Dementia: Guidelines for Screening, Diagnosis and Treatment

Clifford Singer, MD
Chief, Division of Geriatric Mental Health and Neuropsychiatry
Acadia Hospital and Eastern Maine Medical Center
Bangor, Maine

UNE GEC Dementia Conference
Objectives

• Provide a brief overview of clinical practice guidelines for screening
• Review general clinical aspects of diagnostic assessment and treatment
Maine is Getting Old

Figure 1-2
Maine's older population is projected to grow quickly between 2008 and 2020

Predicted change in the number of persons (in thousands)

-20.3 +11.7 +45.3 +79.9 +3.0
0-14 15-24 25-34 35-44 45-54 55-64 65-74 75-84 85+

Predicted change as a percent of the 2008 population

-12% +5% +8% +25% +77%
0-14 15-24 25-34 35-44 45-54 55-64 65-74 75-84 85+

Who Will Provide Care?

Figure 3-1
Maine's elderly dependency ratio
The Number of Persons of Working Age (20-64) for Each Person Age 65+

Although Maine’s elderly dependency ratio held fairly steady from 1970 to 2005, it is projected to be in steady decline through 2020. While Maine had an estimated number of 4.2 working age (20-64) persons in 2005 for each person age 65-or-above, the ratio is projected to decline to just 2.7 working age persons in 2020 for each person age 65-or-above.

Diagnosis and Treatment:
Goals of Maine’s State Plan

- Coordinate care across settings to improve recognition and management
- Expand PCMH Community Care Team model to provide coordinated care
- Promote screening within Primary Care
- Promote CME in diagnosis and treatment guidelines
Clinical Guideline:
“Comprehensive Roadmap” by John Campbell, MD

• Provides an overview of:
  – Screening and assessment of cognition and functional status
  – Differential diagnosis of dementia
  – Treatment of cognitive decline
  – Assessment and treatment of neuropsychiatric symptoms
  – General dementia care issues: driving, home safety, end of life care, caregiver support
Guidelines for Screening: American Geriatric Society

• Routine cognitive screening not recommended beyond questions about:
  – Short term memory
  – Function
    • Money management, driving, medication management, safety in the home
AGS Guidelines for Diagnosis

www.americangeriatrics.org

• If problem is suspected based on screening question, or patient/family complaint:
  – Assess cognition with validated instrument
  – Document cognitive domains affected
  – Document functional impairment
  – Document time course and progression
  – R/O delirium and depression
Alzheimer’s Assoc. Recommendations
Cordell CB et al. Alz Assoc 2013; 1-10

• Alz. Assoc. advisory group does recommend routine screening
  – Incorporate into Medicare Annual Wellness Visit:
    • Affordable Care Act provides for Medicare reimbursement for screening of depression and dementia at the AWV
  – CI missed in 27-81% of visits
  – Structured tools improve detection
    • (83% vs. 59%) Borson et al. 2006
Advisory Group Recommendations
Cordell CB et al. Alz Assoc 2013; 1-10

• 2-step process:
  – Screen with either Mini-Cog or GPCOG at AWV
  – Positive screen or clinical suspicion: reschedule for more evaluation with MoCA or SLUMS, plus labs, depression screen, neurologic exam or refer to dementia expert (geriatrician, geriatric psychiatrist, neurologist, neuropsychologist)
Elements of History

- What has changed?
  - Functional status
  - Cognition
  - Behavior

- Gradual vs. abrupt onset?

- Progressive vs. stable?

- Hx of EtOH, depression, CVA/TIA, TBI, HTN, DM, excessive sleepiness?
Functional Status

• ADLs
  – Dressing, bathing, toileting, hygiene, mobility and balance, motor skills

• IADLs
  – Finances, med management, driving, cooking, tools, hobbies
Cognition

- Attention and concentration
- Speech and language
- Orientation, registration and recall
- Visuospatial
- Calculations
- Judgment, insight, reasoning
What’s Normal?

- What’s his name?
- What’s that called?
- Where did I park?
- Where did I put those?
- Did I tell you this already? Yes.
- Did I ask this already? Yes.
- Did you tell me this already? Yes.
What’s Not Normal

• Getting lost in a familiar place.
• Not being able to follow a directions/recipe
• Telling the same story more than twice without asking.
• Asking the same question more than twice.
• Losing interest in conversation, leaving home, hygiene, other people
Cognitive Exam

• Use standardized scale if possible:
  – Fast: Mini-Cog, Six-Item Screen, GPCOG
  – More sensitive and diagnostic: MMSE, MoCA, SLUMS

• No scale handy?
  – Good: Orientation, 3-word recall, clock
  – Better: add verbal fluency task, serial 3s or digit span and family/caregiver interview
Mini-Cog

- 3-word recall and clock draw test
- Pass/fail or 7-point scoring
- 2-4 minutes administration
- Validated across cultures
- Suitable for screening in primary care but not for diagnostic evaluation
Mini-Cog Algorithm

Figure 1. The Mini-Cog scoring algorithm. The Mini-Cog uses a three-item recall test for memory and the intuitive clock-drawing test. The latter serves as an “informative distractor,” helping to clarify scores when the memory recall score is intermediate.

Reference
MOCA
(www.mocatest.org)
10-15 minutes
Educational bias
Sensitive enough for MCI
Diagnostic value
Available in many languages
In the public domain
MoCA vs. MMSE

• MoCA (≤ 26)
  – Sensitivity
    • MCI=90%
    • Mild AD=100%
  – Specificity
    • Mild AD=87%

• MMSE (≤ 26)
  – Sensitivity
    • MCI=18%
    • Mild AD=78%
  – Specificity
    • Mild AD=100%
VAMC
SLUMS Examination

Name: ___________________________  Age: __________

Is patient alert? __________________ Level of education ____________

1. What day of the week is it?

2. What is the year?

3. What state are we in?

4. Please remember these five objects. I will ask you what they are later.
   Apple  Pen  Tie  House  Car

5. You have $100 and you go to the store and buy a dozen apples for $3 and a tricycle for $20.
   How much did you spend?
   How much do you have left?

6. Please name as many animals as you can in one minute.
   0-4 animals  5-9 animals  10-14 animals  15+ animals

7. What were the five objects I asked you to remember? I point for each one correct.

8. I am going to give you a series of numbers and I would like you to give them to me backwards.
   For example, if I say 42, you would say 24.
   4 87 649 8537

9. This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o’clock.
   Hour markers okay
   Time correct

10. Please place an X in the triangle.

Which of the above figures is largest?

11. I am going to tell you a story. Please listen carefully because afterwards, I’m going to ask you some questions about it.
   Jill was a very successful stockbroker. She made a lot of money on the stock market. She then met Jack, a devastatingly handsome man. She married him and had three children. They lived in Chicago. She then stopped work and stayed at home to bring up her children. When they were teenagers, she went back to work. She and Jack lived happily ever after.
   What was the female’s name?
   What work did she do?
   When did she go back to work?
   What state did she live in?

TOTAL SCORE

SCORING

<table>
<thead>
<tr>
<th>High School Education</th>
<th>Less than High School Education</th>
</tr>
</thead>
<tbody>
<tr>
<td>27-30</td>
<td>Normal</td>
</tr>
<tr>
<td>21-26</td>
<td>MND (Mild Neurocognitive Disorder)</td>
</tr>
<tr>
<td>1-20</td>
<td>Dementia</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Six Item Screen

• Time orientation (day, month, year) and 3-item recall
• Average administration time: 1 minute
• May not be as sens/spec as MMSE
• Add CDT and animal or letter fluency for an excellent ad hoc exam
Functional Status

• ADLs
• IADLs (instrumental or cognitive ADLs)
• Descriptive instruments
  – General Practitioner Assessment of Cognition (CPCOG)
  – Clinical Dementia Rating Scale
  – Functional Assessment Scale
CPCOG (www.gpcog.com.au)
Brodaty H et al. JAGS 2002; 50:3:530-534

- Patient assessment of memory, date and CDT (2-5 minutes)
- Family interview regarding function and symptoms (1-3 minutes)
- Use of direct assessment and both patient and caregiver interview of ADLs is unique and increases sensitivity
GPCOG Screening Test

Step 1: Patient Examination

Name and Address for subsequent recall test

1. "I am going to give you a name and address. After I have said it, I want you to repeat it. Remember this name and address because I am going to ask you to tell it to me again in a few minutes: John Brown, 42 West Street, Kensington." (Allow a maximum of 4 attempts).

Time Orientation

2. What is the date? (exact only)

Clock Drawing – use blank page

3. Please mark in all the numbers to indicate the hours of a clock (correct spacing required)

4. Please mark in hands to show 10 minutes past eleven o’clock (11.10)

Information

5. Can you tell me something that happened in the news recently? (Recently = in the last week. If a general answer is given, eg “war”, “lot of rain”, ask for details. Only specific answer scores).

Recall

6. What was the name and address I asked you to remember

   John
   Brown
   42
   West (St)
   Kensington

(To get a total score, add the number of items answered correctly
Total correct (score out of 9)  9

Informant Interview

Informant’s name: ________________________________

Informant’s relationship to patient, i.e. informant is the patient’s: ________________________________

These six questions ask how the patient is compared to when s/he was well, say 5 – 10 years ago

Compared to a few years ago:

- Does the patient have more trouble remembering things that have happened recently than s/he used to?  Yes  No  Don’t Know  N/A
- Does he or she have more trouble recalling conversations a few days later?  Yes  No  Don’t Know  N/A
- When speaking, does the patient have more difficulty in finding the right word or tend to use the wrong words more often?  Yes  No  Don’t Know  N/A
- Is the patient less able to manage money and financial affairs (e.g. paying bills, budgeting)?  Yes  No  Don’t Know  N/A
- Is the patient less able to manage his or her medication independently?  Yes  No  Don’t Know  N/A
- Does the patient need more assistance with transport (either private or public)?  Yes  No  Don’t Know  N/A

(To get a total score, add the number of items answered ‘no’, ‘don’t know’ or ‘N/A’
Total score (out of 6)  0
<table>
<thead>
<tr>
<th>Impairment</th>
<th>0</th>
<th>0.5</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Memory</strong></td>
<td>None</td>
<td>Questionable</td>
<td>Mild</td>
<td>Moderate</td>
<td>Severe</td>
</tr>
<tr>
<td>No memory loss or slight inconsistent forgetfulness</td>
<td>Consistent slight forgetfulness; partial recollection of events; &quot;benign&quot; forgetfulness</td>
<td>Moderate memory loss; more marked for recent events; deficit interferes with everyday activities</td>
<td>Severe memory loss; only highly learned material retained; new material rapidly lost</td>
<td>Severe memory loss; only fragments remain</td>
<td></td>
</tr>
<tr>
<td><strong>Orientation</strong></td>
<td>Fully oriented</td>
<td>Fully oriented except for slight difficulty with time relationships</td>
<td>Moderate difficulty with time relationships; oriented for place at examination, may have geographic disorientation elsewhere</td>
<td>Severe difficulty with time relationships; usually disoriented to time, often to place</td>
<td>Oriented to person only</td>
</tr>
<tr>
<td><strong>Judgment &amp; Problem Solving</strong></td>
<td>Solves everyday problems &amp; handles business &amp; financial affairs well; judgment good in relation to past performance</td>
<td>Slight impairment in solving problems, similarities, and differences</td>
<td>Moderate difficulty in handling problems, similarities, and differences; social judgment usually maintained</td>
<td>Severely impaired in handling problems, similarities, and differences; social judgment usually impaired</td>
<td>Unable to make judgments or solve problems</td>
</tr>
<tr>
<td><strong>Community Affairs</strong></td>
<td>Independent function at usual level in job, shopping, volunteer and social groups</td>
<td>Slight impairment in these activities</td>
<td>Unable to function independently at these activities although may still be engaged in some; appears normal to casual inspection</td>
<td>Appears well enough to be taken to functions outside a family home</td>
<td>Appears too ill to be taken to functions outside a family home</td>
</tr>
<tr>
<td><strong>Home and Hobbies</strong></td>
<td>Life at home, hobbies, and intellectual interests well maintained</td>
<td>Life at home, hobbies, and intellectual interests slightly impaired</td>
<td>Mild but definite impairment of function at home; more difficult chores abandoned; more complicated hobbies and interests abandoned</td>
<td>Only simple chores preserved; very restricted interests, poorly maintained</td>
<td>No significant function in home</td>
</tr>
<tr>
<td><strong>Personal Care</strong></td>
<td>Fully capable of self-care</td>
<td>Needs prompting</td>
<td>Requires assistance in dressing, hygiene, keeping of personal effects</td>
<td>Requires much help with personal care; frequent incontinence</td>
<td></td>
</tr>
</tbody>
</table>

Score only as decline from previous usual level due to cognitive loss, not impairment due to other factors.

# Functional Activities Questionnaire

## Administration

Ask informant to rate patient’s ability using the following scoring system:
- Dependent = 3
- Requires assistance = 2
- Has difficulty but does by self = 1
- Normal = 0
- Never did [the activity] but could do now = 0
- Never did and would have difficulty now = 1

<table>
<thead>
<tr>
<th>Activity</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Writing checks, paying bills, balancing checkbook</td>
<td></td>
</tr>
<tr>
<td>Assembling tax records, business affairs, or papers</td>
<td></td>
</tr>
<tr>
<td>Shopping alone for clothes, household necessities, or groceries</td>
<td></td>
</tr>
<tr>
<td>Playing a game of skill, working on a hobby</td>
<td></td>
</tr>
<tr>
<td>Heating water, making a cup of coffee, turning off stove after use</td>
<td></td>
</tr>
<tr>
<td>Preparing a balanced meal</td>
<td></td>
</tr>
<tr>
<td>Keeping track of current events</td>
<td></td>
</tr>
<tr>
<td>Paying attention to, understanding, discussing TV, book, magazine</td>
<td></td>
</tr>
<tr>
<td>Remembering appointments, family occasions, holidays, medications</td>
<td></td>
</tr>
<tr>
<td>Traveling out of neighborhood, driving, arranging to take buses</td>
<td></td>
</tr>
</tbody>
</table>

**TOTAL SCORE:**

## Evaluation

Sum scores (range 0-30). Cutpoint of 9 (dependent in 3 or more activities) is recommended to indicate impaired function and possible cognitive impairment.
Neuropsychological Testing

• Referral to neuropsychologist for sensitive documentation of cortical function (“deeper biopsy”).
• NOT diagnostic, although provides important cues to diagnosis and treatment.
• Not appropriate for acutely ill, >85 or more impaired patients.
Occupational Therapy

• Underutilized
• Provide functional assessment of IADLs
• Important both for diagnosis, treatment and safety planning.
• Driving? OT or driving school instructor.
Geriatric Depression Scale (GDS)  
Scoring Instructions

**Instructions:** Score 1 point for each bolded answer. A score of 5 or more suggests depression.

1. Are you basically satisfied with your life? yes  no
2. Have you dropped many of your activities and interests? yes  no
3. Do you feel that your life is empty? yes  no
4. Do you often get bored? yes  no
5. Are you in good spirits most of the time? yes  no
6. Are you afraid that something bad is going to happen to you? yes  no
7. Do you feel happy most of the time? yes  no
8. Do you often feel helpless? yes  no
9. Do you prefer to stay at home, rather than going out and doing things? yes  no
10. Do you feel that you have more problems with memory than most? yes  no
11. Do you think it is wonderful to be alive now? yes  no
12. Do you feel worthless the way you are now? yes  no
13. Do you feel full of energy? yes  no
14. Do you feel that your situation is hopeless? yes  no
15. Do you think that most people are better off than you are? yes  no

**A score of ≥ 5 suggests depression**  
**Total Score**

The Confusion Assessment Method (CAM) Diagnostic Algorithm

**Feature 1: Acute Onset and Fluctuating Course**
This feature is usually obtained from a family member or nurse and is shown by positive responses to the following questions: Is there evidence of an acute change in mental status from the patient’s baseline? Did the (abnormal) behavior fluctuate during the day, that is, tend to come and go, or increase and decrease in severity?

**Feature 2: Inattention**
This feature is shown by a positive response to the following question: Did the patient have difficulty focusing attention, for example, being easily distractible, or having difficulty keeping track of what was being said?

**Feature 3: Disorganized thinking**
This feature is shown by a positive response to the following question: Was the patient’s thinking disorganized or incoherent, such as rambling or irrelevant conversation, unclear or illogical flow of ideas, or unpredictable switching from subject to subject?

**Feature 4: Altered Level of consciousness**
This feature is shown by any answer other than “alert” to the following question:
Overall, how would you rate this patient’s level of consciousness? (alert [normal]), vigilant [hyperalert], lethargic [drowsy, easily aroused], stupor [difficult to arouse], or coma [unarousable])

The diagnosis of delirium by CAM requires the presence of features 1 and 2 and either 3 or 4.


Rule out delirium by history, exam and applying simple criteria.
Assess sleepiness by speaking with family, asking key questions and referring for OSA rule-out if ESS ≥ 10.

Epworth Sleepiness Scale

Name: ___________________________ Today’s date: ________________

Your age (Yrs): __________ Your sex (Male = M, Female = F): _______

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired?

This refers to your usual way of life in recent times.

Even if you haven’t done some of these things recently try to work out how they would have affected you.

Use the following scale to choose the most appropriate number for each situation:

0 = would never doze
1 = slight chance of dozing
2 = moderate chance of dozing
3 = high chance of dozing

*It is important that you answer each question as best you can.*

<table>
<thead>
<tr>
<th>Situation</th>
<th>Chance of Dozing (0-3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting and reading</td>
<td></td>
</tr>
<tr>
<td>Watching TV</td>
<td></td>
</tr>
<tr>
<td>Sitting, inactive in a public place (e.g. a theatre or a meeting)</td>
<td></td>
</tr>
<tr>
<td>As a passenger in a car for an hour without a break</td>
<td></td>
</tr>
<tr>
<td>Lying down to rest in the afternoon when circumstances permit</td>
<td></td>
</tr>
<tr>
<td>Sitting and talking to someone</td>
<td></td>
</tr>
<tr>
<td>Sitting quietly after a lunch without alcohol</td>
<td></td>
</tr>
<tr>
<td>In a car, while stopped for a few minutes in the traffic</td>
<td></td>
</tr>
</tbody>
</table>

THANK YOU FOR YOUR COOPERATION
Natural History of Cognitive Change

Normal Aging

Noticeable symptoms

Diagnosis

Dementia
Progression of Memory Decline

• Age-associated memory impairment
  – Primarily episodic memory and noun retrieval
  – Not disabling or progressive

• Mild cognitive impairment
  – Significant episodic memory impairment
  – Not disabling but does progress

• Dementia
  – Disabling memory or executive dysfunction
Mild Cognitive Impairment
Peterson R et al. Arch Neurol 1999; 56:303-308

- Subjective memory complaint
- Normal ADLs
- Normal general cognition
- Abnormal memory for age (lowest 10%)
- Often pre-dementia Alzheimer’s Disease
  - Initial report of conversion rate 12-15% per year vs. 1-2% for those w/normal recall
- “Non-amnestic” forms likely prodromes to other types of progressive dementia or more non-degenerative cognitive impairment
## Cognitive Changes

<table>
<thead>
<tr>
<th></th>
<th><strong>Aging</strong></th>
<th><strong>MCI</strong></th>
<th><strong>Dementia</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Recall and learning</td>
<td>Intact</td>
<td>Impaired</td>
<td>Impaired</td>
</tr>
<tr>
<td>Executive</td>
<td>Intact</td>
<td>Intact</td>
<td>Dependent</td>
</tr>
<tr>
<td>Reasoning</td>
<td>Abstract</td>
<td>Abstract</td>
<td>Concrete</td>
</tr>
<tr>
<td>Navigation</td>
<td>Intact</td>
<td>Transition</td>
<td>Impaired</td>
</tr>
<tr>
<td>Speech</td>
<td>Mild WFD</td>
<td>Transition</td>
<td>Anomia</td>
</tr>
<tr>
<td>Behavior</td>
<td>Normal</td>
<td>Changing</td>
<td>Changed</td>
</tr>
</tbody>
</table>

UNE GEC Dementia Conference
When Does Dementia Start?
Dementia Diagnosis:
McKhann GM et al. Alz & Dem 2011; 7:263-269

- Cognitive problem interferes w/ function
- Decline from previous level of function
- Not due to delirium or mental illness
- Impairment is validated by testing
- Impairment is present in ≥ 2 domains:
  - New learning and memory, executive, visuospatial, language, behavior
Causes of Dementia

- **Primary Dementia:** gradual, progressive
  - Alzheimer’s disease
  - Multi-infarct vascular dementia
  - Dementia with Lewy Bodies
  - Parkinson’s Disease Dementia
  - Frontotemporal Dementia

- **Secondary dementia:** acute or subacute:
  - Traumatic Brain Injury
  - CNS Infections
  - Alcohol-related (Korsakoff’s)

- “**Reversible” Causes**
  - Medical and psychiatric causes
Reversible Causes

- Metabolic
- Endocrine
- Alcoholism
- Drug toxicity
- Nutritional
- Vasculitis

- Brain tumor
- Subdural hematoma
- Hydrocephalus
- Psychiatric
- Infection
Labs and Imaging

• Labs: CBC, CMP, B12/folate, TSH
• Imaging: CT in most, especially with motor or gait findings unless very old and dementing > 3 years
• MRI if need to assess white matter
• PET/SPECT/LP if FTD suspected
• EEG if with rapid onset, myoclonus
AD Diagnosis:
McKhann GM et al. Alz & Dem 2011; 7:263-269

• Probable AD: dementia, insidious onset, worsening with time, either amnestic or nonamnestic presentation, no other disease accounts for findings
  – Supportive evidence (genetic, imaging and CSF biomarkers) add “increased level of certainty”

• “Possible” and “mixed” types remain
## Clinical Features At Diagnosis

<table>
<thead>
<tr>
<th></th>
<th>AD</th>
<th>VaD</th>
<th>DLB</th>
<th>FTD</th>
<th>NPH</th>
<th>MDD</th>
<th>Delirium</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>age</strong></td>
<td>older</td>
<td>older</td>
<td>older</td>
<td>younger</td>
<td>older</td>
<td>older</td>
<td>older</td>
</tr>
<tr>
<td><strong>memory</strong></td>
<td>poor recent recall</td>
<td>slow retrieval</td>
<td>slow retrieval</td>
<td>variable</td>
<td>slow retrieval</td>
<td>slow retrieval</td>
<td>poor recent recall</td>
</tr>
<tr>
<td><strong>executive</strong></td>
<td>less severe</td>
<td>more severe</td>
<td>more severe</td>
<td>concrete, dysfluent speech</td>
<td>more severe</td>
<td>more severe</td>
<td>very severe</td>
</tr>
<tr>
<td><strong>attention problems</strong></td>
<td>normal to mild</td>
<td>variable</td>
<td>waxing/waning</td>
<td>ADD</td>
<td>variable</td>
<td>variable</td>
<td>waxing/waning</td>
</tr>
<tr>
<td><strong>motor findings</strong></td>
<td>slowing</td>
<td>focal and EPS</td>
<td>EPS</td>
<td>normal to mild</td>
<td>gait dyspraxia</td>
<td>slowing</td>
<td>ataxia</td>
</tr>
<tr>
<td><strong>psychiatric</strong></td>
<td>apathy, anxiety</td>
<td>apathy, anxiety</td>
<td>apathy, VH</td>
<td>apathy, disinhibit, delusions</td>
<td>apathy</td>
<td>anxious, sad, irritable</td>
<td>VH, delusion</td>
</tr>
</tbody>
</table>
Outline of Dementia Care: Early Stages

• Pre-diagnosis: Assessment, counseling and reduction of risk factors
• Mild dementia: Discussion of diagnosis and prognosis, driving, supervision and support, quality of life activities, cognitive maintenance, medications
Mindful Practices

• Meditation, adequate sleep, exercise and stress reduction
• Frontal activation compensates (up to a point) for age-related declines in memory
Effects of Stress on Neurons

FIGURE 3. Exposure of rats to 6 weeks of unpredictable chronic mild stress (CMS; pink) induces depressive-like behaviors (e.g., anhedonia, learned helplessness) and multiple detrimental effects in the hippocampus and medial prefrontal cortex (mPFC), including decreases in neurogenesis, dendritic length, and synaptic density, as compared with control conditions (white). Both behavioral and structural deficits can be reversed by administration of antidepressants (Tx) during the final 2 weeks of CMS (CMS + Tx; blue). Schematic representations of mPFC neurons under the three conditions illustrate average dendritic changes. The authors of this study noted that these results were independent of neurogenesis, suggesting that restoration of normal dendritic length and synaptic density underlie behavioral recovery.
Cholinesterase Inhibitors

• AD: Start and maintain for at least 1 yr.
  – expect improvement in some, slowed decline in most, mild psychotropic effect
• LBD/PDD (rivastigmine): Better response and some psychotropic effect
• VaD: Off label, less response (?) but often mixed with AD
• FTD, EtOH, TBI: No benefit
Memantine (Namenda)

- Typically added after several months on cholinesterase inhibitory (ChEI)
- Complementary mechanism to ChEI
- Modest benefit when used alone
- Well tolerated
  - Possibly some dizziness, confusion
- FDA approved for mod to severe AD
The Overlapping Syndromes: The 3-D’s’s Often Co-Exist

- Depression
- Delirium
- Dementia
- Memory
- Attention
- Mood
- Executive
- Motor

UNE GEC Dementia Conference
Neuropsychiatric Symptoms

Cummings et al. Neurology 1994; 44:2308-14

- Apathy
- Anxiety
- Depression
- Euphoria
- Delusions
- Hallucinations
- Disinhibition
- Irritability
- Agitation/aggression
- Aberrant motor behavior
- Appetite and eating disorders
- Sleep-Wake disturbance
  - Insomnia, sleepiness, REM Behaviors
# Behavioral Symptoms AD
Lloyd et al. J. Geriatric Psychiatry Neuro 1995; 8:4:213-16

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Mild (%)</th>
<th>Mod (%)</th>
<th>Severe (%)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delusions</td>
<td>12</td>
<td>25</td>
<td>31</td>
<td>22</td>
</tr>
<tr>
<td>Hallucinations</td>
<td>12</td>
<td>15</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Agitation</td>
<td>47</td>
<td>55</td>
<td>85</td>
<td>60</td>
</tr>
<tr>
<td>Dysphoria</td>
<td>12</td>
<td>45</td>
<td>62</td>
<td>38</td>
</tr>
<tr>
<td>Anxiety</td>
<td>24</td>
<td>65</td>
<td>54</td>
<td>48</td>
</tr>
<tr>
<td>Euphoria</td>
<td>18</td>
<td>0</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Apathy</td>
<td>47</td>
<td>80</td>
<td>92</td>
<td>72</td>
</tr>
<tr>
<td>Disinhibition</td>
<td>35</td>
<td>40</td>
<td>31</td>
<td>36</td>
</tr>
<tr>
<td>Irritability</td>
<td>35</td>
<td>40</td>
<td>54</td>
<td>42</td>
</tr>
<tr>
<td>Restlessness</td>
<td>12</td>
<td>30</td>
<td>84</td>
<td>38</td>
</tr>
</tbody>
</table>
Psychotropic Target Symptoms

Mood Stabilizer
- impulsivity
- hyperactivity
- agitation

Antidepressant
- irritability
- anxiety
- dysphoria

Antipsychotic
- delusions
- hallucinations
- physical aggression

Analgesic:
- restless
- calling out
- grimacing
- combative

Stimulants:
- apathy
- sleepiness

Trazodone, Quetiapine:
- insomnia

Clonazepam:
- REM sleep
- behavior

Chl:
- apathy
- hallucinations
- misperceptions
- confusion
- inattention
Guideline for Pain Treatment in Mild Dementia

www.americangeriatrics.org/www.americqanpainsociety.org

- Generally able to reliably report pain but less reliable in people with low IQ
- Pose questions in present tense
- Use various terms for pain, discomfort, hurt, uncomfortable, etc.
- Use frequent direct questioning
- Multidimensional pain instrument may be helpful but not necessary
Guidelines in Severe Dementia

• Recommend using a validated pain scales for cognitive impaired or nonverbal patients
  – Scales are based on observation of behavior and expression
  – Scales have limitations (false + and -)
  – Verbal scales may be best in this group
• Note recent changes in vocalizations, facial expression, body posture and movement patterns, agitation with ADL care
• Physiologic clues of distress may be only clue: increased breathing or heart rate, increased BP
Cognitive Rehabilitation

• Promoting diet, exercise and cognitive activity interventions
  – not likely to help memory or cognition once dementia develops but….
  – can provide general benefits
• Psychosocial interventions can improve mood, appetite, sleep, morale and quality of life.
Information Families Want

- Diagnosis and prognosis
- Community resources for day programs and long term care
- Home safety (falls, fires, wandering)
- Driving evaluation
- Support groups and classes
- Alzheimer’s Association, Alzheimer’s Foundation of America, Family Caregiver Alliance
Resources

• Alzheimer’s Association
  – www.alz.org and www.alz.org/maine

• Alzheimer’s Disease Education and Referral Center
  – www.nia.nih.gov/Alzheimer’s

• Family Caregiver Alliance
  – www.caregiver.org

• Alzheimer’s Foundation of America
  – http://www.alzfdn.org

• Nameste End of Life Dementia Care
  – http://namastecare.com
References

• AGS Guidelines
• Cordell CB et al. Alzheimer’s Association recommendations for operationalizing the detection of cognitive impairment during the Medicare Annual Wellness Visit in a primary care setting. Alzheimer’s & Dementia 2013; 1-10
References II

- Hogan DB et al. Diagnosis and treatment of dementia: Approach to management of mild to moderate dementia. CMAJ 2008; 179:8: 787-793
- Hogan DB et al. Diagnosis and treatment of dementia: Nonpharmacologic and pharmacologic therapy for mild to moderate dementia. CMAJ 2008; 179:10: 1019-1026
- Sadowsky CH and Galvin JE. Guidelines for the management of cognitive and behavioral problems in Dementia. JABFM 2012; 25:3:350-366
References III
