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OVERVIEW OF MENTAL HEALTH IN OLDER ADULTS

- Aging as a pathological process vs. normal physiological process
- Number of older people with chronic illness is increasing as people live longer
- Increased need for care---increased demand on resources

OVERVIEW

Be mindful of the afflictions we can treat:

Enhance wellness

Alleviate suffering

Improve functioning

OVERVIEW

- Elderly make up 12% of the population
- Fastest growing group
- People 85-110 years of age are growing at 3x the rate of the rest of the population
- 1/3 of all medications prescribed

OVERVIEW

- 1/2 of all medical beds
- 80% of all nursing home patients have some pathology
- 20% of all suicides

OVERVIEW

- Older people do not tolerate insults as well
- Lack functional reserves
- Look for:
  - physical illness which can be subtle, i.e.pneumonia
  - social insults, i.e. losses
  - medication side effects

Interface Between Depression and Dementia

- Dysthymia may be an emotional reaction to progressive cognitive decline
- Response may be related to personality traits
- Major depression may be related to biological factors
- Association between late life depression and increased risk of dementia
- Depression might be due to degeneration in locus coeruleus in early AD or serotonergic cells in raphe nuclei
- CVD may also be cause of depression in MCI
  - Disruption of frontostriatal pathways or modulating systems

MCI

- Normal aging-------MCI-------Dementia
- Complaints of impairment in memory or other areas of cognitive function usually noted by others
  - Memory loss to a greater extent than normal but not sufficient to be dementia
- Daily function usually preserved
- 20% with MCI over age 65
- 4X more common than dementia
- Older with MCI 3-15X more likely to develop dementia

Dementia

- Acquired syndrome of decline in memory and at least one other cognitive function (e.g., Apraxia, Aphasia, Agnosia) sufficient to affect daily life in an alert person.

Potential Reversible Causes of Dementia

- Metabolic
  - (thyroid)
- Alcoholism and drug toxicity
- Nutritional
  - (vitamin B_{12} deficiency)
- Vasculitis
- Brain tumor
- Subdural hematoma
- Hydrocephalus
- Psychiatric
  - (severe depression)
- Infection

Fillit H, Cummings J. *Manag Care Interface*. 2000;13:51-56.

Vascular Dementia

- Vascular dementia (VaD) is the second most common cause of dementia

- Many patients have both AD and cerebrovascular disease (mixed dementia)

Agüero-Torres H, Winblad B. *Ann NY Acad Sci.* 2000;903:547-552

Other Degenerative Diseases of the CNS

- Parkinson's disease
- Huntington's disease
- Pick's disease
- Dementia with Lewy bodies
- Creutzfeldt-Jakob disease
- Frontotemporal dementia
- Progressive supranuclear palsy

American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders.* 4th ed. 1994:155.

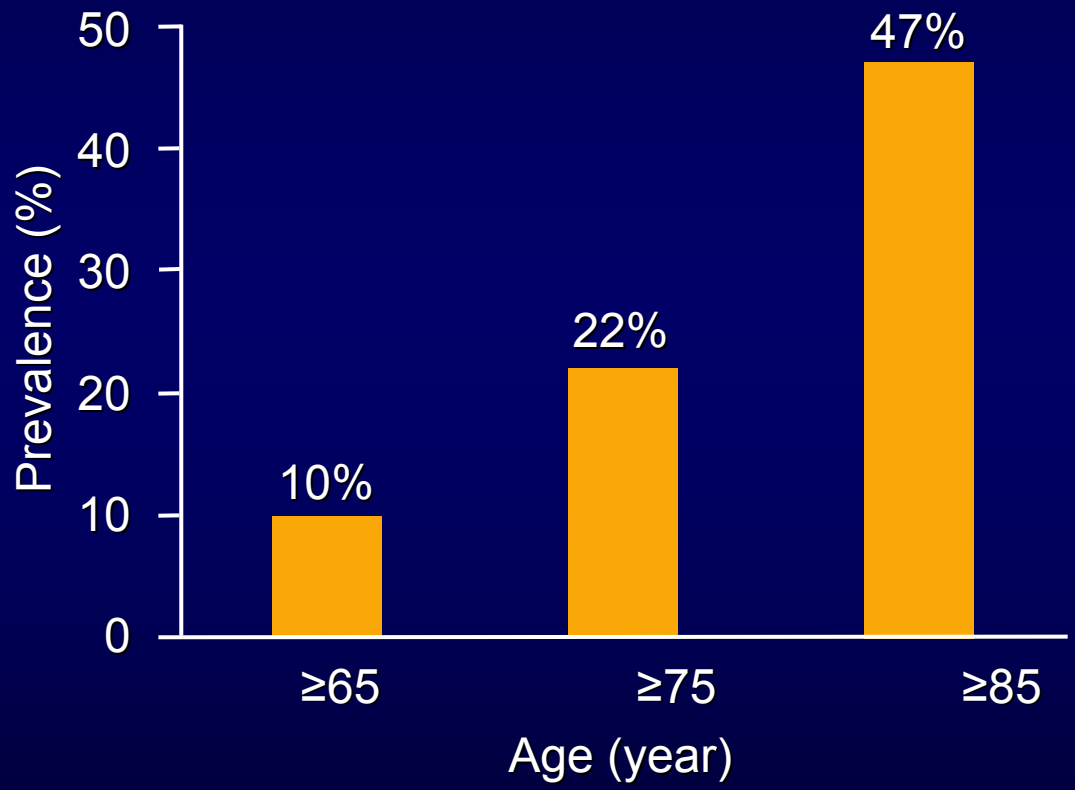
ALZHEIMER'S DISEASE

Alzheimer's case report (1907)

- The first noticeable symptom of illness was suspiciousness of her husband…believing that people were out to murder her
- She screams that her doctor wants to cut her open; at times, she seems to have auditory hallucinations

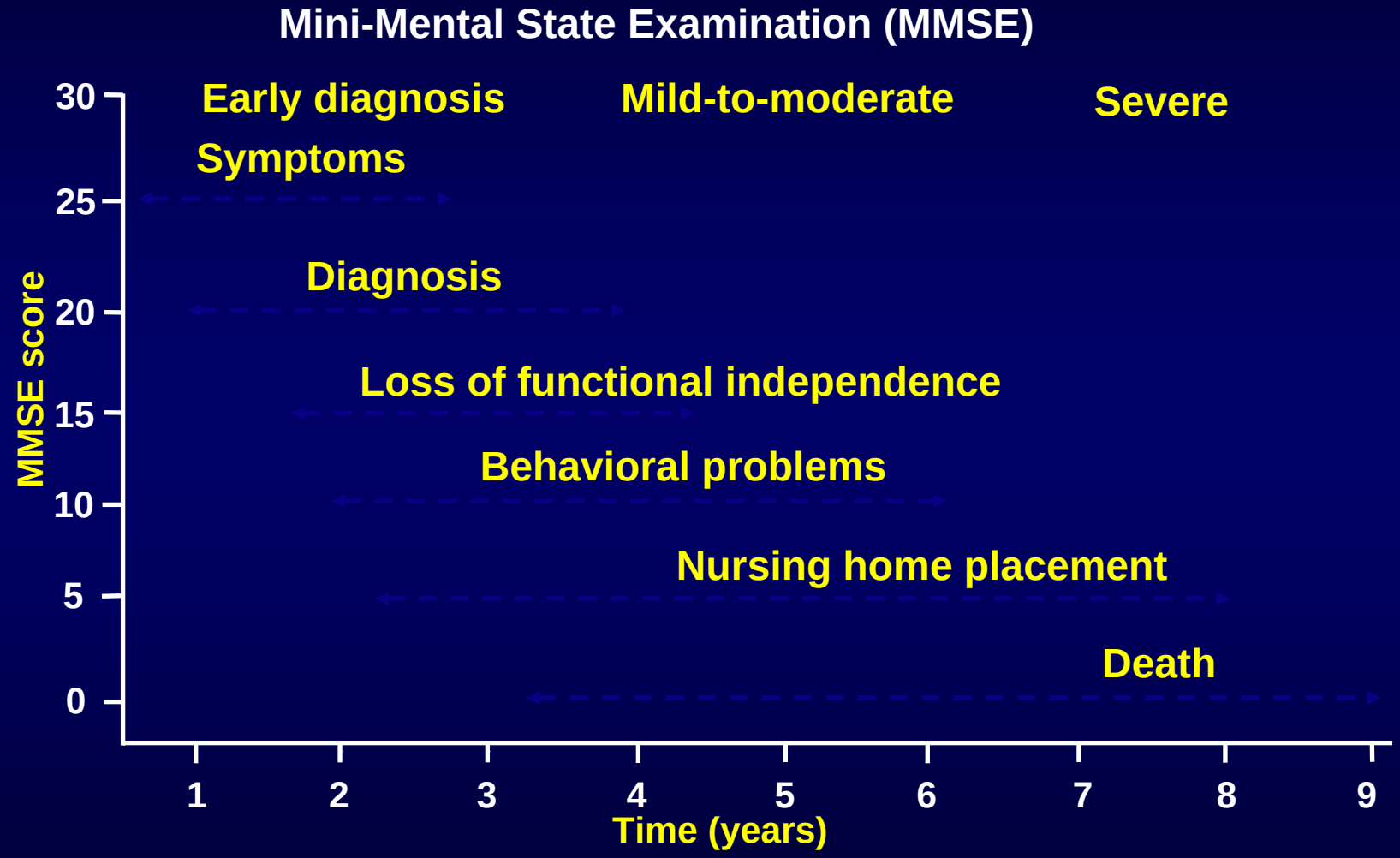
Alzheimer A. *Allegmeine Zeitschrift für Psychiatrie*. 1907;64:146-148.

Dementia
Prevalence Increases with Age



Larson EB et al. *Annu Rev Public Health.* 1992;13:431-449.

Natural History of AD



Reprinted with permission from Feldman H and Gracon S, In *Clinical Diagnosis and Management of Alzheimer's Disease.* 1996:239-253.

Indications for Evaluation of AD

- Difficulty in learning and retaining new information
- Difficulty in performing complex tasks
- Impaired reasoning ability
- Problems with orientation and spatial abilities
- Language difficulties
- Depression
- Behavioral changes

Costa PT et al. 1997. AHCPR Pub. # 19

Standard Medical Evaluation of AD

- Patient history and complete physical examination
- Neurologic evaluation
- Psychologic evaluation
- Laboratory tests
- Brain imaging

Laboratory Tests

- Complete blood count
- Serum electrolytes (including calcium)
- Liver function tests
- Blood urea nitrogen and creatinine
- Thyroid-stimulating hormone
- Serum vitamin B_{12} level

Fillit H, Cummings J. *Manag Care Interface*. 2000;13:51-56.
Geldmacher DS, Whitehouse PJ. *Neurology.* 1997;48(suppl 6):S2-S9.

Nonroutine Laboratory Tests

- Apolipoprotein E genotyping
- Cerebrospinal fluid analysis for
  - Tau protein
  - β-amyloid (1-42)

Roses AD. *Ann Neurol*. 1995;38:6-14.
Kurz A et al. *Alzheimer Dis Assoc Disord.* 1998;12:372-377.
Tapiola T et al. *Neurobiol Aging.* 2000;21:735-740.

Neuroimaging: CT and MRI

- Computed tomography (CT) and magnetic resonance imaging (MRI) are indicated with:
  - Headache suggestive of brain lesion
  - Evidence of focal brain lesion
  - Abrupt or rapid onset of cognitive decline
  - Onset of dementia before age 65
  - Atypical clinical features
  - Gait changes or motor signs only
  - Seizures

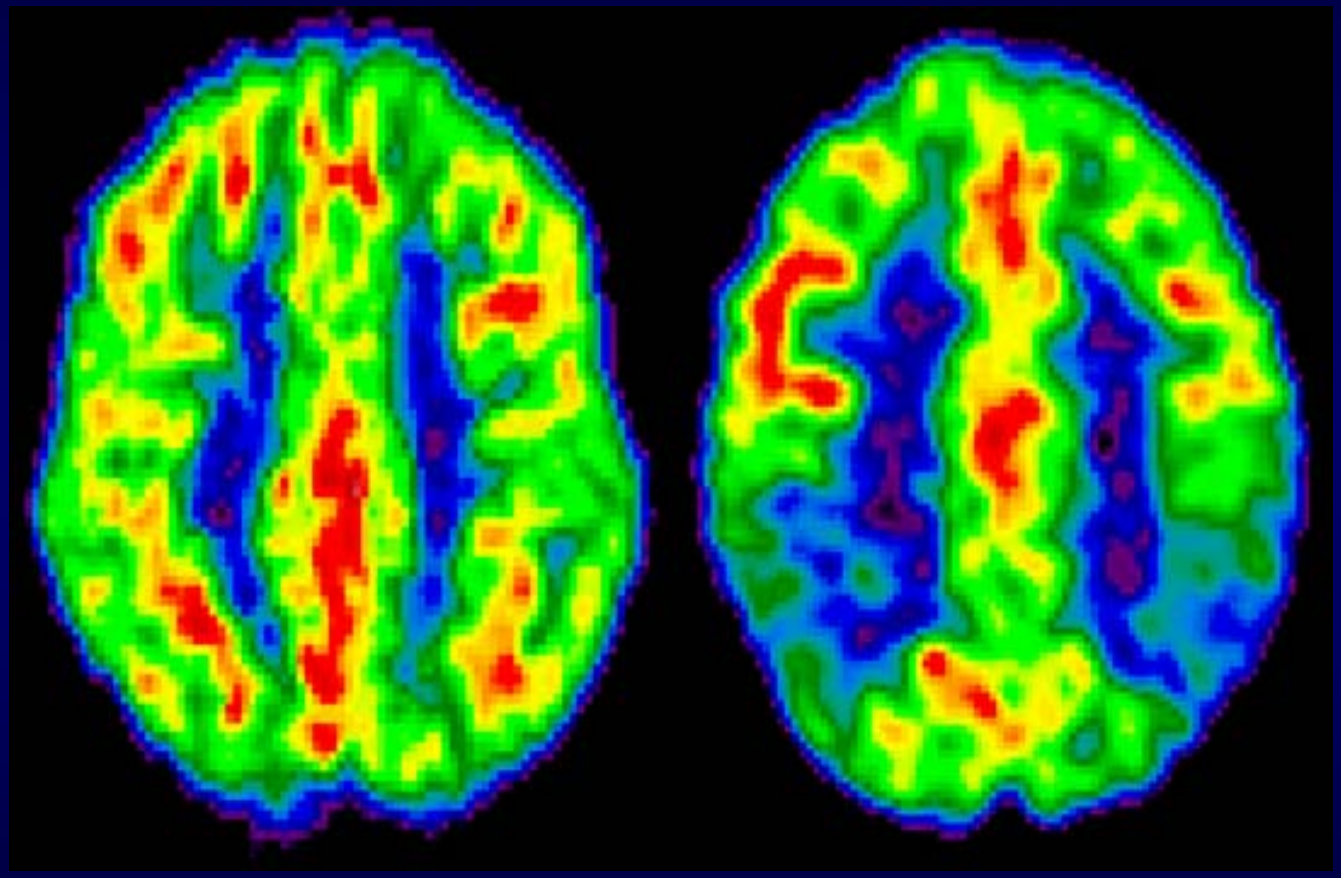
Fillit H, Cummings J. *Manag Care Interface*. 2000;13:51-56.

Neuroimaging: SPECT and PET

- Cerebral blood flow and glucose metabolism measured by single photon emission computed tomography (SPECT) and positron emission tomography (PET) can contribute to AD diagnosis
- SPECT and PET typically show reduced activity in the parietal lobes in AD

Fillit H, Cummings J. *Manag Care Interface*. 2000;13:51-56.
Chui H, Zhang Q. *Neurology.* 1997;49:925-935.

Typical AD PET Scan



Provided courtesy of M. Mega, MD, PhD, Department of Neurology, UCLA School of Medicine.

AD Is Under-diagnosed

- Early AD is subtle—the initial signs and symptoms are easily missed
- Less than half of AD patients are diagnosed
- Undiagnosed AD patients face unnecessary added social, financial, and medical problems
- Early diagnosis and appropriate intervention may lessen disease burden

Sano M et al. *N Engl J Med*. 1997:336:1216-1222.

Donepezil (Aricept®):

Reversible acetylcholinesterase inhibitor

- Longer duration of action than tacrine
- Specificity for acetylcholinesterase
- Not associated with liver toxicity
- Once daily dosing
- Start 5 mg/day, may increase to 10 mg/day after 4-6 weeks
- More cholinergic side effects reported at 10 mg/day

Rivastigmine (Exelon®):

Reversible Acetylcholinesterase and Butyrylcholinesterase Inhibitor

- Benefits cognition, ADL's, behavior
- Twice daily dosing
- Start 1.5mg BID for one month; increase each dose by 1.5mg every month until reaching 6mg BID as tolerated
- Cholinergic side effects

Galantamine (Razadyne®)

- Galantamine has a dual mechanism of action
  - Competitive inhibition of acetylcholinesterase[1]
  - Allosteric modulation of presynaptic and postsynaptic nicotinic receptors[2]
- Galantamine improves major aspects of AD (e.g., cognition, behavior, function)[1]
- Galantamine is generally safe and well tolerated[1]
- 4mg bid 4 weeks, 8mg bid 4 weeks, then 12mg bid

Namenda Clinical Summary

- Memantine treatment was associated with less decline vs placebo on cognition (SIB), function ($ADCS\text{-}ADL_{19}$), and global change (CIBIC-Plus)
- Patients treated with memantine + donepezil performed significantly better on cognitive, functional, global, and behavioral outcome measures compared with patients treated with donepezil alone
- Memantine monotherapy demonstrated improvement, as well as reduced care dependence, in dementia patients

Sources: Reisberg B, et al. *N Engl J Med*. 2003;348:1333-1341.
Tariot P, et al. *JAMA*. 2004;291:317-324.
Winblad B, et al. *Int J Geriatr Psychiatry*. 1999;14:135-146.

Other Treatments Available

- Gingko Biloba
- Vitamin E
- Estrogen
- NSAIDS
- Folic Acid
- Antimitotic Agents
- Immunization
- Neuroprotective

MCI Research

- Peptide fragment of a neuroprotective protein
- May work by interaction with tubulin
- May protect from nerve cell destruction