MEDICAL CARE OF PATIENT WITH DEMENTIA

INNA SHEYNER MD, CMD
ASSOCIATE PROFESSOR
UNIVERSITY OF SOUTH FLORIDA
COLLEGE OF MEDICINE
DEPARTMENT OF INTERNAL MEDICINE
DIVISION OF GERIATRICS
79 y/o Ms. B admitted to your service from home due to increased lethargy and confusion. She is awake, oriented to her name only and denies any complaints. Her husband is by her bedside...
According to him, Helen was diagnoses with “mild dementia” about two years ago and requires only minimal assistance in her activities of daily living.

On the morning of admission Helen refused to get up and was more drowsy than usual.
Dementia...

- is a disorder that is characterized by
- impairment of memory
- at least one other cognitive domain (aphasia, apraxia, agnosia, executive function).
- these must represent a decline from previous level of function and
- be severe enough to interfere with daily function and independence.
“Doctor, sometimes I forget where do I park my car…”

- Normal aging
- Mild Cognitive impairment
- Dementia (mild, moderate, severe)
Normal aging

- Successful aging
- Usual aging
- Impaired aging
Changes with aging...

- **Attention** (sustained attention and selective attention) – do not decline with age
- **Language** is well preserved with age, but speed of retrieval decreases with age
- **Executive function** will have very mild decline with successful aging
Changes with aging...

- no significant decline in usual well-learned activities
- Changes will be seen in:
  - Speeded tasks
  - Processing new information
  - Speed of information retrieval
  - Complex problem-solving
  - Mental flexibility
“Is there any state in between changes of normal aging and dementia?”…

Mild Cognitive Impairment

- No uniform diagnostic criteria
- Diagnosis is clinical
- Based on following features:
  - Memory complaint
  - Objective memory impairment
  - Normal general cognitive function
  - Preserved activities of daily living

Wednesday, February 24, 2010
Different types of MCI:

- Amnestic MCI
- Multiple domains slightly impaired MCI
- Single non-memory domain MCI*

Risk of dementia

Is higher in MCI group

(3.1 times higher in one study*, 4–8 times higher in another study**)


Management of MCI

- To monitor
- To manage comorbid conditions
  (American Academy of neurology)

Recent study on treatment of MCI with Vitamin E and Aricept (Peterson R, PH.D., MD., Thomas R., PH.D, et all Vitamin and Donepezil for the treatment of Mild Cognitive Impairment; N Eng J of Med; June 9, 2005 352:2379–2388) concluded that Vitamin E has had no benefit in patients with mild cognitive impairment and Donepezil was associated with lower rate of progression to Alzheimer’s disease during the first 12 month of treatment, the rate of progression to Alzheimer’s disease after three years was not lower than in placebo arm.
“Should I screen my patients for MCI?”

At present there are no recommendations to screen asymptomatic individuals for MCI.
Most common dementia syndromes are:

- Alzheimer’s disease (60%-80%)
- Vascular Dementia (10%-20%)
- Dementia with Lewy Bodies (10%-20%)
- Frontotemporal Dementia (15%-20%)
- Reversible dementia (2%-5%)
Alzheimer’s disease is a progressive neurological disorder that results in memory loss, personality changes, cognitive dysfunction and functional impairments.

Alzheimer’s disease is a continuous process which results in Alzheimer’s dementia
“Why does it called Alzheimer’s disease?”

Dr. Alois Alzheimer was a German neuropathologist who first described in 1905 five patient’s with dementia and specific changes on autopsy (neuritic plague and neurofibrillary tangles)
“HOW ACCURATE IS A DIAGNOSIS?”

Diagnosis is clinical and reasonably accurate (87% of clinically diagnosed cases of Alzheimer’s dementia were confirmed on autopsy *

---

“What kind of criteria are being used for diagnosis?”

**NINCDS–ADRDA** (the National Institute of Neurological and Communicative Disorders and Stroke and Alzheimer’s Disease and related Disorders Association) – most commonly used in research, has 80% positive predictive value.

**DSM–IV** criteria has sensitivity of 76% and specificity of 80%*

OTHER COMMON DEMENTIA SYNDROMES...

Vascular Dementia:
No uniform diagnostic criteria exist
- Features include onset of cognitive deficit associated with a stroke, abrupt onset of symptoms with stepwise course, infarcts on cerebral imaging
- Neurological deficit on physical exam
Vascular dementia...

There is significant overlap exist between Vascular Dementia and Alzheimer’s Dementia

- 24%–28% of patients with Alzheimer’s dementia had vascular pathology*
- Community–based autopsy series found that 45% of patients with clinical diagnosis of Alzheimer’s disease also had significant cerebrovascular pathology**

*Massoud,F, Devi,G, Stern,Y et al. A clinicopathological comparison of community–based and clinic–based cohorts of patients with
Dementia with Lewy Bodies

Clinical features include:
- Gradually progressive dementia
- Fluctuation in cognition
- Persistent well-formed hallucinations
- Motor features of Parkinsonism

Supportive features include:
- Repeated falls
- Syncope
- Sensitivity to neuroleptics*
**Dementia with Lewy Bodies...**

*Is clinical diagnosis and is accurate in 50% of cases*

Frontotemporal Dementia

- Is a clinical syndrome of disordered executive function and disinhibited behavior
- Cognitive testing may be normal or minimally affected
- Focal atrophy of the frontal and temporal lobes is present (in the absence of Alzheimer’s pathology)*

“What is Pick’s disease?”

Arnold Pick described behavioral and aphasic syndromes associated with frontotemporal atrophy about 100 years ago.

First description was based on gross examination of frontal lobes and clinical presentation.
Pick’s disease...

Later “Picks bodies” – intracytoplasmic inclusions, and “Pick’s cells” – large ballooned neurons, were recognized.

Currently “Pick’s disease” is a histological diagnosis and restricted to certain criteria.

How good are we?

- 21% of demented patients were not diagnosed with dementia on the medical ward
- 20% of nondemented patients were labeled as demented*

- The cognitive symptoms are not occurring exclusively during the course of delirium
- The cognitive symptoms are not better accounted for by a major psychiatric diagnosis
- The cognitive symptoms are not better accounted for by a systemic disease or another brain disease

* Barrett, JJ, Haley, WE, Harrell, LE, Powers, RE. Knowledge about Alzheimer disease among primary care physicians, psychologists, nurses, and social workers. Alzheimer Dis Assoc
Clinical judgment has 85% sensitivity and 82% specificity*

DSM-IV criteria are 76% sensitive and 80% specific

NINCDS criteria are 92% sensitive and 65% specific **


** Up-to-date 2009
Evaluation of Dementia

American Academy of Neurology Practice Guidelines

- Complete history
- Physical examination (including detailed neurological examination)
- Cognitive evaluation
- Laboratory testing
- Neuroimaging
**Cognitive Testing**

Mini – Mental State Examination

- Takes 7 min to perform
- Has sensitivity of 87% and specificity of 82% with 24/30 being used as a cutoff point.

**Limitations:**

- Not sensitive in mild dementia
- Not sensitive in patients with high educational level
Cognitive testing...

Mini-Cog
- Consist of clock-drawing task and recall of three unrelated words.
- Scoring based on simple decision tree:
  None of the words recalled – demented, all of the words recalled – non-demented, in between – scored based on clock-drawing test

Mini-Cog has comparable sensitivity (76%) and specificity (89%)
Laboratory testing

Supported by American Academy of Neurology:
- B-12 levels
- Thyroid testing*

No clear evidence-based data exists on "routine":
- CBC, electrolytes, liver function tests
- PRP is not recommended for a routine use

Supported by American Academy of Neurology:
- Neuroimaging with noncontrast CT or MRI

Wednesday, February 24, 2010
What are the risk factors?

Age is the strongest risk factor.

Annual incidence of dementia was:
- 0.6% for individuals ages 65–69 years
- 1.0% for individuals ages 70–74 years
- 2.0% for individuals ages 75–79 years
- 3.3% for individuals ages 80–84 years
- 8.4% for individuals 85 years old and older*

**Risk factors...**

**Family history**
- Persons who has first degree relatives with Alzheimer’s disease have 10%-30% risk developing this disorder*

**The apolipoprotein E** (ApoE) epsilon 4 (e4) genotype appears to predispose to the development of Alzheimer’s disease. However, many patients who are homozygotes for this allele will not develop Alzheimer’s disease, therefore application of this test on larger population would lead to overdiagnosis of Alzheimer’s disease.**

Risk factors...

- Hypercholesterolemia may increased risk of dementia*
- Diabetes mellitus is associated with increased risk for dementia**

Social and physical activity are inversely associated with risk for dementia*

Higher levels of education have been associated with reduced risk of Alzheimer’s dementia *

Alcohol may have protective effect in light to moderate drinking

Rotterdam Study reported a U-shaped association between alcohol use and risk of dementia among 5395 subjects over six years, with the lowest risk (hazard ratio 0.58; 95% CI 0.38–0.90) among consumers of one to three drinks per day **


Risk factors...

- Smoking has been associated with increased risk for dementia*
- At least one study found no association**

*(Almeida, OP, Hulse, GK, Lawrence, D, Flicker, L. Smoking as a risk factor for Alzheimer's disease: contrasting evidence from a systematic review of case-control and cohort studies. Addiction 2002; 97:150,

“What are the treatment options?

- **Symptomatic treatment**
- **Disease-modifying treatment**
Symptomatic treatment:

- Symptomatic treatment of memory disturbance (directed toward augmentation of cholinergic activity in the brain). Four cholinesterase inhibitors are currently approved for dementia treatment in the USA (tacrine, donepezil, rivastigmine and galantamine)

- Symptomatic treatment of behavioral disturbance:
  1. Non-pharmacological (improved personal care, aromatherapy, pet therapy, music therapy)
The US Food and Drug Administration (FDA) issued a public health advisory on April 11, 2005 after determining that the use of atypical (second generation) antipsychotic medications for the treatment of behavioral disorders in elderly patients with dementia is associated with increased mortality. The FDA advisory reported the following observations as the basis for the decision:

- In 15 of 17 randomized controlled trials that enrolled a total of 5106 patients, the use of atypical antipsychotics (olanzapine, aripiprazole, risperidone, or quetiapine) was associated with a 1.6– to 1.7–fold increase in mortality compared with placebo.

- Most of the excess deaths associated with atypical antipsychotic use were due to cardiac events (eg, heart failure or sudden death) or infections (mostly...
Disease-modifying treatment.

Memantine

Antiglutaminergic treatment reduced clinical deterioration in moderate to severe Alzheimer’s disease.
Challenging issues in patients with dementia

- Decision-making capacity and surrogate decision-maker
- Comorbid medical conditions
- End-of life care issues
Decision-making capacity is the ability to understand information relevant to a decision and to appreciate foreseeable consequences of a decision or lack of a decision. Capacity is specific to a particular decision.*

No established set of criteria exists for determining a patient’s capacity. Generally assessed by following criteria:

- Can the patient understand the particular treatment being offered?
- Can the patient make a decision regarding the treatment that being offered?
- Can the patient communicate verbally?
Is a legal form and refers to mental, cognitive or behavioral ability required to perform a particular act or to assume some legal role.

**Competency (incompetence)** is a legal decision made by judge.

Florida Law amended Section 765.204 in 2001 and now allows the attending physician to determine capacity solely on his own evaluation (if MD thinks
"Surrogate" means any competent adult expressly designated by a principal to make health care decisions on behalf of the principal upon the principal's incapacity.

"Proxy" means a competent adult who has not been expressly designated to make health care decisions for a particular incapacitated...
**Surrogate...**

- To make someone a “surrogate” – patient has to complete a form, signed by two witnesses.

- Proxy:
  - The patient’s spouse
  - An adult child
  - A parent of the patient
  - The adult sibling
  - An adult relative
  - A close friend
Prognosis in patients with dementia

- Dementia is a progressive terminal illness with decreased life expectancy (3–9 years after a diagnosis)*
- Mortality rates are significantly higher for patients with dementia and coexisting medical problems
  - 6 month mortality was 53% in patients with pneumonia and dementia vs 13% in patients with pneumonia and no dementia**

* Mortality rates are significantly higher for patients with dementia and coexisting medical problems

** 6 month mortality was 53% in patients with pneumonia and dementia vs 13% in patients with pneumonia and no dementia
Dementia is a terminal illness...

- Deaths from dementia have steadily increased over the past decade...
- Dementia is a terminal illness
- Patients, families and health care providers must understand and be prepared to confront the end stage of this disease, which is estimated to afflict more than 5 million currently and expected to afflict more than 13 million by 2050
Dementia and diabetes

- Risk of developing dementia is doubled in patients with diabetes, who develops severe hypoglycemic episodes (trip to ER or admission)*

- Hypoglycemia can cause further cognitive decline in patient with pre-existing dementia (hypoglycemia can cause direct neuronal death, insulin can directly change energy metabolism in affected brain)

- Less aggressive glycemic targets should be set in patients with dementia

P. Anderson, “Hypoglycemia Increases Dementia Risk”, JAMA;
Infections are common complications of advanced dementia and are the most common cause of death of patients in the terminal stage of the disease.

One study demonstrated that bronchopneumonia was a cause of death in 59% of patients with Alzheimer’s Dementia and 64% of patients with Vascular Dementia.

UTI was listed as a cause of death in 5% of patients with dementia.

Sepsis was listed as a cause of death in 6% of patients with dementia.

*Morsa, Martilla 1986

**Olichney, Galasko 1995
Contributing Factors

- Changes in Immune function (loss of T-lymphocyte function, cell-mediated immunity was absent in 60% of LTC facility patients with dementia vs 18% of elderly patients without dementia living at home).
- Atypical presentation of the disease and inability of patients to report symptoms (in 250 LTC residents with UTI GU symptoms were absent in 90% of patients, confusion and lethargy were the most common presenting symptoms (60%), and fever was present in 40% of patients.)
Dementia and Falls

- Dementia is an independent risk factors for falling
- Nursing Home residents with dementia were nearly twice as likely to fall as those without dementia
- Dementia can increase risk of falling by impairing judgment, gait, visual-spatial perception, and the ability to recognize and avoid hazards.
- Fall-prevention measures should be implemented and maintained
Eating difficulties are very common and are multifactorial.

Changes with normal aging include:
- increased taste threshold
- decreased sense of smell

Abnormal factors:
- constipation
- depression
- inability to acquire or prepare food
- decreased hunger
Treatment of cachexia in elderly...

- Progestational agents (megestrol acetate 400 mg bid)*
- Corticosteroids**
- Dronabinol***
- Antidepressants****
- Melatonin*****
- Feeding tube placement


Feeding tube

“What would be the goals of care for feeding tube placement, doctor?”

- to improve survival
- to improve nutritional status (in general and to improve wound healing of pressure ulcers)
- to prevent aspiration
- to improve quality of life
Feeding tube... evidence-based data

“To improve survival…”

- no published studies are found using MEDLINE search to support the theory that feeding tube can improve survival

- feeding tube placement itself can cause death (mortality during PEG tube placement ranges from 0%-2% and perioperative mortality ranges from 6%-24%)

Feeding tube...

“Improvement in nutritional status to improve wound healing”

40 patients with tube feedings were followed for several months and despite adequate calories and protein provided, subjects showed weight loss and severe depletion of lean and body mass...*

– two studies that followed 800 patients during 6 months period reported that tube feeding was not associated with healing of existing pressure ulcers, nor with protection from new pressure ulcers**

“ To prevent aspiration”

– no data available by MEDLINE search regarding prevention of aspiration pneumonia by using tube feedings

– case-control studies identified tube feeding as a risk factor for aspiration pneumonia***

Feeding tube...

- “To improve quality of life”
- 71% of patients with dementia who had feeding tubes were restrained, regardless of the type of tube used*
- data available from experience of patients dying from cancer or stroke who had anorexia and who were lucid to describe their sensation indicated that such patients do not experience more than transient hunger and that thirst can be relieved by mouth swabs and ice chips**
Cerebrovascular disease worsens cognitive impairment and increases mortality among patients with dementia*

Prophylaxis against stroke should be provided to qualified patients (pharmacotherapy such as antiplatelet agent (aspirin or clopidogrel) or anticoagulation with warfarin

*(Snowdon DA, Greiner LH, Mortimer JA, Riley KP, Greiner PA, Markesbery WR. Brain*
End-of-life issues

- Number of patients with diagnosis of dementia admitted to hospice each year is significant.
- 1995 guidelines were developed by Alzheimer’s and Related Diseases Association to determine eligibility for Medicare coverage of hospice services.

Characteristics of patients with end-stage dementia
(National Hospice Organization)

- At or above stage seven on the Functional Assessment Staging Scale
- All of the following characteristics:
  - Unable to dress without assistance
  - Unable to bathe
  - Urinary and fecal incontinence
  - Unable to communicate
  - Unable to ambulate without assistance
  - Presence of medical complications such as aspiration pneumonia, pyelonephritis, septicemia, pressure

Wednesday, February 24, 2010
Number of decisions has to be made for optimization of outpatient care:
- appropriate discharge setting:
  - home,
  - SNF,
  - ALF,
  - LTC

IDS team assistance (PT /OT – functional performance level, living skills (KELS), Social worker, speech therapist,