Evaluation and Management of the Frail Elderly Patient
Overview of Dementia Syndrome

Goals and Objectives
1) Discuss the definition of frail elderly
2) Describe the process of comprehensive geriatric assessment
3) Discuss preventive and treatment interventions commonly prescribed in the frail elderly.
4) Discuss diagnoses and management of dementia syndrome

Demographics & Trends
- Population aging
- The number of elderly in the US will double between the years 2000 and 2030.
- The proportion of persons with significant disability rises dramatically with age
- Aging is accompanied by increased morbidity and declining health (chronic illness)
### Projected Growth in US Elder Population

<table>
<thead>
<tr>
<th>United States</th>
<th>Percent 1995</th>
<th>Percent 2025</th>
<th>Percent Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aged 60+</td>
<td>16.6</td>
<td>24.6</td>
<td>89.3</td>
</tr>
<tr>
<td>Aged 85+</td>
<td>1.4</td>
<td>2.1</td>
<td>93.9</td>
</tr>
</tbody>
</table>

### Frailty

- Biologic syndrome of decreased reserve and resistance to stressors, resulting from cumulative declines across multiple physiologic systems, and causing vulnerability to adverse outcomes.

### What is frailty?

- Being dependent on others
- Experiencing accelerated aging
- Having many chronic illnesses
- Having complex medical & psychosocial problems
- Being at substantial risk of dependency & other adverse health outcomes
- Having “atypical” disease presentations
- Being able to benefit from specialized geriatric programs

### Frailty

- Clinical syndrome in which 3 or more following criteria were present:
  1. Unintentional weight loss
  2. Self reported exhaustion
  3. Weakness (grip strength)
  4. Slow walking speed
  5. Low physical activity
Frailty

- Prevalence: community dwelling - 6.9%
- Increased with age and F>M
- Associated with AA, lower education and income, poorer health, chronic comorbid diseases and disability

Components of Geriatric Assessment

- Medical
- Cognitive
- Affective
- Functional
- Social- support/caregiver
- Economic
- Environmental
- Advance Directives

Medical Assessment

- Visual Impairment
- Hearing Impairment
- Malnutrition/Weight loss
- Urinary Incontinence
- Gait & Balance Disorder
- Polypharmacy
Vision Loss Screeners

- Snellen Eye Chart: fail if can’t read the 20/40 line with the best eye
- Questions: “Do you have difficulty driving or watching television or reading or doing any of your daily activities because of your eyesight?” (If they wear glasses, add “Even while wearing your glasses?”)

Hearing Loss Screeners

Assess first for cerumen impaction
- Audioscope: set at 40-dB
  Fail if they are unable to hear 1000-Hz or 2000-Hz tones in both ears
- Whisper test: whisper 3 letters/numbers at distance of 1 foot from ear being tested
  Fail if they are unable to hear 50% after three repetitions

Malnutrition/Weight Loss Screeners

- Ask the pt: “Have you lost 10 lbs in the past six months without trying to do so?”
- Evaluate BMI (wt in kg/ht in m2)
- No single objective test to assess nutritional status
- Poor nutrition may reflect medical illness, depression, functional losses, financial hardship

Urinary Incontinence

- Ask: “In the last year, have you ever lost your urine and gotten wet?”
- If the pt says yes, then ask: “Have you lost urine on at least six separate days?”
- If the pt says to both questions s/he fails the screen
Gait & Balance Disorder

• “During the past year, have you fallen all the way to the ground or fallen and hit something like a chair or stair?”
• “Up & Go” test: Time the pt after asking: “Rise from the chair, walk 10 ft, turn, walk back to the chair and sit down. Fail if s/he take more than 20 sec to complete the task.

Polypharmacy

• Ask to bring all the meds including OTC, herbal and supplements
• Start low, Go slow
• Beers Criteria for the medications to avoid in elderly

Avoiding Potentially Dangerous Drugs: The Beers Criteria

• Consensus-based list of potentially inappropriate medications for older adults
• Published 1991, revised 1997, 2002
• Statistical association with ADEs has been documented
• Adopted for nursing-home regulation
• Does not account for the complexity of the entire medication regimen

Beers Criteria: Anticholinergic Medications

• Drug classes
  • Antihistamines
  • Tricyclic antidepressants
  • Antispasmodics and muscle relaxants
• Adverse Effects
  • Dry Mouth
  • Urinary retention
  • Constipation
  • Confusion, delirium

Arch Intern Med 2003;163:2310-2314.
Avoiding Potentially Dangerous Drugs: The Beers Criteria

- Anticholinergic medications
- Decongestants
- Hypertension
- Bladder outflow obstruction
- Meperidine
- Benzodiazepines


Depression in Elderly

- Community dwelling 4 - 10%
- Clinical settings up to 30%
- Nursing homes up to 60%
- 40% of Alzheimer’s disease patients
- More somatic complaints
- Overlap of symptoms from medical illness

Affective Assessment

- Ask: “Do you often feel sad or depressed?”
- Geriatric Depression Scale (short form): 15 items

Geriatric Depression Scale (Short Form)

- Instructions: Choose the best answer for how you felt over the past week.

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Answer</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Are you basically satisfied with your life?</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Have you dropped many of your activities and interests?</td>
<td>Yes</td>
<td>1</td>
</tr>
<tr>
<td>3.</td>
<td>Did you feel that your life is empty?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>4.</td>
<td>Did you often feel lonely?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>5.</td>
<td>Are you in good spirits most of the time?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>6.</td>
<td>Are you afraid that something bad is going to happen to you?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>7.</td>
<td>Did you feel happy most of the time?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>8.</td>
<td>Did you often feel helpless?</td>
<td>Yes</td>
<td>1</td>
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<td>9.</td>
<td>Did you have too many worries more than others?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>10.</td>
<td>Did you feel you were in good health?</td>
<td>Yes</td>
<td>1</td>
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<td>11.</td>
<td>Did you feel happy most of the time?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>12.</td>
<td>Did you feel that your abilities are less than they used to be?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>13.</td>
<td>Did you feel sad or depressed most of the time?</td>
<td>Yes</td>
<td>1</td>
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<td>14.</td>
<td>Did you feel that most people are friendlier than you are?</td>
<td>Yes</td>
<td>1</td>
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<tr>
<td>15.</td>
<td>Did you feel that most people are less friendly than you are?</td>
<td>Yes</td>
<td>1</td>
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</tbody>
</table>
**Functional Assessment**
- BADLs: bathing, dressing, toileting, transferring, continence, feeding
- IADLs: using telephone, shopping, preparing meals, housekeeping, doing laundry, taking medication, using public transportation, handling finances
- AADLs: occupational, recreational, community services

**SOCIAL ASSESSMENT**
- Availability of a personal support system
- Caregiver burden
- Economic well-being
- Safety of the home environment
- Elder mistreatment *(If concerned, consider referral to visiting nurse)*
- Advance directives

**Prevention Programs for Elderly**
- Important to separate the well elderly from the frail elderly populations
- Prevention usually shift from extending life to extending or preserving quality of life
- Primary, secondary prevention of disease, tertiary prevention, prevention of frailty, prevention of accidents and prevention of iatrogenic complications

**Benefits of Exercise**
- CAD, Mortality, DM, HTN, CHF, obesity, insomnia, Parkinson’s disease, osteoporosis, depression, COPD, QOL, lipids, functional decline, cognition, inflammatory mediators
- Osteoarthritis
- Falls
- Frailty
Exercise and Frailty

- Problems with lower extremity function (walking speed and chair rising) predict future disability  
  Guralnik et al NEJM 1995
- Sedentary people have a longer period of disability prior to death, compared to more active people  
  Vita NEJM
- But can exercise reduce or prevent frailty?

Atlanta FICSIT

- RCT: 200 healthy, >70, community dwelling
- 15 weeks Tai Chi vs. hi-tech vs. education
- 4 month follow up
- Results
  - decreased fear of falling
  - 47% decrease in falls in Tai Chi vs. other groups (p=0.009)  
   Wolf JAGS 1996
Exercise and Frailty

- RCT of 100 nursing home patients, able to walk 6 meters
- Mean age 87 years
- Intervention: weight training, 45 minutes 3X/wk for 10 weeks

Fiatarone NEJM 1994

Exercise and Frailty

- Results
  - Increase in gait speed and walking endurance
  - Greatest benefit in the weakest subgroup

Fiatarone NEJM 1994

WHY SCREEN FOR COGNITIVE LOSS?

- Most people with dementia do not complain of memory loss
- Cognitively impaired older persons are at ↑ risk for accidents, delirium, medical nonadherence, and disability

Prevalence of Alzheimer's disease

- 10% of those aged 65+
- Nearly 50% of those aged 85+

What is 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.
- Small et al. JAMA 1997;278:1363-1371
DDX of Dementia

- Degenerative disorders: AD, FTD, DLB, PD
- Vascular dementia
- Infections: neurosyphilis, HIV
- Neoplasms
- Metabolic/Nutritional: Thyroid, VitB12 def.
- Drugs and toxins
- NPH

Possible Reversible Causes of Dementia

D - Drugs
E - Emotional disorders (depression)
M - Metabolic/endocrine disorders
E - Eye and ear disorders
N - Nutritional/NPH
T - Tumor/trauma
I - Infection (neurosyphilis)
A - Alcoholism/atherosclerosis

Evaluation of Dementia

- History - time course
- Physical Examination
- Mental Status Examination
  MMSE <= 23 suggests dementia
  - dependent on education, language, and cultural background

Cognitive Assessment

<table>
<thead>
<tr>
<th>Mini-Mental Status Examination (MMSE)</th>
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<tbody>
<tr>
<td>Raw Score</td>
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Lab/X-ray Evaluation in Dementia

- Blood studies
  - CBC, Chemistry/LFTs, B12, TSH, Syphilis serology
- Brain Imaging
- Neuropsychological testing
- Additional tests if clinically indicated: HIV, EEG, CSF, PET or SPECT

Alzheimer’s Disease

- 60-70% of cognitive impairment in elderly
- 1% among those 60-64 years old to 40% of those aged 85 yrs and older.
- 4th leading cause of death in the U.S.
- 3rd most expensive disease ($100 b/yr)

Pathology

**AD is a progressive neurodegenerative disorder associated with:**

- Accumulation of extracellular senile (beta-amyloid [Aβ]) plaques
- Accumulation of intracellular neurofibrillary tangles

Positron Emission Tomography: Cerebral Metabolism in Alzheimer’s Disease Progression and in Normal Brains
DSM IV Criteria of AD

- Development of multiple cognitive deficits manifested by both memory impairment and 1 or more of the following cognitive disturbances: aphasia, apraxia, agnosia, or disturbance in executive functioning
- Cognitive deficits cause significant impairment in social functioning and represent a significant decline from a previous level of functioning
- Course is gradual in onset with continuing cognitive decline
- Deficits are not due to any other CNS disorder, systemic illness, or substance-induced condition
- Deficits do not occur exclusively during the course of delirium

Clinical Disease Progression

Clinical Disease Progression

Years From Diagnosis

0 5 10 15 20 25 30

MMSE Score

0 1 2 3 4 5 6 7 8 9

Mild Moderate Severe

Cognitive Symptoms

Diagnosis

Loss of Functional Independence

Behavioral Problems

Nursing Home Placement

Death

Reprinted from Clinical Diagnosis and Management of Alzheimer’s Disease, H Feldman and S Gracon; Alzheimer’s Disease: symptomatic drugs under development, pages 239-259, copyright 1996, with permission from Elsevier.

Management of the Alzheimer’s Disease Patient

Treatment Goals

- Maintain quality of life
- Maximize function
- Enhance cognition
- Treat mood and behavior problems
- Educate and counsel caregiver to alleviate stress
  - Regular office visits
  - Frequent telephone contact with family members
  - Coordination of multidisciplinary team

Non-Pharmacologic Management

- Functional and safety assessment
- Reporting - driving and abuse
- Information/education
- Advanced directives
- Social and community services
- Alzheimer’s Association 800-272-3900
Pharmacologic Management

- Acetyl cholinesterase inhibitors
- NMDA receptor inhibitor
- Other agents
  - Vitamin E, Estrogen, NSAIDS, Gingko Biloba