Alzheimer’s Disease

A CE Course offered by Express Care Pharmacy
Learning Objectives

I. To become familiar with Alzheimer’s Disease and the diagnosis of AD

II. To become familiar with the 7 warning signs of Alzheimer’s Disease

III. To be familiar with Screening Tests

IV. To understand Treatment of Alzheimers Disease, including Non-Drug Therapy & Drug Therapy
Description/Key Features of Alzheimer’s Disease

- Premature and progressive death of brain cells
- Impaired memory
- Impaired orientation
- Loss of decision-making capacity
- Loss of self-care capacity
DSM-IV Definition of AD
(Diagnostic & Statistical Manual for Mental Disorders)

1. Memory impairment
2. One or more of...
   * Aphasia (language disturbance)
   * Apraxia (impairment in skilled motor tasks)
   * Agnosia (failure to recognize familiar objects)
   * Disturbances in executive functioning (planning, organizing, abstract thought)
3. Insidious onset and continued decline
4. Decline from previously higher level of function
5. Negative laboratory evaluation
Early Diagnosis and Treatment

- Treatable disease
- Early diagnosis - important
- Early Treatment
- Continue treatment to preserve function

Early and sustained treatment helps the patient to preserve function as long as possible.
Goals of Dementia Care Management

- Highest level of functioning
- Least restrictive environment
- Safe and nurturing environment
- Caregiver burden minimized
Dementia Care Continuum

- Home
- Senior apartment complexes
- Adult Day programs
- Continuous care retirement communities
- LTC facilities

(Alzheimer’s is found in patients in all segments for senior care continuum)
Prevalence of AD

The incidence of AD rises with increasing age.
- High level of suspicion
- Who is a suspect? Every person over 65
- Rate of AD are:
  - 1% for people at age 65
  - 10% for people at age 75
  - 35% for people at age 85
Barriers to Dementia Diagnosis in LTC

~Social skills often maintained in early AD
~Failure of caregivers and clinicians to recognize early signs
~Comorbid medical & psychiatric conditions
~Lack of trained professionals, time and reimbursement constraints
~Lack of a single diagnostic test
Standard Evaluation of AD Interview & Physical Exam

~Detailed/documented patient history & caregiver interview
  - Cognition
  - Intellectual performance
  - Ability to adapt

~Ability to attend to normal business activities and conduct activities of daily living
Alzheimer’s Disease in Skilled Nursing Facilities

1.8 million patients in skilled nursing facilities
- 50% incidence rate for AD
- 22% of those with AD are diagnosed
- 30% of those diagnosed are treated
- 6%-7% of AD patients receiving AD-specific treatment
Standard Evaluation of AD Neurologic Evaluation

A complete physical should include a neurological evaluation to look for other diseases.

~Other diseases that might impair memory
  -Localized neurological disorders
  -Metabolic disorders
  -Heart failure, diabetes, etc.
The 7 Warning Signs
Used to help recognize the possibility of AD early on

1. Asking the same question over & over again
2. Repeating the same story, word for word
3. Forgetting how to perform common tasks previously performed with ease
4. Losing the ability to pay bills or balance a checkbook
5. Getting lost in familiar surroundings and misplacing household objects
6. Neglecting to bathe or change into clean clothes while insisting they have taken a bath or that their clothes are still clean
7. Relying on someone else, such as a spouse, to make decisions or answer questions
Other Red Flags that might indicate the presence of AD

~Poor nutrition and weight loss
   - Cannot prepare meals
   - Forget to attend communal meals

~Change in sleep patterns; diurnal reverse

~Deterioration of once stable chronic disease
   - Non-adherence with medication

~Behavioral problems

~New psychoactive orders (e.g. anti-anxiety/antipsychotics)
Screening Tests

~Conduct test for patient if:
  - Caregiver describes a memory problem
  - Patient complains of decline memory
  - Patient is unable to answer usual medical history questions

~Perform tests for all new patients >65 years of age, to establish a baseline
Two Key Screening Tests

1. Folstein Mini-Mental State Examination

2. Clock Drawing
Folstein Mini-Mental State Exam

~Also known as MMSE

~Scoring range from 0-30, with the following scoring key:

28-30 = normal
25-27 = possible mild cognitive impairment
19-26 = mild dementia
10-18 = moderate dementia
0-9   = severe dementia
Clock Drawing Instructions

1. First draw a large circle for the patient on a blank sheet of paper
2. Next, ask the patient to insert all the numbers that regularly go on a clock
3. Third, ask the patient to draw where the hands of the clock should go if the time were 10 minutes until 2:00
Results of Clock Drawings

1. Perfect - Normal and MMSE = 30
2. Most numbers on clock, with hands (right or wrong) - Mildly impaired and MMSE = 23
3. Numbers almost right, no hands drawn - moderately impaired and MMSE = 17
4. No numbers and only a line drawn - Severely impaired and MMSE = 6
Screening in the LTC Setting
MMSE and Clock Drawing

~Who is to conduct the screening?
  -nurse, social worker, or pharmacist

~Training is essential
  -Ask questions
  -Interpret results

~Inter-rater reliability over time (Use the same screener if possible)
Clinical Expression of AD in Residential Care

Alzheimer’s Disease is complex.
It affects:
- Memory
- Behaviors
- Physical functioning (self-care capacity)
The combination of these makes AD a total body disorder
Goals of Treatment

Non-drug treatment goals

* Preventing the emergence of disruptive behaviors
* Maintaining cognitive, social, and personal skills
* Maintaining quality of life for patients with AD
Resident-Caregiver Communication Guidelines

~Use simple, slowly spoken sentences

~Allow time for processing

~Many residents with dementia will “mirror” caregiver’s affect
Creating the Optimal Environment

~Periodically inspect nursing units and residential areas for hazards

~Proper lighting is essential
   * Bright lights in daytime
   * Night lights in the evening

~Secure areas for “explorers”
   * Alzheimer’s Association “Safe Return” program
Realistic Goals of Drug Therapy for Alzheimer’s Disease

~Reduce effects of the illness
~Restore lost human connection and self-respect
~Lengthen period of self-sufficiency
~Delay need for higher level of care or nursing home placement
~Reduce caregiver burden
Under-Treatment of Alzheimer’s Disease

- Prevalence: 4,357,100
- Diagnosed: 2,658,000
- Treated: 1,713,000
- Treated w/CHe-I: 1,199,100
Cholinesterase Inhibitors (CHe-I)

~Slow the rate of decline in cognitive, functional, and behavioral domains
~Until the approval of memantine (Namenda), they were the only FDA-approved medications for treatment of mild to moderate AD
~Accumulating data for efficacy in severe Alzheimer’s disease
Cholinesterase Inhibitor Action

CHe-I block the breakdown of acetylcholine, in residents with AD and may temporarily stabilize the disease process or slow the loss of cognitive and functional abilities.
Cholinesterase Inhibitors
Approved for Treatment of Mild to Moderate AD

~Tacrine (Cognex) - Approved 1993
~Donepezil (Aricept) - Approved 1996
~Rivastigmine (Exelon) - Approved 2000
~Galantamine (Reminyl) - Approved 2001
Behavioral Effects of Cholinesterase Inhibitors

~Not unique to a single agent (difficult to draw conclusions about the superiority of any particular problems)
~Key behavioral effects
  * decrease apathy
  * decrease psychosis (delusions & hallucinations)
  * decrease anxiety
  * decrease agitation, but occasionally increases
~Role in non-AD disorders including Lewy Body Dementia
~Synergy with psychotropics
Monitoring Cholinesterase Inhibitors

~Monitor for GI adverse effects
  *nausea/vomiting/diarrhea
  *anorexia/weight loss (higher w/rivastigmine)

~Dizziness
~Leg cramps
~Insomnia/agitation
~No hepatotoxicity seen with any newer agents
~Eliminate concurrent use of anticholinergic drugs when possible
Cholinesterase Inhibitors: Current Options

~Indicated for mild to moderate AD
~Maximum benefits achieved with early therapy
~Continuous therapy is most beneficial
~Evidence of continued benefits over longer periods
~Efficacy in mild, moderate, and severely impaired residents, including those residing in nursing homes
When to Stop Cholinesterase Inhibitor Therapy

~Discuss decision with the family
  * No verbal interaction
  * Failure to recognize primary caregiver
  * No pleasure when seeing a “familiar” person
~Consider adding memantine (Namenda)
Beyond the Cholinesterase Inhibitors: Treatments that may slow Progression or Prevent AD

~Vitamin E

~Estrogen

~NSAID’s or Cox-2 Inhibitors

~NMDA antagonist
Effect of Vitamin E

~Slows progression of AD
~One trial used Vitamin E 2000 IU/d in treatment in moderate AD, slowed the progression to primary end-points
~Postmortem studies of AD brains reveal markers of oxidative damage
~Antioxidants might be protective
Effect of Estrogen

~Neurotrophic, antioxidative, and anti-inflammatory effects
~Exact role in AD unknown
~Epidemiological studies suggest possible protective benefit
~Studies in AD patients show no clinical benefit
  *May cause adverse drug effects (DVT is possible)
~Estrogen therapy not recommended or approved for the treatment of AD
Effect of NSAID’s

~Epidemiological evidence
  * Chronic use of anti-inflammatory agents may reduce AD risk

~Efficacy in AD?
  * 2 different studies conducted (Naproxen and Celebrex)
  * No benefit shown, possible GI side effects
Review of Memantine (Namenda)

~New drug approved October, 2003 for the treatment of moderate to severe AD
~Novel mechanism of action
~In trials it produced statistically significant efficacy in 3 areas:
  1-clinical global change
  2-function
  3-cognition
~In trials with Donepezil, there was statistically more significant efficacy vs donepezil alone.
~No clinically important changes in vitals signs (pulse, BP, DBP)
~No clinically important changes in laboratory parameters (Liver function, hematology, urinalysis)
~Dosing: 20mg/day (10mg bid) or Namenda XR once daily
~No effects from food
~Minimal drug interactions (HCTZ availability decreased by 20%)
Summary

~Alzheimer’s disease is a major public health issue
  * Community
  * Residential care/long term care
~Affects both patients and caregivers
~Screening and recognition
~Treatment
~New treatment approach with memantine
Take-Home Points

1. AD is prevalent in LTC, but often under-recognized and inadequately treated.
2. Effective treatments (drug and non-drug) are available.
3. Treatment can slow disease progression, slow loss of cognitive and functional abilities, and ameliorate behavioral symptoms.
Conclusions

~Patients treated with memantine and donepezil combination performed significantly better than those on donepezil alone for:
  * Cognitive
  * Functional
  * Global
  * Behavioral

~The combination was well tolerated, with rates of overall dropout and dropout for adverse events favoring the memantine-treated group
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