The Diagnostic Puzzle of Alzheimer’s Disease

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Lecture Outline

• Introduction
  – Challenges associated with dementia diagnosis
• Diagnostic Approach to Dementia
  – History and exam, cognitive assessment, labs & imaging
• Act on Alzheimer’s Tools
• Conclusion, Q&A

State of Alzheimer’s Detection in 2015

• Cognitive impairment unrecognized in 27-81% of affected patients in primary care
  • Cordell Alz and Dementia 2013
• Diagnostic Sensitivity among PCPs
  – Mild dementia (0.41) vs. moderate dementia (0.59) vs. severe dementia (0.95)
  • Borson Int J Geriatr Psychiatry 2006
• Diagnosis of Alzheimer’s Disease delayed by months to years
Diagnostic Challenges

- **Cultural**
  - Ageism and defining “normal” aging
  - Fear of delivering bad news
  - Associated stigma
  - Implications for physician/patient relationship

- **Medical**
  - Lack of definitive test
  - Limited time
  - Many patients unaware, do not self-identify problems
  - Heterogeneous baseline
  - Fear of giving wrong diagnosis
  - Skepticism, lack of knowledge re: treatment options/efficacy
Rational for **Timely Detection**

1) Improve quality of life  
2) Identify reversible causes  
3) Maximize treatment response  
4) Prevent diagnosis during crises  
5) Identify strategies for medication adherence  
6) Promote independence, lifestyle changes  
7) Reduce cost of care by decreasing hospitalizations, ER visits, and nursing home placement

**AD Diagnosis**

- **History**
  - Baseline premorbid cognitive state  
  - First symptom quality and onset  
  - Address memory, language, visuospatial, and executive function  
  - Evaluate AD risk factors  
  - Assess functional impairments  
  - Supplemental history from family/friend

- **Neurological Exam**
  - Basic mental status  
  - Cranial nerve, motor, coordination, and gait testing to address pyramidal, extrapyramidal, or cerebellar tract findings

**Practice Tips**

- Unfortunately, most of us do not recognize signs and symptoms until they are quite pronounced  
  - Attribution error: “What do you expect? She is 80 years old.”  
  - Subjective impressions FAIL to detect dementia in early stages

- **Clinical interview**
  - Let patient answer questions without help  
  - Remember: Social skills remain intact until late stage dementia
  - Easy to be fooled by a sense of humor, reliance on old memories, or quiet/affable demeanor
Practice Tips

• Red flags
  – Repetition (not normal in 7-10 min conversation)
  – Tangential, circumstantial responses
  – Losing track of conversation
  – Frequently deferring to family
  – Unexplained weight loss or “failure to thrive”
  – Inattentive to appearance
  – Unable to adapt to stressful circumstances (hospitalization)

• Family observations:
  – ANY instances whatsoever of getting lost while driving, trouble following a recipe, asking same questions repeatedly, mistakes paying bills
  – Take these concerns seriously: by the time family report problems, symptoms have typically been present for quite a while and are getting worse

• Raise your expectation of older adults:
  – If this patient was alone on a domestic flight across the country and the trip required a layover with a gate change, would he/she be able to manage that kind of mental task on his/her own?
    • If answer is “not likely” for a patient of any age: RED FLAG

Bedside Mental Status Exam

• Intact older adult should be able to:
  – Describe 2 current events in some detail
  – Describe what happened on 9/11, New Orleans disaster
  – Name the current President and 2 immediate predecessors
  – Describe medical history and names of some medications
AD Work-Up

- **Laboratory Studies**
  - CBC, BMP, LFTs, TSH, B12, Ca2+

- **Neuroimaging**
  - Brain MRI/CT

Introduction to ACT on Alzheimer’s

ACT on Alzheimer’s

statewide

60+ organizations

300+ individuals

Collaborative

volunteer driven

**IMPACTS OF ALZHEIMER’S**

$\text{BUDGETARY}$

$\text{SOCIAL}$

$\text{PERSONAL}$
**Goals of ACT**

- Identify & invest in promising approaches
- Increase detection & improve care
- Raise awareness & reduce stigma
- Sustain caregivers
- Equip communities

**ACT Tool Kit**

- Consensus-based, best practice standards for Alzheimer’s care
- Tools and resources for:
  - Primary care providers
  - Care coordinators
  - Community agencies
  - Patients and families
**ACT Tools**

**Tools and Resources**

- **Dementia Capable Communities Toolkit**: This four-phase process guides a community in becoming dementia-friendly. Visit site of toolkit action steps at: https://www.youtube.com/ACTinAZ
  - User: Community leaders, organizations, and individuals

- **Clinical Provider Practice Tool**: This easy-to-use tool guides physicians in developing cognitive impairment and guiding decisions for screening, diagnosis, and disease management.
  - User: Health care settings

- **Electronic Medical Record Decision Support Tool**: This template helps providers implement within the health record a standardized approach to dementia care, including screening, diagnosis, and treatment management.
  - User: Health care settings

- **Managing Dementia Across the Continuum**: This tool includes a protocol for treating, managing, and supporting persons with dementia; beyond the early stages of the disease.
  - User: Medical and nursing directors in long-term care settings and other professionals involved in dementia care

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**ACT Tools**

- **After a Diagnosis**: This resource has action steps, tips, and resources for persons diagnosed with Alzheimer’s and their caregivers and is a helpful resource to share and discuss after a diagnosis is made.
  - User: Health care settings and community-based providers serving persons with the disease and caregivers

- **Dementia Trainings for Direct Care Staff**: This comprehensive list of dementia trainings resources provides options for organizations seeking best practices in preparing their direct care staff.
  - User: Direct care settings

- **Care Coordination and Community-based Provider Practice Tool**: This tool helps ensure that a care plan is guided by the goals, needs, and preferences of the person with Alzheimer’s, family, and caregivers.
  - User: Health care settings and community-based provider settings

- **Dementia Curriculum**: A comprehensive dementia curriculum including disease description and progression, demography, cognitive assessment, and societal impact.
  - User: Education, practicing professionals, and health care students

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**IMPROVE CARE**

**You Can ACT Now to Improve Care**

- Early disease detection
- Use of recommended practice tools
- Continuing education about the disease

- Visit www.actonalz.org
Cognitive Screening

Is Screening Good Medicine?

2014 US Preventative Services Task Force (USPSTF)

- **Purpose:** Systematically review the diagnostic accuracy of brief cognitive screening instruments and the benefits/harms of medication and non-medication interventions for early cognitive impairment.
- **Limitation:** Limited studies in persons with dementia other than AD and sparse reporting of important health outcomes.
- **Conclusion:** Brief instruments to screen for cognitive impairment can adequately detect dementia, but there is no empirical evidence that screening improves decision making.

Provider Perspective

“Avoiding detection of a serious and life changing medical condition just because there is no cure or ‘ideal’ medication therapy seems, at worst, incredibly unethical, and, at best, just bad medicine.”

George Schoephoerster, MD
Family Practice Physician
Keep in Mind: Base Rates

- 1 in 9 people 65+ (11%)
- 1 in 3 people 85+ (32%)

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percent with Alzheimer’s</th>
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<tbody>
<tr>
<td>&lt; 65</td>
<td>4%</td>
</tr>
<tr>
<td>65 - 74</td>
<td>13%</td>
</tr>
<tr>
<td>75 - 84</td>
<td>44%</td>
</tr>
<tr>
<td>85 +</td>
<td>38%</td>
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If we don’t diagnose, does it still exist?

Clinical Provider Practice Tool

- Easy button workflow for:
  1. Screening
  2. Dementia work-up
  3. Treatment / care

www.actonalz.org/provider-practice-tools
Cognitive Screening

- Initial considerations
  - Timing
    - Routine, annual check-ups or only when patients become obviously symptomatic?
      - Best practice recommendation: Annual screening at 65+
      - Screening meant to uncover insidious disease
      - Doesn't add much if you can already detect impairment in basic conversation
  - Research
    - Which tools are best?
    - Balance b/w time and sensitivity/specificity

Cognitive Screening

- Clinic flow
  - Who will administer screen?
    - Rooming nurses, social workers, allied health professionals, MDs
  - What happens when patients fail?

Screening Measures

- Wide range of options
  - Mini-Cog (MC)
  - Mini-Mental State Exam (MMSE)
  - St. Louis University Mental Status Exam (SLUMS)
  - Montreal Cognitive Assessment (MoCA)
- All but MMSE free, in public domain, and online
Screening Administration

- Try not to:
  - Use the word “test”
  - Instead: “We’re going to do something next that requires some concentration”
  - Allow patient to give up prematurely or skip questions
  - Deviate from standardized instructions
  - Offer multiple choice answers
  - Be soft on scoring
  - Score ranges already padded for normal errors
  - Deduct points where necessary – be strict

Mini-Cog

Contents
- Verbal Recall (3 points)
- Clock Draw (2 points)

Advantages
- Quick (2-3 min)
- Easy
- High yield (executive fx, memory, visuospatial)

Subject asked to recall 3 words
  Subject asked to draw clock, set hands to 10 past 11
  +3
  +2

Mini-Cog

1. GET THE PATIENT’S ATTENTION: TERN B.R.: “I am going to say three words that I want you to remember now and later. The words are:Leader, Season, Table. Please say them for me now”.
2. Pencil and paper from the Mini-Cog Kit. WCIC to write on back paper and cover the memory(ies). Have the patient a pencil/paper.
3. Ask the patient “What were the three words I asked you to remember?” (S.L. 33)
4. Ask the patient “What was the time you set the hands on?” (S.L. 10 past 11)
5. Ask the patient “What were the three words?”

Score:
- 0 points = normal recall
- 1 point = slight impairment
- 2 points = moderate impairment
- 3 points = severe impairment

Score 0-2 points = normal recall
Score 3-5 points = slight impairment
Score 6-8 points = moderate impairment
Score 9-11 points = severe impairment

Score = 0 indicates normal recall
Mini-Cog

Pass
• ≥ 4

Fail
• 3 or less


Mini-Cog Research

• Performance unaffected by education or language
  • Borson Int J Geriat Psychiatry 2000

• Sensitivity and specificity similar to MMSE (76% vs. 79%; 89% vs. 88%)
  • Borson JAGS 2003

• Does not disrupt workflow & increases rate of diagnosis in primary care
  • Borson JAGM 2007

• Failure associated with inability to fill pillbox
  • Anderson et al Am Soc Consult Pharmacists 2008
Mini-Cog: Sam

http://youtu.be/CRQEighdb0w

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SLUMS

MoCA

Pass
• > 26

Fail
• 25 or less


Screening Tool Selection

Montreal Cognitive Assessment (MoCA)
• Sensitivity: 90% for MCI, 100% for dementia
• Specificity: 87%

St. Louis University Mental Status (SLUMS)
• Sensitivity: 92% for MCI, 100% for dementia
• Specificity: 81%

Mini-Mental Status Exam (MMSE)
• Sensitivity: 18% for MCI, 78% for dementia
• Specificity: 100%

Dementia Diagnoses

- Alzheimer’s disease: 60-80%  
  - Includes mixed AD + VD
- Lewy Body Dementia: 10-25%  
  - Parkinson spectrum
- Vascular Dementia: 6-10%  
  - Stroke related
- Frontotemporal Dementia: 2-5%  
  - Personality or language disturbance
Delivering the Diagnosis

**General guidelines:**
- Include a family member in the visit if at all possible
- Talk directly to the person with dementia
- Speak at a slower, relaxed pace using plain words
  - Try not to fill the time with words — less is more
- Explain why tests were ordered and what results mean
- Ask at least 3 times whether the patient / family has any questions
- Acknowledge how overwhelming the information feels; provide empathy, support, reassurance

**Focus on wellness, healthy living, and optimizing function**
- Sleep
- Exercise
- Social and mental stimulation
- Nutrition and hydration
- Stress reduction
- Increase structure at home

**Connect patient/family to community resources**
- Care for both patient and caregiver
- Examples: Senior linkage line, Alzheimer’s Association

**Discuss follow-up**
- Want to see patient and family member at regular intervals (e.g., q 6 months) for proactive care
- Discuss involvement of care coordinator

**Provide written summary of visit**

Zarit AK and Carpenter BD. Patient-Centered Communication During the Disclosure of a Dementia Diagnosis. AM J ALZHEIMERS DIS OTHER DEMEN 2010; 25: 913
Common Questions

- How is Alzheimer’s different from dementia?
- Is there any treatment? What can we do?
- How fast is this going to progress?
- How often do we see you?
- What’s next?

Delivering the Diagnosis: Sam

https://www.youtube.com/watch?v=vy2ZC5SZSL8

Dementia Care and Treatment
The care for patients with Alzheimer’s has very little to do with pharmacology and much to do with psychosocial interventions.

- Involve care coordinator
- Connect patient and family to experts in the community
  - Example: Alzheimer’s Association
  - Refer every time, at any stage of disease, and for every kind of dementia
  - Stress this is part of their treatment plan and you expect to hear about their progress at next visit
ACT EMR Tools

- Use EMR to automate and standardize:
  - Screening
  - Work-up
  - After visit summary with dementia education
  - Orders and referrals
  - Community supports

www.actonalz.org/provider-practice-tools
Consults and Referrals

Pharmacological Treatment

Top 5 Resources
Top 5 Resources

• Promoting wellness and function

Top 5 Resources

• Addressing behavioral challenges

Top 5 Resources

• One stop shop for caregiver support:

Alzheimer’s Association
800.272.3900 | www.alz.org/mnnd

Care Consultation
Support Groups (Memory Club)
24/7 Helpline
Top 5 Resources

- Intensive Caregiver Training:
  
  Family Memory Care
  800.272.3900

Top 5 Resources

- Polypharmacy:
  
  PharmD Consult