everyday activities** (and decline is not due to delirium or another mental disorder)
- Mild Cognitive Impairment if patient **reports and demonstrates slight decline in one or more domains, but is able to perform ADL's independently**, albeit with more effort, time or stress

More on MCI

- Performance on cognitive testing ~ 1.0 - 1.5 SD's below age-adjusted norms on limited number of tests in battery
- Heterogeneous as to:
 - Etiology, includes early (pre-dementia) neurodegenerative disorder
 - Sub-types: amnesic vs. other domains
 - Prognosis: recovery, stability, progression (in about 10-15%/yr)

More on Subjective Cognitive Disorder

When insightful patient reports concerns, but tests normally and functions independently,

- Do not be dismissive or overly reassuring
- Evaluate for potential medical, medication-related and/or psychosocial causes
- Offer reassessment in, say, 6 months
- Offer referral for neuropsychological testing
(esp. in high IQ, high education individuals)

What is normal cognitive change in aging?

- Difficulties:
 - multi-tasking (complex tasks, divided attention)
 - thinking of words and names
- Normal test performance for age may entail mild slowing of :
 - word retrieval
 - processing speed
 - encoding new information
- Manages IADL's independently

What disease is causing cognitive disorder?

- Easier to be confident about presence of cognitive disorder than about its cause; in best hands, diagnostic error rate (versus autopsy) is 15-20%
- Until there is effective, disease-specific treatment, management of neurodegenerative disease usually does not depend on specific diagnosis; DLB and NPH may be exceptions
- Prognosis usually does not vary significantly by diagnosis; prion disease is an exception
- Mixed causes, especially Alzheimer disease and vascular dementia, are common, especially with increasing age

Prerequisites for productive cognitive assessment:

- Adequate time, apart from competing agenda
- Knowledgeable informant:
 - Patient with MCI may be able to provide reliable history
 - If patient has impaired insight and is defensive, may need to interview informant apart from patient
- Clear goals of visit:
 - Diagnosis versus assistance with management?
 - assessment to help determine capacity, disability, eligibility for services? (forms to complete?)

Valuable history elements

- Time and circumstances of onset
- Earliest affected domain(s): memory, language, executive, social
- Trajectory of deficits since onset
- Capacity for activities of daily living
- Gait, balance or movement disorder
- Behavioral or thought disorder

Cognitive domains

- Learning and memory
- Language
- Complex attention
- Perceptual-motor function
- Executive function
- Social cognition

Types of memory

- Working memory: retaining information while engaged in task (repeating digit span)
- Recent memory: recall after distracted from task (delayed word recall)
- Long term memory:
 - Autobiographical/episodic
 - Semantic (fund of knowledge)
 - Procedural (physical skills)

Signs of recent memory impairment

- Repetitive questions, especially multiple in short time frame
- Forgetting recent events and conversations
- Misplacing belongings
- Forgetting appointments and/or starting to use calendar, sticky notes
- Forgetting to take/having taken medications

Signs of language impairment

- Word-finding difficulty, not limited to occasional obscure words
- Use of circumlocution and generic or filler words and phrases
- Word substitutions, nonsensical words
- Reduced fluency, reduced production
- Difficulty understanding instructions

Dimensions of executive function

- Adequate executive infrastructure:
 - attention: select, sustain, redirect
 - working memory
- Ability to plan, organize, execute complex tasks
- Ability to adjust plans in response to feedback, setbacks
- Intact insight and judgment

Activities which depend on intact executive function

- Job function: sense of proficiency, satisfactory performance appraisals
- Household tasks: shopping, cooking, paying bills
- Hobbies, crafts, games, home repairs
- Technology: TV remote, smart phone, computer
- Decision-making: processes relevant information, arrives at logical conclusions
- Insight and judgment: aware of deficits, accepts help, recognizes and avoids risks

Considerations re cognitive testing

- May be experienced as intrusive, threatening, embarrassing: attempt to normalize
- Consider potential confounders:
 - Non-native speaker
 - Low level of education
 - Life-long learning disorder
 - Sensory deficits: vision, hearing
 - Motor deficits: tremor, incoordination
 - Performance anxiety
- Adjust scores for age, level of education and/or vocational achievement
- If feasible, have family observe

Choosing a cognitive test

- Choice of test to use depends on:
 - Time available
 - Tolerance of patient
 - Anticipated performance of patient
 - Tests patient has taken previously (to compare performance)
- Tests vary in:
 - Time required to administer
 - Performance characteristics
 - Domains emphasized

Commonly used cognitive tests

- Mini-Cog: 3 word recall and clock-drawing: quick, performance similar to MMSE
- Mini-Mental Status Examination: proprietary, not sensitive to mild impairment (“low ceiling”) or executive dysfunction
- Montreal Cognitive Assessment (MOCA): more time-consuming but more sensitive than MMSE to mild impairment, executive dysfunction

Assess function: instrumental activities of daily living

- Medication adherence
- Financial management
- Use of tools, equipment, technology
- Shopping, cooking, housekeeping, laundry
- Driving (skills, judgment, recall of route):
tickets, accidents, self-imposed restrictions,
becoming lost

Assess function: basic activities of daily living

- Bathing
- Dressing (selecting and putting on clothes)
- Grooming
- Using toilet
- Walking
- Transferring
- Feeding

Problematic behaviors

- Apathy (may be mistaken for depression)
- Agitation and aggressiveness
- Refusing care
- Sleep-wake cycle dysregulation
- Psychosis (may drive disruptive behaviors)
- Compulsive behaviors
- Disinhibition
- Loss of empathy

Exam: en passant observation

- ADL's: grooming, selection of clothes, hygiene
- Episodic memory: turns to family for answers, omits relevant history, inaccurate report of current status (the status quo ante)
- Recent memory: repeats statements or questions
- Working memory: loses train of thought, forgets directions for task
- Attention: perseverates, becomes distracted
- Visual-perceptual: lost returning to exam room from bathroom
- Language: word-finding difficulties with circumlocution and vagueness, paraphasic errors, reduced fluency
- Insight and judgment: does not understand purpose of visit, minimizes and rationalizes deficits; does not recognize or accept need for assistance
- Executive: arrives late, does not reason logically
- Behavioral: irritable, suspicious, disinhibited, disengaged

Examination

- Evidence of (self-)neglect: old bandages, onychogryphosis
- Vascular: carotid bruits, atrial fibrillation
- Focal neurologic signs
- Movement disorder: posture, gait, tremor, rigidity, myoclonus
- Autonomic signs: orthostatic hypotension or symptoms

Diagnostic testing

- Basic blood tests: CBC, CMP, B12, TSH/FT4, drug levels
- Structural brain imaging if:
 - young patient
 - atypical presentation
 - focal neurologic signs
 - NPH triad
 - acute change
- Functional imaging to support specific diagnosis (AD vs FTD, Lewy body):
 - SPECT: regional tracer uptake (perfusion)
 - PET: regional FDG uptake (metabolism)

Testing primarily used in research

- Brain amyloid and tau labeling scans
- CSF amyloid beta 42 and tau protein
- Genetic testing:
 - APOE4
 - Early onset autosomal dominant genes:
 - amyloid precursor protein
 - presenilin 1 and 2

Diseases that cause cognitive decline

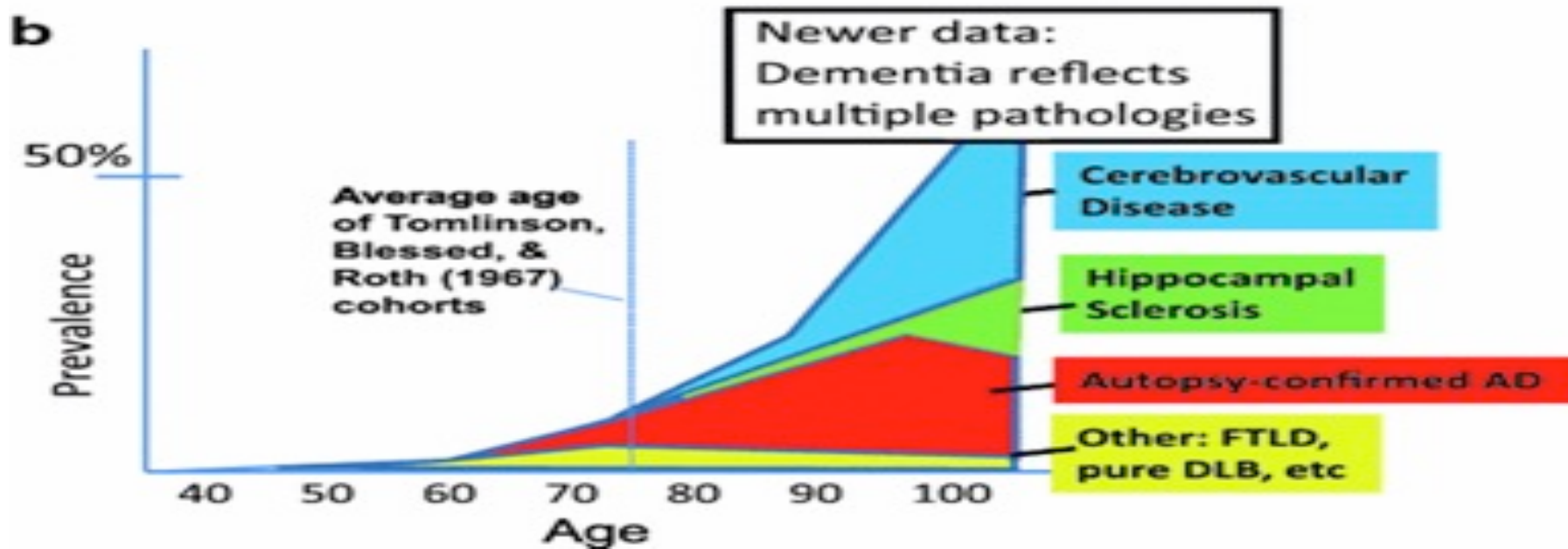
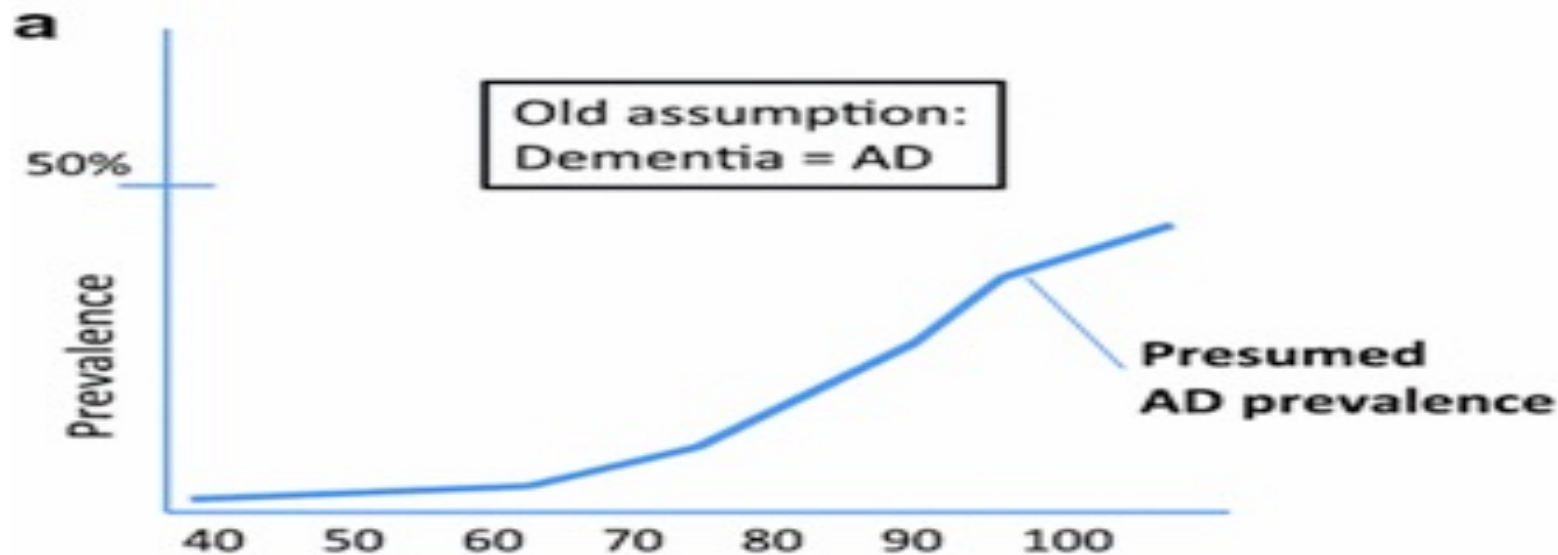
- Alzheimer's disease: 75% of dementia
- Cerebrovascular disease: 10-20% of dementia: cortical or lacunar infarcts, small vessel ischemic disease, amyloid angiopathy
- Synucleinopathies: Lewy body, Parkinson's
- Frontotemporal degeneration: behavioral, linguistic variants

Less common cause of major NCD

- Normal pressure hydrocephalus
- Progressive supranuclear palsy
- Corticobasal degeneration
- Huntington's disease
- Korsakoff encephalopathy
- Chronic traumatic encephalopathy
- Paraneoplastic limbic encephalitis
- Hashimoto's encephalopathy
- Prion disease (kuru, Creutzfeldt-Jakob)

Mixed disorders

- Vascular and AD: combination more common than either alone
- Synucleinopathy and AD
- Synucleinopathy spectrum: PD, LB, MSA
- FTD and motor neuron disease
- Single exclusive causes of cognitive decline become less common with age, are uncommon in old-old



Alzheimer's disease (AD) is most likely underlying cause if

- delayed recall was prominent early deficit confirmed on testing
- other domains become affected over time
- course is insidious
- there are no focal neurologic or parkinsonian signs; motor signs develop late in course
- there is no apparent medical cause

Atypical presentations of AD

- Primary Progressive Aphasia is likely if
 - word-finding and sentence completion difficulties were earliest deficits
 - language is prominent impairment on exam
- Posterior Cortical Atrophy is most likely if:
 - visual complaints without ophthalmic disease were prominent early
- in both PPA and PCA, subsequent involvement of other domains produces AD-like syndrome

Latest addition

BRAIN

A JOURNAL OF NEUROLOGY

Issues

Subject ▾

More Content ▾

Submit ▾

Purchase

About ▾

All Brain



Volume 142, Issue 6

June 2019

Article Contents

Abstract

EDITOR'S CHOICE

Limbic-predominant age-related TDP-43 encephalopathy (LATE): consensus working group report FREE

Peter T Nelson ✉, Dennis W Dickson, John Q Trojanowski, Clifford R Jack, Patricia A Boyle, Konstantinos Arfanakis, Rosa Rademakers, Irina Alafuzoff, Johannes Attems, Carol Brayne ... [Show more](#)

Brain, Volume 142, Issue 6, June 2019, Pages 1503–1527, <https://doi.org/10.1093/brain/a-wz099>

Published: 30 April 2019 **Article history** ▾

LATE-Neuropathological change

- present in over 20% in age > 80 years
- associated with dementia of the Alzheimer's type which is a clinical diagnosis
- no molecule-specific biomarker for LATE (yet)

Questions you may be asked

What is difference between dementia and AD?

- Dementia is a syndrome (“umbrella term”) defined as loss of ability to perform work or necessary tasks of daily life independently
- Dementia may be caused by many diseases/disorders, including AD
- AD is the most common disease causing dementia
- Pre-clinical AD may precede dementia by many years—so absence of dementia, even of MCI, does not preclude presence of AD

What is the prognosis?

- Prognosis for dementia is highly variable
- Life expectancy for AD is 3-20 years from onset (often challenging to date), mean 8-10 years
- LE with dementia is ~50% LE of same age without dementia
- Competing morbidities may govern LE, especially in older age
- Comorbid conditions, especially heart disease and diabetes, may accelerate progression of dementia
- Progression is gradual; rapid or acute decline suggests supervening co-morbid disorder, often with delirium

What will happen as disease progresses?

- Function is lost in order from most demanding to simplest tasks
 - IADL's are lost before ADL's, with complex IADL's (finances) before simpler tasks (housekeeping)
 - Basic ADL's are lost beginning with bathing and dressing, through toileting and transferring, to walking and feeding.
- New behavioral problems may emerge...and current behaviors may subside

What stage is this?

- Simple intuitive staging system:
 - mild/early: dependent for some IADL's
 - moderate: dependent for most IADL's, some BADL's
 - advanced: dependent for most BADL's
 - end-stage: totally dependent
- More complex staging system: 7 stage Global Deterioration Scale or Functional Assessment Staging, with multiple sub-steps in stages 6 and 7
- Basis for assigning stage is capacity for specific tasks or activities

What about the children?

- In AD, chief heritable risk predictors are:
 - age at onset in proband (greater risk with onset <65 years old, very little excess risk with onset > 85)
 - number of affected first degree relatives
 - APOE e4 allele: risk 2-3x greater with one copy, 8-12x greater with 2 copies
 - Rare mutations in amyloid processing genes associated with early onset autosomal dominant

What can be done to slow progression?

- No proven interventions, but can recommend:
 - regular exercise (walking)
 - cognitive activities (puzzles, games, new learning)
 - social engagement
 - Mediterranean diet
 - control of vascular risk factors

Should specialist should see patient?

- Neuropsychologist if:
 - uncertainty whether cognitive concerns are significant
 - anticipate need to document capacity, other legal issues
- Neurologist if:
 - young patient
 - atypical presentation or course
 - parkinsonian features
- Neurosurgeon if ventriculomegaly and NPH triad
- Psychiatrist if intractable behavioral problems
- Social worker for issues related to support, services, living arrangements, and caregiver burden

What about cognition-enhancing medications?

- No proof of efficacy for any other than cholinesterase inhibitors and memantine
- Efficacy of FDA-approved drugs is statistically significant but marginally clinically meaningful
- Cholinesterase inhibitor side effects are not infrequent: GI, sleep, bradyarrhythmias, etc

What about psychotic symptoms?

- Do they disturb patient? Fear, agitation
- Do they cause risky behaviors? Aggression, escape, summoning help
- Try non-pharmacologic interventions first, such as distraction, reassurance
- First step : SSRIs (citalopram, escitalopram)
- If resistant, try low dose second generation antipsychotic, with special caution in suspected Lewy body dementia

What about sleep disturbance?

- Try non-pharmacologic approaches, including exercise, limited napping, limited caffeine, etc
- If not successful, and medication needed, avoid benzodiazepines and medications with high anticholinergic activity, consider melatonin, trazodone, mirtazapine

What about driving?

- Early dementia may be compatible with adequate driving safety; ask family to ride as passengers
- Take responsibility if you intervene; exculpate family
- Offer alternatives of ceasing to drive at own initiative or being re-tested
- If questionably safe patient will not stop or be tested, explain you are obliged to request PennDOT revoke license
- Alert family that they may need to take steps to prevent driving if driving must stop

Finally: assessing cognition

- Can be done in primary care
- Presents unique challenges
- Requires a dedicated visit and a reliable informant
- May warrant follow-up at 6-12 month interval to increase clarity, certainty
- Warrants developing referral network to tap special expertise

CMS to the rescue: G0505

Care planning services to individuals with cognitive impairment

- Good reimbursement
- Time consuming; 45-60 min visit
- Need preset template for OV including required evaluation, staging (using standardized instruments) and Care plan

CMS to the rescue: G0505

Care planning services to individuals with cognitive impairment

- Cognition-focused evaluation
- Medical decision making of moderate or high complexity
- Functional assessment, including decision-making capacity
- Use of standardized instruments to stage dementia
- Medication reconciliation and review for high-risk medications
- Evaluation for neuropsychiatric and behavioral symptoms, including depression and including use of standardized instruments
- Evaluation of safety (for example, home safety), including driving
- Identification of caregiver(s), caregiver knowledge, caregiver needs, social supports and the willingness of caregiver to take on caregiving tasks
- Advance care planning and addressing palliative care needs
- Creation of a care plan, including initial plans to address any neuropsychiatric symptoms and referral to community resources as needed (for example, adult day programs and support groups); the care plan must be shared with the patient and/or caregiver along at the time of initial education and support