Mental disorders: Dementia

Chapter 10 (p359-390)

- What were some of the words that were used to describe the disease?
- What did you learn about Alzheimer’s disease that you did not know before?
- What story touched you most? Why?
- What are the topics we need to cover to understand Alzheimer’s disease?

The Basics of Dementia

- Types of dementia
- Prevalence (statistics)
- Symptoms (warning signs)
- Diagnosis methods
- Prognosis (stages of disease)
- Effect of disease on brain
- Causes and risk factors
- Treatments/interventions
- How to care for a patient
- Effect on caregivers

Types of dementia

- Alzheimer’s disease (70% of all dementias)
- Vascular dementia (10-15%)
- Mixed dementia
- Parkinson’s disease
- Dementia with Lewy bodies
- Brain trauma
- Huntington’s disease
- Creutzfeldt-Jakob disease (CJD)
- Fronto-temporal dementia (Pick’s disease)
- Alcohol
- AIDS
- How can you differentiate between these form?

Alzheimer’s Association’s Report Facts and Figures 2012

- Prevalence
  - 5.4 million Americans (1 in 8 of 65+); 6th leading cause of death
  - 45% of 85+ yr olds
  - 3.4 million women (66% of cases); 4% of cases under 65yr
- Future stats
  - By 2030 65+ will account for 20% of population (71mil)
  - 2025 est 6.7 million 65+ with AD (30% more than today)
  - 2050 est 11-16 million (130% increase)
- Mortality
  - 85+ survive average of 4-8ys after diagnosis (max 20yr)
  - Longer in severe stage than any other
  - Often die from other causes (pneumonia most common)
  - By age 80, 75% of AD in nursing home vs 4% of non-AD population
- Cost of AD
  - 15 million Americans provide unpaid care for AD patients
  - Payments for care estimated at $200 billion in 2012
Causes of death

- Percentage Changes in Selected Causes of Death (All Ages Between 2000 and 2008)

Famous cases of AD
- Ronald Reagan, president
  - Diagnosed at 83 yrs; passed away at 93 yrs
- Carroll Campbell, former Republican senator of SC
- Aaron Copland, composer
- Norman Rockwell, artist
- Perry Como, singer
- Rita Hayworth, actress
- Rosa Parks, civil rights icon
- Sugar Ray Robinson, boxer
- E.B. White, writer
- Charlton Heston, actor
- Pat Summitt, coach

The warning signs of AD
- What would be possible warning signs?
  - Significant memory problem that interferes with daily life
  - Forgetting whole experiences
  - Difficulty performing familiar tasks at home, work, leisure
  - Inability to follow written/spoken directions
  - Challenges with planning or solving problems
  - Poor or decreased judgment
  - Changes in mood, personality, demeanor (anger)
  - Confusion with time and place (disorientation, wandering)
  - New problems with words (spoken or written)
  - Withdrawal from work or social activities

Assessment methods
- Diagnosis usually made by primary care physician
- If 65+ “late onset”; if before 65 “early onset”
- Diagnosis average of 8 yrs after symptoms; testing may take up to a year to complete
- Components of diagnosis:
  - Medical and family history
  - Psychiatric history
  - Behavioral changes – family member provides
  - Cognitive tests
  - Physical and neurologic exams
  - MRI to id brain changes – tumor, stroke?
- Biomarkers:
  - Proteins (beta-amyloid; tau) in cerebrospinal fluid, blood
  - Damage to nerve cells in brain (MRI)

MMSE
- AD = score on MMSE <25
- Mild: 21-25
- Moderate: 10-20
- Severe: <10

Snowdon’s “Nun study”
- 678 nuns in study
- Sister Mary: 101 at last assessment
- Cognitively intact
- Autopsy: Brain contained abundant tangles & plaques
### Stages of AD

- **Early mild cognitive impairment (MCI) or "preclinical AD"**
  - 10-20% of 65+ have MCI; 15% will have symptoms that lead to contacting doctor; 50% of those will develop AD in 3-4 yrs
- **Mild-early stage**
  - Memory impairments; impaired ability to count backward by 7s
  - Problems with complex tasks
  - Mood or personality changes
- **Moderate-mid stage**
  - Memory and thinking changes are noticeable
  - May need help with day-to-day activities (IADLs)
  - Confusion about time and place
  - Still remember significant personal details about self and family
- **Severe-late stage**
  - Loose awareness of recent events and surroundings
  - May remember own name, but difficult remembering personal history
  - Needs help with ADLs (dress, toileting, bathing, feeding, grooming)
  - Changes in sleep patterns
  - At very late stage: lose ability to respond to environment, become non-verbal, need help with all ADLs, reflexes abnormal, muscles rigid

### Sundowning

- Behavioral changes in evening
- Increased confusion, restlessness
- Increased agitation, mood swings
- More frequent for mid/late stage AD
- 20 – 45% of cases

### Effect of AD on brain

- Brain changes possible 20yrs before symptoms
- Accumulation of protein beta-amyloid outside neurons; protein tau inside neurons
- Info transfer at synapses fails; number synapses declines, neurons die
- Beta amyloid interferes with neuronal communication; contributes to cell death
- Tau inside blocks transport of nutrients; contributes to cell death

### AD brain vs. healthy brain

- Decreased size, weight, enlarged sulci, enlarged ventricles

### Causes and risk factors of AD

- Unknown! Multiple factors
- 1% of cases due to genetic mutation
- Greatest risk factor: age (but not normal aging process)
- Family history (due to environmental/lifestyle factors)
- APOE-e4 gene (higher risk but not guarantee)
- Cardiovascular disease factors
  - Physical activity, cholesterol, diabetes, smoking, obesity
- Social engagement
- Diet
- Head trauma (TBI)
- Gender
- Education
- Race
- African-Americans 2x and Hispanics 1.5x more likely

### Treatments and interventions

- No treatments available to stop AD; can’t alter course of terminal disease
- 4 drugs available to temporarily improve symptoms (effectiveness varies)
  - Cholinesterase inhibitors (prevent Ach breakdown): Razadyne (galantamine), Exelon (rivastigmine), and Aricept (donepezil)
  - NMDA antagonist (glutamate receptors): Namenda (memantine), an (used for moderate AD)
  - Vitamin E (antioxidant)
- Physical and mental exercise!
- Behavioral tips:
  - Unless behavior is dangerous then do not change
  - Create calm, safe setting for person’s ability
  - Eliminate clutter, noise
  - Develop routines, minimize changes
  - Use redirection (not arguing or disagreeing)
  - Be sensitive to frustrations
Interventions

- Learning theory
- Spaced retrieval
- Montessori methods

How to care for an AD patient?

- Acceptance of disease and change in person
- Make home safe (kitchen, bathroom, bedroom)
- How to help with IADLs and ADLs
- Strategies:
  - Hand-over-hand
  - Mirroring (charades)
  - Provide instructions one step at a time
  - Limit choices
  - Use touch
- When there are behavioral problems:
  - Describe behavior in detail (where, when); keep journal
  - Try to figure out reason (cause)
  - Preference for past lifestyle; environmental causes
  - Figure out solution
  - Anticipate situation then apply solution

Dementia Dialogues

- Part 1: The Basic Facts (An Introduction to Dementia)
- Part 2: Keeping the Dialogue Going (Communication Skills)
- Part 3: It’s a Different World (Environment: Safety and Helpful Hints)
- Part 4: It’s Nothing Personal (Addressing Challenging Behaviors)
- Part 5: Now What Do I Do? (Creative Problem Solving)

Caregivers

- 15 million+ provide unpaid care for dementia pts
- In 2011: 17.4 billion hrs of unpaid care = $210 billion
- 80% by family members
- 50% live in same household
- 30% have kids (<19yr)
- 50% taking care of parent
- 6-17% taking care of spouse

Caregivers Links

- Alzheimer’s Association: “In the news”
  - http://www.alz.org/news_and_events_in_the_news.asp
- Alzheimer’s disease and diabetes
  - http://www.msnbc.msn.com/id/3032619/ns/nightly_news/#44586323
- Experimental drug to slow down AD
  - http://www.chinawestnews.com/video/watch/?id=74153926&s=inc=inc
- Person’s gait could be sign of AD
  - http://usatoday.com/news/health/story/2012-07-15/walking-change-can-indicate-alzheimers/56157142/1
- Early diagnosis is key
- New methods to detect AD