DIAGNOSIS OF DEMENTIA IN THE OUTPATIENT SETTING

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FINANCIAL DISCLOSURES

- Dr. Little has no relevant financial disclosures to report
- Dr. Little will not be discussing any off label or unapproved medications

LEARNING OBJECTIVES

By the end of the session, participants will be able to…

- Define and distinguish dementia and mild cognitive impairment
- Describe the impact dementia has on the patient and caregiver
- Identify the most common types of dementing illnesses
- Successfully perform brief cognitive screens that can be used in daily clinical practice

BACKGROUND

- **1 in 3** elderly individuals develop some form of dementia
- **5.7 million** Americans are **currently living with Alzheimer's** and this number is expected to rise to **14 million** by the year 2050
- Between 2000 and 2015, deaths from heart dz declined by 11% but **deaths due to dementia have increased by 123%!!**
  - Dementia is the only cause of death in the top 10 causes of death in America that cannot be prevented, cured, or slowed
  - Nearly ½ of patients with dementia suffer from depression
  - Nearly ½ of caregivers also suffer from depression
  - This year (2018), dementia has lead to an expenditure of $277 billion in healthcare and caregiving costs

ALZHEIMER'S ASSOCIATION 2018 ALZHEIMER'S DISEASE FACTS AND FIGURES REPORT

BACKGROUND: DEFINITION OF DEMENTIA

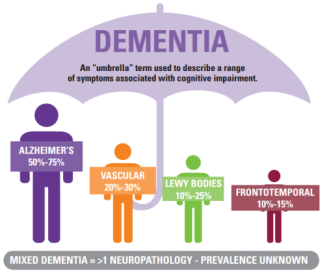
- **Memory impairment plus a decline in one or more cognitive domains**—learning ability, social function, visuo-spatial function, language, complex attention, executive functioning
- **Significant decline from previous abilities**
- **+Impairment in daily functioning**
- **Decline is progressive, disabling**
- Caused by damage to the brain

ARE THERE "NORMAL" CHANGES IN MEMORY WITH AGE?

- **Yes!!**
  - Slower recall of information, such as names
  - Increased effort needed to learn new tasks
  - Greater difficulty multi-tasking
  - Easier distractibility
  - Slower processing
- **But, dementia is NOT NORMAL in the older adult**

BACKGROUND

NOT ALL DEMENTIA IS ALZHEIMER'S DISEASE



MILD COGNITIVE IMPAIRMENT (MCI)

- **Memory impairment significant enough to be noticeable to family and/or individual, but not significant enough to interfere with daily activities**
- Occurs in 10-20% of adults >65
- Established risk factor for the development of Alzheimer's Disease
  - 30% of those w/ MCI progress to Alzheimer's each year (**70% of people with MCI don't progress**)

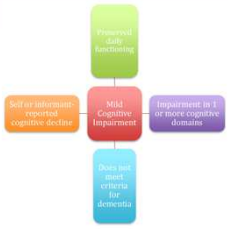
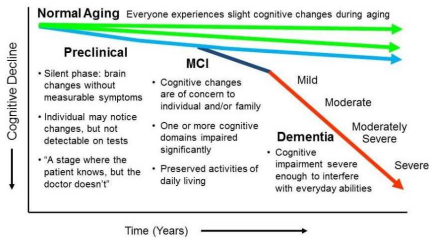


Figure 1: Characteristics of Mild Cognitive Impairment[1]

3 STAGES IN THE DEVELOPMENT AND PROGRESSION OF DEMENTIA



WHAT ARE THE IMPLICATIONS FOR HEALTH CARE PROVIDERS?

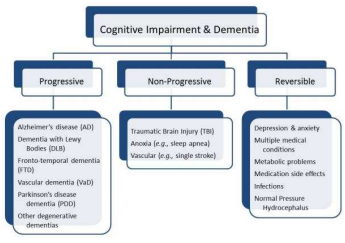
- **Dementia dx changes in our approach with the patient:**
  - Do caregivers need to be present during office visits or called to be updated after visits?
  - Should written and verbal instructions be provided?
  - Is there a pattern to repeat hospitalizations, ER visits, etc, that may need to be addressed → is the pt receiving enough oversight at home?
  - Are there signs of caregiver burnout that we can assist with?
  - What is the overall life expectancy and how does seeing the "big" picture change our management?

NOW ON TO MAKING THE DIAGNOSIS…

DIAGNOSIS

Goals:

- Rule out reversible causes!
- Distinguish between the various types of dementing illnesses
- Build a comprehensive treatment plan (bio-psycho-social care) tailored to the individual



DIAGNOSIS

- Complete medical history
- Physical and neurological examinations
  - "Memory Test"→ Saint Louis University Mental Status Examination (SLUMs) or Rapid Cognitive Screen (RCS)
- Neuroimaging
- Laboratory tests
- Neuropsychological assessment (optional)

****At the present time, there is no single diagnostic test for detecting mild cognitive impairment, Alzheimer's Disease or other types of dementia**

REVERSIBLE CAUSES OF MCI/DEMENTIA

D rugs
E motional (depression)
M etabolic (hypothyroidism,B12)
E yes and ears (sensory isolation)
N ormal Pressure Hydrocephalus (ataxia, incontinence, and dementia)
T umor or other space-occupying lesion
I nfection (syphilis, chronic infections)
A trial fibrillation/Alcoholism
S leep Apnea

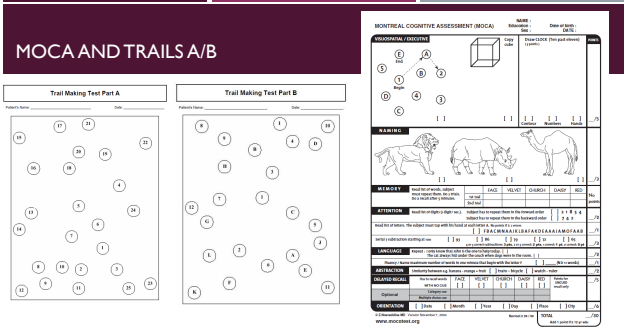
~10 % of all Dementias

DETECTING MCI

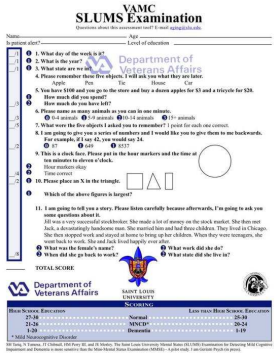
Which of the following dementia screening tools can also be used to screen for MCI?

1. Mini Mental Status Examination (MMSE)
2. Saint Louis University Mental Status Examination (SLUMS)
3. Montreal Cognitive Assessment (MoCA)
4. Mini-Cog Test
5. Rapid Cognitive Screen (RCS)
6. All of the Above

MOCA AND TRAILS A/B



SLUMS



SLUMS: SAINT LOUIS UNIVERSITY MENTAL STATUS EXAM

Sensitivity to detect MCI according to area under the curve (AUC) analysis*

Education	Less than HS		More than HS	
Instrument	MMSE	SLUMS	MMSE	SLUMS
AUC (Sensitivity)	67%	93%	64%	94%

What are we measuring in each SLUMS item?

- Q1-Q3: Attention, Immediate Recall, and Orientation.
- Q4 & Q7: Delayed Recall with Interference.
- Q5: Numeric Calculation and Registration.
- Q6: Immediate Recall with Interference (time constraint).
- Q8: Registration and Digit Span.
- Q9: Visual Spatial and Executive Function.
- Q10: Visual Spatial.
- Q11: Executive Function plus Extrapolation.

*Tariq SH, Tumosa N, Chibnall JT, Perry MH, Morley J. Comparison of the Saint Louis University mental Status Examination and the Mini-Mental State Examination for Detecting Dementia and Mild Neurocognitive Disorder--A Pilot Study. Am J Geriatr Psychiatry. 2006; 14(11):900-10.

SLUMS: SAINT LOUIS UNIVERSITY MENTAL STATUS EXAM CRUZ, JAMDA 2010

Cognitive Impairment Screening Instruments ability in detecting Dementia

Authors	Instrument	Sensitivity, %	Specificity %	Comparison to MMSE	Class of evidence *
Tangalos et al.	MMSE	82	99	-	II
Kokmen et al.	STMS	86	88	Y	III
Solomon et al.	7-Minute Screen	92	96	Y	III
Buschke et al.	MIS	87	96	Y	I
Borson et al.	Mini-Cog	76	89	Y	III
Cahn et al.	CDT	83	72	-	I
Nasreddine et al.	MoCA	100	87	Y	I
Tariq et al.	SLUMS**	100/98	98/100	Y	II

**This study has different values according to education, first set of numbers represent the sensitivity and specificity for less than high school and the second set represent high school or higher education.
This table was adapted from the *American Academy of Neurology*. Classification of evidence , see next slide.

MINI-COG

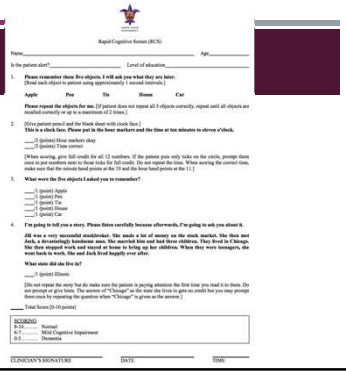
1. Instruct the patient to listen carefully and repeat:
   APPLE WATCH PENNY
2. Administer the Clock Drawing Test
3. Ask the patient to repeat the three words

Score:

- 0 Positive for cognitive impairment
- 1-2 **Abnormal** CDT then positive for cognitive impairment
- 1-2 **Normal** CDT then negative for cognitive impairment
- 3 Negative screen for dementia (no need to score CDT)

- Benefit: QUICK! Drawback: Low sensitivity

RAPID COGNITIVE SCREEN



Rapid Cognitive Screen (RCS)

Name_____ Age_____

Is the patient alert?_____ Level of education_____

1. **Please remember these five objects. I will ask you what they are later.**
[Read each object to patient using approximately 1 second intervals.]

Apple Pen Tie House Car

Please repeat the objects for me. [If patient does not repeat all 5 objects correctly, repeat until all objects are recalled correctly or up to a maximum of 2 times.]

2. [Give patient pencil and the blank sheet with clock face.]
This is a clock face. Please put in the hour markers and the time at ten minutes to eleven o'clock.

___2 (points) Hour markers okay
___2 (points) Time correct

[When scoring, give full credit for all 12 numbers. If the patient puts only ticks on the circle, prompt them once to put numbers next to those ticks for full credit. Do not repeat the time. When scoring the correct time, make sure that the minute hand points at the 10 and the hour hand points at the 11.]

3. **What were the five objects I asked you to remember?**

___1 (point) Apple
___1 (point) Pen
___1 (point) Tie
___1 (point) House
___1 (point) Car

4. **I'm going to tell you a story. Please listen carefully because afterwards, I'm going to ask you 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 state did she live in?

___1 (point) Illinois

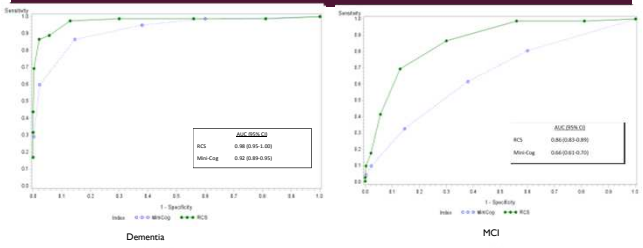
[Do not repeat the story but do make sure the patient is paying attention the first time you read it to them. Do not prompt or give hints. The answer of "Chicago" as the state the lives in gets no credit but you may prompt them once by repeating the question when "Chicago" is given as the answer.]

___ Total Score [0-10 points]

SCORING
8-10 ..... Normal
6-7 ..... Mild Cognitive Impairment
0-5 ..... Dementia

CLINICIAN'S SIGNATURE DATE TIME

RAPID COGNITIVE SCREEN VS MINICOG

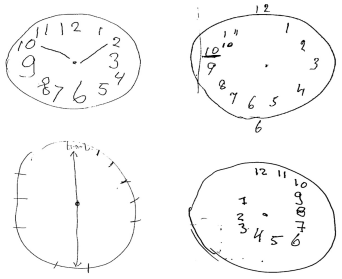


Dementia MCI

Malmstrom TK1, et al. J Nutr Health Aging. 2015 Aug;19(7):741-4.

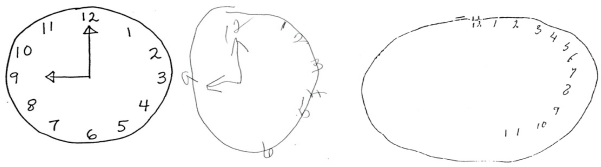
TIME TO DRAW A CLOCK!

Clock drawings by patients with AD.



van der Flier W M , Scheltens P J Neurol Neurosurg Psychiatry 2005;76:v45-v52

CLOCK DRAWINGS BY PATIENTS WITH UNILATERAL NEGLECT



3 REASONS TO DO A RAPID COGNITIVE SCREEN (RCS)

- It's fast
- It's free – no copyright
- It detects mild cognitive impairment (MCI)

WHY IS AN EARLY DIAGNOSIS IMPERATIVE?

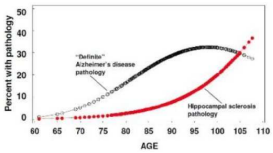
- **Early diagnosis of dementia is important** because:
  - It can **identify any potentially reversible or treatable causes** and these can be corrected before permanent damage to brain is done
  - It can **facilitate planning** for patients and families
    - Includes naming POA, getting finances "in order," discussion of medical preferences
  - Can **address critical safety issues** such as driving and living alone before a crisis occurs
  - It can explain why the patient acts and thinks "different" and allow families to place blame on the disease process and not the patient themselves

MAIN TYPES OF DEMENTIA

ALZHEIMER'S DISEASE, VASCULAR DISEASE, LEWY BODY DEMENTIA, PARKINSON'S DISEASE WITH DEMENTIA, FRONTOTEMPORAL DEMENTIA, HIPPOCAMPAL SCLEROSIS OF AGING, PRIMARY TAUOPATHY

COMMON DEMENTIAS IN OLDER PERSONS

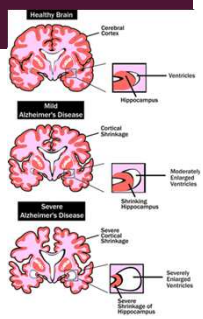
- Hippocampal sclerosis of aging
- Primary age-related tauopathy (PART)
- Vascular dementia
- Lewy body dementia
  - Other Parkinsonian dementias
- Dementia of Diabetes
- Alzheimer's disease



Nelson PT1, et al. Brain. 2011 May;134(Pt 5):1506-18.

ALZHEIMER'S DISEASE

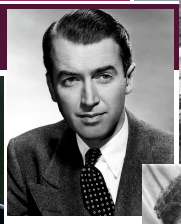
- **What causes Alzheimer's Disease**?
  - Not fully understood yet
  - Develops as a result of **complex series of events** that take place in the brain **over many years**
    - Genetic, environmental and lifestyle factors contribute
  - Caused by:
    - **Accumulation of "plaques" and "tangles"**
    - **Neurotransmitter deficits**
    - **Inflammation**
  - Early-onset form is rare (1-2%) and occurs before the age of 60
  - Late-onset form develops after the age of 60

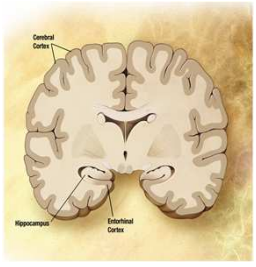


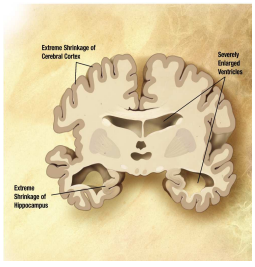
ALZHEIMER'S DISEASE

- History:
  - Named in 1901 by German psychiatrist **Alois Alzheimer**
- **Pathophysiology:**
  - Caused by **plaques and tangles**
    - **Plaques occur outside of nerve cells** and are made of an abnormal protein fragment called **amyloid beta**
    - **Neurofibrillary tangles occur inside nerve cells** and are made of **tau protein**
    - This abnormal protein accumulation also leads to **increased inflammation and cellular death**, causing more damage

ALZHEIMER'S DISEASE







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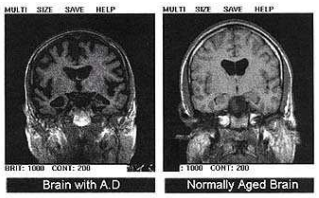
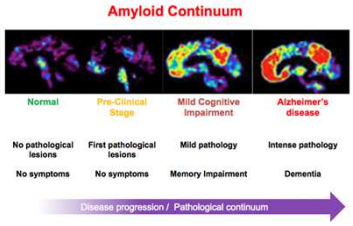
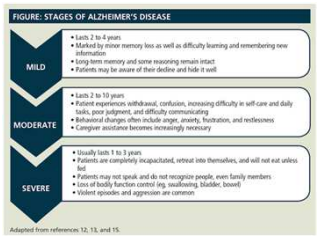


ALZHEIMER'S DISEASE



ALZHEIMER'S DISEASE: STAGES

- Gradual onset with progressive decline
- Motor symptoms are rare early in disease course but develop later on



ALZHEIMER'S DISEASE: STAGING

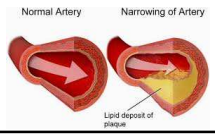
Functional Assessment Staging (FAST)

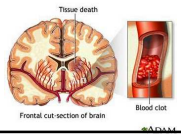
FAST Stage and Characteristics	Clinical Diagnosis	Duration of stage*
1. No functional decrement	Normal Adult	50 years
2. Subjective word difficulties	Normal Aged Adult	15 years
3. Decreased function in demanding employment settings	Compatible with possible incipient Alzheimer's disease in minority of cases	7 years
4. Decreased ability to handle complex tasks such as finances or planning dinner for guests	Mild Alzheimer's disease	2 years
5. Requires assistance in choosing proper clothing	Moderate Alzheimer's disease	18 months
6. a) difficulty dressing properly	Moderately severe Alzheimer's disease	5 months
b) requires assistance bathing		5 months
c) inability to handle mechanics of toileting		5 months
d) urinary incontinence		4 months
e) fecal incontinence		10 months
7. a) ability to speak limited to about six words	Severe Alzheimer's disease	12 months
b) intelligible vocabulary limited to single word		18 months
c) ambulatory ability lost		12 months
d) ability to sit up lost		12 months
e) ability to smile lost		18 months
f) ability to hold head up lost		*Not applicable*

**duration of stage in those entering the stage who progress into the next stage; not all patients progress.*

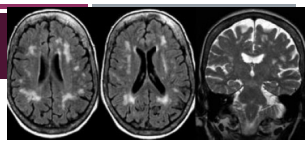
VASCULAR DEMENTIA

- Caused by **poor blood flow→ strokes, diabetes, high blood pressure, high cholesterol, atrial fibrillation**
- Sudden onset and stepwise progression
- Abrupt changes in cognitive ability
- **Future damage can be prevented or slowed** by aggressive control of chronic medical conditions

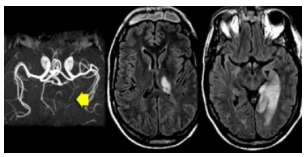




VASCULAR DEMENTIA



- Symptoms tend to correlate with where in the brain the stroke or blood vessel narrowing occurs
- Head imaging reveals "ischemic small vessel disease" or previous "infarcts"



VASCULAR DEMENTIA

- Multi-infarct dementia → vascular dementia

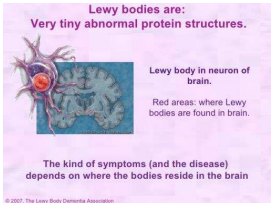
TABLE 4: HACHINSKI ISCHEMIC SCORE[4,66]

Feature	Score
Abrupt onset	2
Stepwise deterioration	1
Fluctuating course	2
Nocturnal confusion	1
Preservation of personality	1
Depression	1
Somatic complaints	1
Emotional incontinence	1
History of hypertension	1
History of stroke	2
Associated atherosclerosis	1
Focal neurological symptoms	2
Focal neurological signs	2

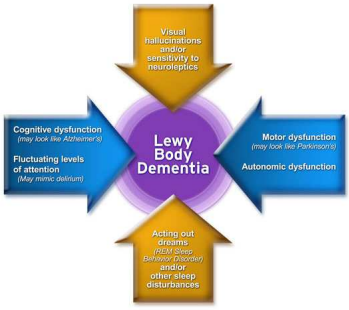
A score of 4 or less suggests dementia is due to Alzheimer's disease, a score of 7 or greater suggests vascular dementia.

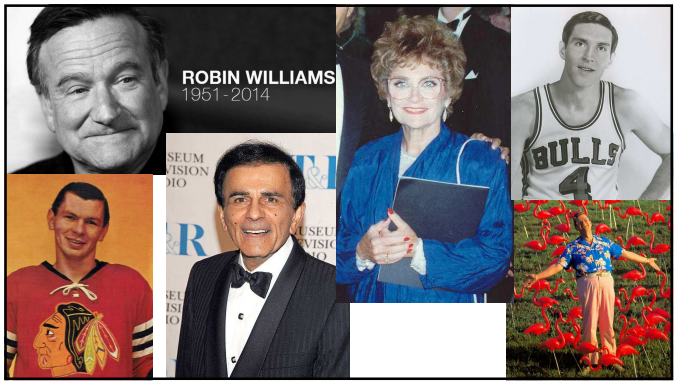
LEWY BODY DEMENTIA

- Caused by **abnormal protein deposits "Lewy Bodies"**
- On the same spectrum as Parkinson's Disease
- More common in men
- **Symptoms:** visual hallucinations, fluctuating attention, motor dysfunction, abnormal movements during sleep
- Widely **under-diagnosed**

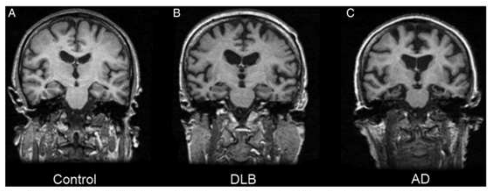


Symptoms are dependent on where in the brain the Lewy Bodies deposit





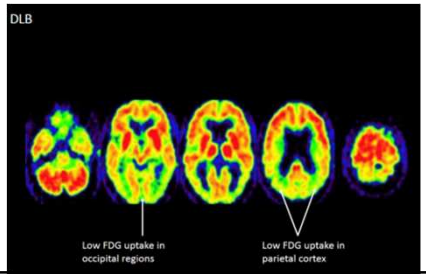
LEWY BODY DEMENTIA



GOMI R, VARDY E, O'BRIEN J. DELIRIUM AND DEMENTIA WITH LEWY BODIES: DISTINCT DIAGNOSES OR PART OF THE SAME SPECTRUM? J NEUROL NEUROSURG PSYCHIATRY 2015;86:50-9.

Figure 1 Coronal view of a structural MRI brain scan in (A) Control, (B) Dementia with Lewy bodies (DLB) and (C) AD. Note the relatively preserved medial temporal lobes in DLB compared with AD.

LEWY BODY DEMENTIA



PARKINSON'S DISEASE WITH DEMENTIA

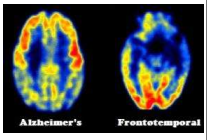
- Parkinson's Disease is a **chronic, progressive neurological condition**
- **Symptoms:** tremors, muscle stiffness, masked faces, and slow, shuffling gait
- Most people with Parkinson's **will eventually develop dementia**
  - Memory loss is accompanied by depression, anxiety, and hallucinations
  - Often have marked impairment in visual-spatial functioning, causing earlier concern with driving

PARKINSON'S DISEASE WITH DEMENTIA

- Parkinson's disease with dementia is very similar to Lewy Body Dementia and the two can be hard to tell apart at later stages
- **Timing differentiates:**
  - Lewy Body → memory impairment precedes or accompanies motor symptoms
  - Parkinson's disease with dementia → Motor symptoms precede memory impairment by >1 year, but usually by many years

FRONTOTEMPORAL DEMENTIA (FTD)

- AKA "Pick's Disease"
- Results from **progressive degeneration** of **frontal and temporal lobes**
- **Affects personality**, causing a **decline in social skills** and inability to understand/read another's emotions
- Can affect **language** and **motor skills**
- Behavior and personality changes manifest long before memory loss
- Occurs at a **younger age** and is more common than Alzheimer's in people <60



NOW A QUICK WORD ON TREATMENT…

TREATMENT

- Goal of treatment is to enhance quality of life and maximize functional performance by improving cognition, mood, and behavior

TREATMENT

- There are **no proven cures or disease-slowing treatments**
- Goal is to **maximize cognitive abilities** for as long as possible (improve symptoms)
- Medications only work in a small subset of patients and on average improve memory test scores by 1-2 points
- There are **4 FDA approved medications**:
  - Donepezil (Aricept)
  - Rivastigmine (Exelon)
  - Galantamine (Razadyne)
  - Memantine (Namenda)

Table 5
Summary of Drugs to Improve Cognitive Function

Generic Name	Brand Name	Dosage Forms	Mechanism	Starting Dosage	Goal Dosage
Donepezil	Aricept	IR tablet ODT	Cholinesterase inhibitor	5 mg/day	10 mg/day
Galantamine	Razadyne	IR tablet ER tablet	Cholinesterase inhibitor	4 mg bid or 8-12 mg/day	8 mg/day (ER) 16-24 mg/day (ER)
Memantine	Namenda	IR tablet	NMDA inhibitor	5 mg/day	10 mg bid
Rivastigmine	Exelon	Patch IR capsules Oral solution	Cholinesterase inhibitor	4.6 mg per 24 h 1.5 mg bid	9.5 mg per 24 h 6 mg bid

IR: immediate release; ODT: orally disintegrating tablet; ER: extended release; NMDA: N-methyl-D-aspartate (glutamate).

TREATMENT SOAPBOX

- Disclaimer: I am biased against "anti-dementia" medications in most cases
- If they worked, there would be no dementia
- Medications are aimed at only one pathway causing dementia, but we know it is more complicated than one pathway
- The public is mislead into thinking that these are "must-have" cures and are effective for all

TREATMENT

- 257 studies included in review
- Cholinesterase inhibitors (ChEIs) produce small improvements in cognitive function in pts w/ mild to moderate Alzheimer's and Lewy Body dementia, but clinical significance is unclear
  - No improvement w/ vascular dementia
- Efficacy wanes over time w/ minimal benefit after 1yr of tx
- No evidence for benefit in advanced dz or in those >85 y/o
- Adverse effects are significant and occur in a dose-dependent manner
  - 2-5x increase in side effects, particularly weight loss, syncope, and debility
  - Those >85 have 2x the risk of side effects seen in younger pts

A Risk-Benefit Assessment of Dementia Medications: Systematic Review of the Evidence

Author information

Abstract

BACKGROUND: There is no cure for dementia, and no treatments exist to halt or reverse the course of the disease. Treatments are aimed at improving cognitive and functional outcomes.

OBJECTIVE: Our objective was to review the basis of pharmacological treatments for dementia and to summarize the benefits and risks of dementia treatments.

METHODS: We performed a systematic literature search of MEDLINE through November 2014, for English-language trials and observational studies on treatment of dementia and mild cognitive impairment. Additional references were identified by searching bibliographies of relevant publications. Wherever possible, pooled data from meta-analyses or systematic reviews were obtained. Studies were included for review if they were randomized trials or observational studies on dementia or mild cognitive impairment that evaluated efficacy outcomes or adverse outcomes associated with treatment. Studies were excluded if they evaluated non-FDA approved treatments, or if they evaluated treatment in disorders other than dementia and mild cognitive impairment.

RESULTS: The literature search found 940 potentially relevant studies, of which 257 were included in the systematic review. In pooled trial data, cholinesterase inhibitors (ChEIs) produce small improvements in cognitive, functional, and global benefits in patients with mild to moderate Alzheimer's and Lewy body dementia, but the clinical significance of these effects are unclear. There is no significant benefit seen for vascular dementia. The efficacy of ChEI treatment appears to wane over time, with minimal benefit seen after 1 year. There is no evidence for benefit for those with advanced disease or those aged over 85 years. Adverse effects are significantly increased with ChEIs, in a dose-dependent manner. A two- to fivefold increased risk for gastrointestinal-, neurological, and cardiovascular side effects is related to cholinergic stimulation, the most serious being weight loss, debility, and syncope. Those aged over 85 years have double the risk of adverse events compared with younger patients. Memantine monotherapy may provide some cognitive benefit for patients with moderate to severe Alzheimer's and vascular dementia, but the benefit is small and may wane over the course of several months. Memantine exhibits no significant benefit in mild dementia or Lewy body dementia or as an add-on treatment with ChEIs. Memantine has a relatively favorable side-effect profile, at least under controlled trial conditions.

CONCLUSIONS: ChEIs produce small, short-lived improvements in cognitive function in mild to moderate dementia, which may not translate into clinically meaningful effects. Marginal benefits are seen with severe disease, long-term treatment, and advanced age. Cholinergic side-effects, including weight loss, debility, and syncope, are clinically significant and could be especially detrimental in the frail elderly population, in which the risks of treatment outweigh the benefits. Memantine monotherapy may have minimal benefits in moderate to severe dementia, balanced by minimal adverse effects.

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TREATMENT

- Memantine (Namenda) is FDA approved for treating moderate to severe dementia
- It is often used in combination with donepezil because the studies for monotherapy are not impressive
- Even though it is not as beneficial for cognition, there are several positive studies that show improvements in behavior

Memantine for dementia.

Update in
Memantine for dementia. [Cochrane Database Syst Rev. 2006]

Abstract

BACKGROUND: Memantine, a low affinity antagonist to glutamate NMDA-receptors, may prevent excitatory neurotoxicity in dementia.

OBJECTIVES: To determine efficacy and safety of memantine for people with Alzheimer's disease (AD), vascular (VD) and mixed dementia.

SEARCH STRATEGY: The Specialized Register of the Cochrane Dementia and Cognitive Improvement Group was searched on 20 May 2005. This register contains references from all major healthcare databases and many ongoing trial databases and is updated regularly. In addition the search engines Copernic and Google were used to identify unpublished trials through inspection of the websites of licensing bodies like the FDA , EMEA and NICE and of companies' websites (Lundbeck, Merz, Forest, Suntori etc) and clinical trials registries.

SELECTION CRITERIA: Double-blind, parallel group, placebo-controlled, randomized trials of memantine in people with dementia.

DATA COLLECTION AND ANALYSIS: Data were pooled where possible. Intention-to-treat (ITT) and observed case (OC) analyses are reported.

MAIN RESULTS: 1. Moderate to severe AD. Two out of three six month studies show a small beneficial effect of memantine. Pooled data indicate a beneficial effect at six months on cognition (4.12 points on the 100 point SIB , 95% CI 2.14 to 5.74, P < 0.00001), activities of daily living (1.27 points on the 54 point ADCS-ADLsev, 95% CI 0.44 to 2.09, P = 0.003) and behaviour (2.76 points on the 144 NPI, 95% CI 0.88 to 4.63, P = 0.004), supported by clinical impression of change (0.28 points on the 7 point CIBIC+, 95% CI 0.15 to 0.41, P < 0.0001).2. Mild to moderate AD. In a single six month trial, memantine had a beneficial effect on ITT analysis of cognition, (1.9 ADAS-Cog points, 95% CI 0.35 to 3.45, P = 0.02) and behaviour (3.92 NPI points 95% CI 0.15 to 8.85, P = 0.04) supported by clinical global impression of change (0.30 CIBIC+ points, 95% CI 0.09 to 0.51, P = 0.005), but no effect on activities of daily living or OC analysis of cognition. The statistical significance of these benefits could be overturned by data from two unpublished studies which are known to show no significant effect. 3. Mild to moderate vascular dementia. In two six month studies, memantine improved cognition (1.85 ADAS-Cog points, 95% CI 0.88 to 2.83, P < 0.0002), and behaviour (3.84 95% CI 0.96 to 6.91, P = 0.03) but this was not supported by clinical global measures.4. Patients taking memantine appeared to be less likely to develop agitation (93/1107 [8%] versus 134/1141 [12%] (Peto odds ratio (OR): 0.65, 95% CI 0.49 to 0.86, P = 0.002). This was consistently seen in moderate to severe dementia. There were no data which suggested an effect on agitation which is already present.5. Memantine is well tolerated.

AUTHORS' CONCLUSIONS: Published data suggest a small beneficial effect of memantine at six months in moderate to severe AD. The beneficial effect on cognition in patients with mild to moderate vascular dementia was not detectable on global assessment at six months. Whether memantine has any effect in mild to moderate AD is unknown.

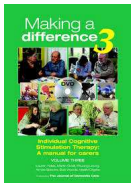
SO IF MEDICATIONS DON'T REALLY WORK, WHAT TREATMENTS CAN WE OFFER?

EXERCISE AND DEMENTIA

- **Exercise has been shown to improve quality of life for all stages of Dementia and Alzheimer's**
- It likely **works better than our best medications** in improving symptoms and behavioral issues
  - Can reduce risk of stroke and improve high blood pressure, diabetes, and cholesterol, all of which are risk factors for vascular dementia
  - Improved physical fitness can allow for longer independence
  - Reduces risk of falls
  - Improves mood
  - Improves sleep

COGNITIVE STIMULATION THERAPY (CST)

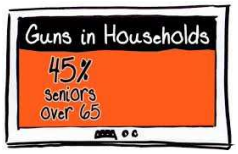
- **Organized group therapy program** for those w/ **mild to moderate dementia**
- Uses a structured approach to focus on:
  - Reminiscence
  - Orientation
  - Mental stimulation
- Not only enhances cognitive function, but has been shown to improve **quality of life for both patient and caregiver**
- Typically structured as a 14 session course which meets 2x/weekly
  - Can take place in nursing home, adult day centers, assisted living, or home



CARDINALS
REMINISCENCE LEAGUE

SAFE RETURN IDENTIFICATION

GUNS AND DEMENTIA DON'T MIX…



COMPLICATING FACTORS

- **Infections:**
  - UTI
  - Pneumonia
- **Change in environment**
  - Hospitalizations
  - Move to higher level of care
- **Change in routine**

McGeer Criteria: Antibiotic Prescribing for Urinary Tract Infections

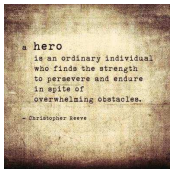
Without Urinary Catheter	With Urinary Catheter
Criteria 1 and 2 must be present: 1. At least one of the following: • Acute dysuria or acute pain, swelling, or acute tenderness of the testes, epididymis, or prostate • Fever or leukocytosis And at least one of the following subcriteria: • Acute costovertebral angle/pain/tenderness • Suprapubic pain • Gross hematuria • New or marked increase in incontinence • New or marked increase in urgency • New or marked increase in frequency In the absence of fever or leukocytosis, then two or more of the following subcriteria: • Subrapubic pain • Gross hematuria • New or marked increase in incontinence • New or marked increase in urgency • New or marked increase in frequency 2.One of the following: • At least 10^5 cfu/mL of no more than two species of microorganisms in voided urine sample • At least 10^2 cfu/mL of any number of organisms in a specimen collected by in-and-out catheter	Criteria 1 and 2 must be present: 1. At least one of the following: • Fever, rigors, or new onset hypotension, with no alternate site of infection • Either acute change in mental status or functional decline, with no alternate site of infection • New-onset suprapubic pain or costovertebral angle pain/tenderness • Purulent discharge from around the catheter or acute pain, swelling, or tenderness of the testes, epididymis, or prostate 2.And the following: • Urinary catheter specimen culture with at least 10^3 cfu/mL of any organism(s)

From Stone ND, Ashraf MS, Calder J, et al; Society for Healthcare Epidemiology Long-Term Care Special Interest Group. Surveillance of infections in long-term care facilities: revising the McGeer criteria. Infect Control Hosp Epidemiol 2012;33:965–77.

nce deffi nitions

CAREGIVER SUPPORT

- **Assess for caregiver burden/burnout**
- **What resources may be available?**
  - Alzheimer's Association
  - Private duty nursing
  - Respite care
- **Explore feelings regarding when placement outside of the home may be needed**



ADVANCE DIRECTIVES

- **Advance Directive:**
  - Legal document containing preferences for health care decisions should one become unable to make decisions/incapacitated due to illness (dementia) or injury
- **Living will:**
  - One form of advance directive that discusses specific preferences such as feeding tube placement, ventilator usage, CPR preferences, etc
- **Durable power of attorney (DPOA):**
  - Individual named to make decisions should one become incapacitated

ADVANCE DIRECTIVE FOR HEALTH CARE
(LIVING WILL AND HEALTH CARE PROXY)

This form may be used in the state of Alabama to make your wishes known about what medical treatment or other care you would or would not want if you become too sick to speak for yourself. You are not required to have an advance directive. If you do have one, a doctor, physician, or your close friends and family will do their best to honor your wishes. You can change your mind about these directives by tearing up this form and telling your family. You can also do away with these directives by tearing them up and by telling someone at least 18 years of age that you wishes and asking him or her to write them down.

I understand that these directives will only be used if I am not able to speak for myself.

SECTION 1. LIVING WILL

I, _____, being of sound mind and at least 19 years of age, want my wishes known. I direct that my family, my doctors and health care workers, and all others follow the directions I am writing down. I know that at any time I can change my mind about these directions by tearing up this form and telling them that I have done so or by telling someone at least 19 years of age that my wishes and asking him or her to write them down.

A. TERMINAL ILLNESS OR INJURY

Terminally ill or injured is when my doctor and another doctor decide that there is a condition that cannot be cured and that I will likely die in the near future from my condition.

Life-sustaining treatment includes drugs, machines, or medical procedures that would keep me alive but would not cure my condition. If I am terminally ill or injured, but to live life sustaining treatment, I will still get medical care that helps me be comfortable.

PLACE YOUR INITIALS BY EITHER "YES" OR NO":

_____ YES _____ NO

If you refuse life sustaining treatment and I am terminally ill or injured:

B. ARTIFICIALLY PROVIDED FOOD AND HYDRATION (FOOD AND WATER THROUGH A TUBE OR AN IV)

I understand that if I am terminally ill or injured I may need to be given food and water through a tube or an IV to keep me alive if I am no longer able to swallow on my own or with someone helping me.

PLACE YOUR INITIALS BY EITHER "YES" OR NO":

THANKS!