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Forget Me Not….Evaluation and Treatment of the Patient with Dementia.
Part 1: Who, What, and Why?

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Learner Outcomes

- After this course, participants will be able to:
- Identify the differences between reversible and irreversible dementias.
- Describe how to classify dementia into types by symptoms and neurological hallmarks.
- Describe how to distinguish between stages of dementia.
- Explain how to analyze risk factors to determine potential for cognitive decline in patients.

The Aging Population

The US Administration on Aging reports that:

- In 2013, elders (ages 65+) represented 1 in every 7 Americans
- Almost 45 million living Americans are over age 65
- By 2060, that number is projected to double to over 98 million!

(www.aol.aca.gov)

Aging and Dementia- Who?

The Alzheimer's Association's 2015 report states that in the United States:

- 5.1 million people over age 65 are currently living with Alzheimer's Dementia
- One in nine have Alzheimer's disease
- This number increases to one in three over age 85

(https://www.alz.org/facts/downloads/facts_figures_2015.pdf)

Dementia- The "Ticking Time Bomb"

~Dr. Peter Piot

- The World Health Organization reports that every 4 seconds, a new case of dementia occurs
- 7.7 million new cases each year worldwide
- An estimated 35.6 million people currently have a dementia diagnosis
- Dementia is the # 1 cause of disability and dependency among older adults
- The total estimated worldwide cost of dementia was $604 billion in 2010

World Alzheimer Report 2012, A public health priority. (2012). World Health Organization (WHO)

Dementia

- Not a specific disease, but a group of symptoms
- Characterized by a loss of function in at least 2 areas of function
  - Language
  - Judgment
  - Memory
  - Spatial ability
  - Visual ability
- 2 primary categories
  - Reversible
  - Non-Reversible

Reversible Dementias

- D- drug reaction, overdose, toxicity
- E- emotional disorders (depression)
- M- metabolic or endocrine (thyroid) issues
- E- eyes and ears (sensory loss)
- N- nutritional deficits
- T- tumors
- I- infection (sepsis, UTI, pneumonia)
- A- arteriosclerosis

Non-Progressive Dementias

- Traumatic Brain Injury
- Anoxia
- Vascular (single CVA)

Non-Reversible, Progressive Dementias

- Parkinsons
- Multi-Infarct
- Fronto-temporal
- Lewy Body
- Huntington's Disease
- Creuxfeldt-Jakob
- Korsakoff Syndrome
- Alzheimer's Disease

Let's Dig a Little Deeper- What and Why?

<u>Parkinson's Disease (PD) Related Dementia</u>

- 50-80% of people with PD will experience related dementia.
- Stress is #1 trigger for Parkinson's Dementia.
- Average time from onset of PD to development of dementia is 10 years.
- Neuro-hallmark is beta-amyloid plaques and tangles.
- Cognitive symptoms usually develop a few years after motor symptoms
- Treatment may consist of medications

(Alzheimer's Association, 2016)

Symptoms of Parkinson's-Related Dementia

- Slowness
- Rigidity
- Stooped posture
- Shuffling gait
- Depression
- Head bent forward
- Symptoms may be unilateral
- Drooling
- Akinesia (absence of normal movement)
- Tremors
- Mask-like facial expression

Multi-Infarct (Vascular) Dementia

- 2nd most common type of dementia
- Can co-exist with Alzheimer's
- Most common in men
- Typically occurs in patients aged 55-75
- Remains under-diagnosed
- Caused by reduced or blocked blood flow to the brain (CVA or TIA), usually a series of neurological events (more than one)
- Symptoms similar to Alzheimer's Dementia, difficult to distinguish
- Some experts refer to "vascular cognitive impairment (VCI)" instead of dementia, because of the broad range of impairment severity.
- No treatment to undo damage. Compensatory strategy development.

Multi-Infarct (Vascular) Dementia

- Risk factors
  - Diabetes
  - Atherosclerosis (hardening of the arteries)
  - Hyptertension
  - Smoking
  - Alcohol abuse
  - Stroke
  - Poor diet/exercise
  - Poverty may be a risk factor

Symptoms of Multi-Infarct (Vascular) Dementia

- Difficulty with tasks that used to come naturally or easily
- Becoming lost on familiar routes
- Word finding difficulties
- Losing interest in prior hobbies
- Flat affect/mood
- Misplacing items more often
- Personality changes
- Loss of social skills
- Change in sleep patterns
- Difficulty with basic tasks
- Safety awareness deficits
- Agitation
- Depression
- Short-term memory loss

Fronto-Temporal Dementia (Pick's disease)

- Progressive nerve loss/ shrinking of the frontal and temporal anterior lobes of the brain
- Onset to death is 2-12 years
- Caused primarily by a tau or TDP43 protein
- Strong genetic link
- Younger onset, with quick disease process
- Very poor prognosis
- No treatment has proven to slow progression of the disease.
- Behavioral issues often treated

(Alzheimer's Association, 2016)

Symptoms of Fronto-Temporal Dementia

- marked changes in personality and mood
- Communication and motor disruption highly prevalent
- Impaired judgment, impulsivity
- Boredom, apathy
- Inappropriate social behaviors
- Patient often unaware of decline in function or inappropriateness
- Difficulty with language (receptive and expressive)
- Memory remains largely intact

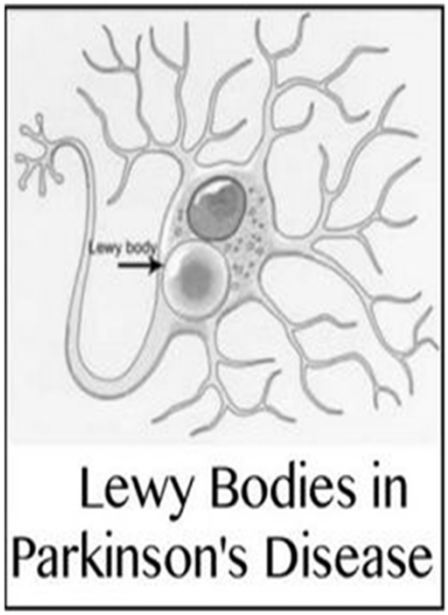
Lewy Body Dementia

- 3rd most common type (10-25% of cases)
- Neuro hallmarks similar to PD (possibly with or without plaques and tangles)
- These are the patients you see shuffling, looking at the floor, and mumbling.
- Largely underdiagnosed
- May be used as an umbrella term for PD and LBD (symptoms differ but neurological changes are similar)

(Alzheimer's Association, 2016)

Symptoms of Lewy Body Dementia

- Emotionally/physically labile
- Hallucinations (recurrent, detailed)
- Confusion varies widely from one day to the next
- Shuffling gait and stooped posture
- Depression
- Motor symptoms usually bilateral
- Cognitive impairments begin either before or within 1 year of motor symptom onset
- Repeated falls
- Unexplained loss of consciousness
- Visuo-spatial abnormalities



Lewy Bodies in Parkinson's Disease

Huntington's Disease

- Largely based on heredity (defective gene on chromosome 4)
- If parent carries defective gene, child has 50% chance of developing
- Affects younger people (30-40)
- Cases affecting people as young as 2 have been documented
- No known cure
- Treatments focus on management of symptoms

(Alzheimer's Association, 2016)

Huntington's Disease

- Symptoms:
  - Confusion
  - Diminished coordination
  - Fidgety, uncontrolled movements (upper body)
  - Behavior changes
  - Mood changes
  - Anger and irritability
  - Memory loss
  - Hallucinations
  - Decreased reasoning skills
  - Obsessive-compulsive behaviors

(Alzheimer's Association, 2016)

Creuxfeldt-Jakob Disease (CJD)

- Variant CJD is Mad Cow Disease
- Classic CJD is genetic
- Infectious form of Dementia- less common (may occur from exposure to infected bovine products or tissue transplantation)
- Characterized by prion protein that changes cells into abnormal shapes and rapidly destroys.
- Rare (1 in 1 million people annually)
- Approximately 200 cases each year in the US (NIH, 2011)
- 90% of patients die within 1 year of onset

(Alzheimer's Association, 2016)

Symptoms of Creuxfeldt-Jakob Disease

- motor symptoms (ataxia, muscle twitches)
- confusion
- agitation
- memory loss
- severe dysphagia
- personality changes
- seizures
- sleepiness
- dysarthria
- blindness

(Symptoms progress rapidly with no known treatment/ cure)

Korsakoff's Syndrome

- Most common in patients with a history of EtOH abuse
- Often preceded by Wernicke Encephalopathy- acute reaction to severely low thiamine
- Increased risk if patient has a history of binge drinking
- 1 in 8 people with alcoholism will develop KS

(Alzheimer's Association, 2016)

Symptoms of Korsakoff's Syndrome

- Motor deficits (staggering, stumbling)
- Confabulation (making up information but believing it, often very detailed)
- Disorientation
- Memory loss
- Impaired reasoning skills
- Malnutrition
- Jerky eye movements
- Major changes in personality
- Lack of insight into current condition
- Socially inappropriate behaviors

Normal Pressure Hydrocephalus

- Characterized by excessive accumulation of CSF in the ventricles.
- Ventricles enlarge and put pressure on the brain
- However, excess fluid does not often present during lumbar puncture
- Diagnosed by MRI, large volume spinal tap, or intracranial pressure monitoring
- Treatment includes placement of a shunt to drain excess CSF

(Alzheimer's Association, 2016)

Normal Pressure Hydrocephalus- Common Causes

- Subdural/Subarachnoid Hemorrhage
- Head trauma
- Neurological infections
- Tumor
- Surgical complications
- May develop with none of these factors present

Symptoms- Normal Pressure Hydrocephalus

- difficulty walking (getting stuck or "freezing")
- Slowing of movements
- decreased executive functioning
- loss of continence
- Symptoms will worsen over time if condition remains untreated
- Apathy and withdrawal/ changes in mood
- Memory loss
- Sudden falls

Alzheimer's Disease

- Most common type of dementia (60-80% of cases)
- Progressive, and not a "normal" part of aging
- Usually diagnosed mid-60s
- Characterized by memory difficulty, especially newly learned information
- Can be diagnosed pre-mortem now
- One neuro-hallmark is abnormally high numbers of beta-amyloid plaques and tangles.
- Primary neuro-hallmark is "wasting away" of the brain
- Major genetic link
- Current research focus is attempting to slow or prevent AD

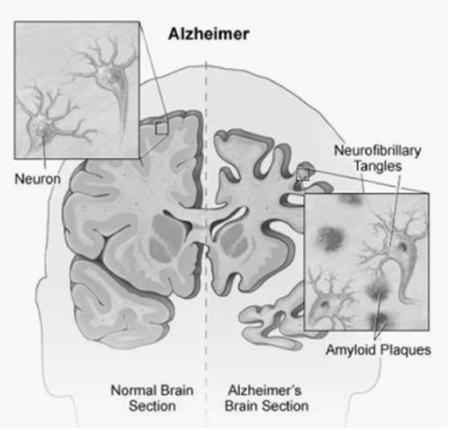
(Alzheimer's Association, 2016)

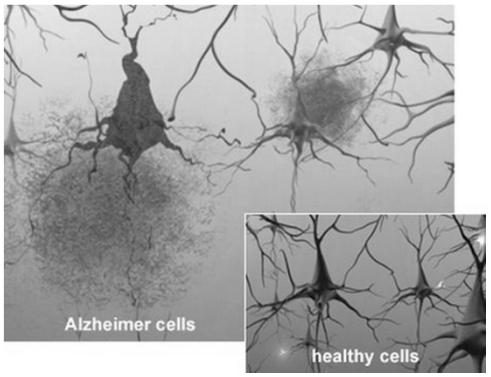
Symptoms of Alzheimer's Disease

Differ by Stage:

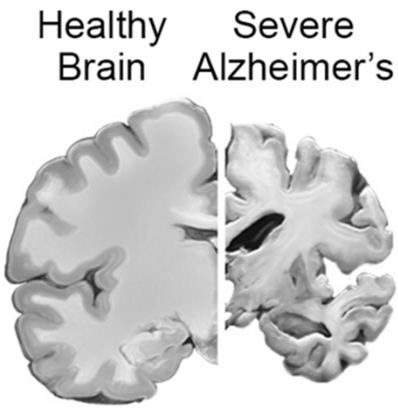
- Mild- memory loss, safety issues, difficulty paying bills, executive functioning skill loss
- Moderate- increased confusion, significant language deficits, behavioral issues begin
- Severe- unable to communicate verbally, completely dependent on caregivers, dysphagia prevalent

Beta Amyloid Plaques and Neurofibrillary Tangles





Neurological Changes



What About Mild Cognitive Impairment?

- Cause is not completely understood at this time
- Cognitive and memory changes are noticeable to others, but are not severe enough to seriously interfere with ADLs.
- People with MCI ***may get better***
- Compensatory activities may slow decline or assist in progress
- ***May*** lead to AD
- Experts recommend re-evaluation every 6 months to diagnose improvement/decline.

(Alzheimer's Association, 2016)

Diagnosing Dementia

- Family and medical history
- Neurological exam
  - CT
  - PET
  - MRI
- Physical exam
- Bloodwork
- Psychological exam
- Mental status exam

Can the SLP Diagnose Dementia?

- Diagnosis must be made by a medical doctor
- Mental status/stage testing may be conducted by the SLP
- What if we see signs and there is no diagnosis?
  - Contact MD with concerns and testing results
  - Request consult
  - Treat the symptoms under our scope of practice

What Might the MD Do?

- Medications
  - Aricept (1997)- most common prescribed of AD medications. One dose taken at night.
  - Reminyl (2001)- Used with vascular and mixed dementia. Once (extended release) or twice per day doses. Linked to renal and liver issues.
  - Exelon (2000)- Adds acetylcholine in the brain. Taken once or twice per day. Titration required and potential for GI problems.
  - Namenda (2003)- Regulates glutamate activity (related to learning and memory) Often used as a 2nd drug in a "cocktail" approach to pharmacological treatment.

Stages of Cognitive Impairment

- Alzheimer's Disease is generally characterized into 3 stages
  - Early Stage (2-4 years)
  - Middle Stage (2-10 years)
  - Late Stage (1-3 years)
- From onset to death, the process usually lasts 7-20 years

(Data from NCCDP manual)

Stages of Cognitive Impairment

- Other classification of stages
  - Global Deterioration Scale
  - Allen Cognitive Levels

Global Deterioration Scale

- 7 Stages
  - GDS 1- Normal adult
  - GDS 2- Forgetfulness
  - GDS 3- Early Confusional State
  - GDS 4- Late Confusional State (Mild Dementia)
  - GDS 5- Moderate Dementia
  - GDS 6- Severe Dementia
  - GDS 7- Late/Severe Dementia

Allen Cognitive Levels

- Used primarily by OT
- 6 Levels (each with 3 components: attention, motor control, verbal performance)
  - ACL 0- Coma
  - ACL 1- Awareness
  - ACL 2- Gross Body Movements
  - ACL 3- Manual Actions
  - ACL 4- Familiar Activity
  - ACL 5- Learning New Activity
  - ACL 6- Planning New Activity

Mental Status Exams

- Brief Cognitive Rating Scale (BCRS)
- Allen Cognitive Level Screen
- ACL Leather Lacing or Placemat Tests
- Clock Drawing Test
- Mini-Mental State Exam
- Functional Assessment Staging (FAST)
- Montreal Cognitive Assessment (MOCA)
- Self-Administered Gerocognitive Exam (SAGE)
- Ross Information Processing Assessment (RIPA)
- Mini-Cog Test

Is Therapy Reimbursable?

- Dementia as a medical diagnosis does not disqualify a patient from eligibility
- What types of therapy diagnoses come along with dementia?
  - Agnosia
  - Alexia
  - Agraphia
  - Aphasia
  - Dysphagia

Jimmo vs. Sebelius

- Approved January 24, 2013
- Prior to the Jimmo settlement, Medicare's "Improvement Standard"- a resident had to show improvement for therapy to be covered.
- Now, the determining issue is whether the skilled services of a professional are needed, not if the patient will "improve"
- Intervention includes, establishing a RNP, modifying a program, preventing decline
- Important for patients with progressive disease processes

Dementia or Decline? Does it Matter?

- Patients with a dementia diagnosis should be on our radar immediately
- Patients whose recent disease process may raise "red flags" to potential for decline
- SLPs aren't treating the actual dementia, but the symptoms related to decline

Who Should We Evaluate?

- Patients with s/s language or cognitive deficits
- Patients with a history of cognitive decline
- Patients whose family report decline in function
- Patients who staff report declines in function
- Patients whose recent illness/ etiology could indicate a potential safety risk or cognitive decline
- ……..

What Can Contribute to Decline?

- Infection (UTI, Sepsis, Pneumonia, Gangrene…)
  - The American Academy of Neurology recognizes that new or past infections can contribute to cognitive impairment
  - NIH study documented sepsis was associated with later cognitive and physical decline
  - Journal of AMA says that adults with infection "may be left with moderate/severe cognitive deficits and functional disabilities"

What Can Contribute to Decline?

- Anesthesia
  - British Journal of Anesthesia:
    - Increased evidence that major neurological changes can occur post anesthesia
    - Brain particularly vulnerable at the beginning or end of life
    - Earliest manifestation of neuronal damage is a decrease in higher cortical functions of storage and recall of memory and cognitive processing
  - International Anesthesia Research Society
    - Recognizes POCD- Post Operative Cognitive Dysfunction
      - Study found that 10-15% of elderly have post operative cognitive decline at 3 months post-op
      - Surgery may "unmask" intellectual declines already present
      - Cognitive decline may result from inflammatory processes after anesthesia
  - Research on Anesthesia vs. Analgesic effects:
    - Study on knee and hip replacements with different types of anesthesia and cognitive function suggested that normal cognitive recovery from both types happens within 6 hours post-op

What Can Contribute to Decline?

- Prolonged Hospitalization
  - Agency for Healthcare Research and Quality
    - In pts over 70 years old, 39% reported loss in cognitive status and subsequent ADL/IADL functions immediately after discharge
    - 40% reported NEW loss of ADL/IADL 3 months post-hospital discharge, reflecting potential for functional decline

What Can Contribute to Decline?

- Mayo Clinic Study states that the strongest risk factors for Mild Cognitive Impairment are:
  - Increased Age
  - APOE- e4 gene
  - Diabetes
  - Smoking
  - Depression
  - Hypertension
  - Hypercholesterolemia
  - Lack of physical exercise
  - Infrequent participation in mentally or socially stimulating activities

Can You Slow Decline?

- The American Academy of Neurology produced a study in 2009 that suggests that people who are “destined to develop dementia” can delay the onset of accelerated memory decline by doing brain exercises.
  - Reading
  - Writing
  - Crossword Puzzles
  - Board Games
  - Card Games
  - Group discussions
  - Music
  - Current events recollection
- Participants who didn’t do these type of activities lost their memory 3 times as quickly as those who did cognitive exercises 7 days per week.

Next Time….

- All About the GDS….
  - Stages
  - Age equivalency
  - Expectations

Questions?

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