Managing Dementia: Promoting Function and Maintaining Independence

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Objectives

- Review dementia, including overview and diagnosis
- Review expected changes in memory, thinking, mood and function
- Explore techniques to minimize common challenges
- Discover approaches and interventions for caregivers to use in promoting ADLs and safety
What is Dementia?

• A general term for a decline in cognition and behavior that impacts one's ability to function independently in everyday life (American Psychiatric Assoc. 2000).
  – Caused by gradual loss of working brain cells
  – Not a normal part of aging
  – Can be permanent or reversible
  – There are 50 types of dementia.
Statistics

- 1 in 3 seniors will die with dementia (2016)
- Over 9 million Americans live with some form of dementia
- By 2050, an estimated 16 million will develop dementia
- $160 billion in costs to Medicare and Medicaid (2016)
- 60% of caregivers rate emotional stress high or very high
- ~ 40% of caregivers report symptoms of depression
Common Types of Dementia

- Alzheimer’s disease
- Vascular dementia
- Lewy body dementia
- Parkinson’s disease dementia
- Frontotemporal dementia
- Mixed dementia
Alzheimer’s Disease

- Most common type of dementia (60-80%)
- The 6th leading cause of death in the US
- Modern medical description by Alois Alzheimer in 1906, who found plaques and tangles in the brain
- Rare in earlier times because few people lived to a very old age
Progression of Alzheimer’s Disease

- Duration of illness is generally 6 to 12 years
- The later the diagnosis, the shorter the lifespan
- Onset is usually after 65
- Before age 65, it’s referred to as “early onset”
Brain Changes in Alzheimer’s

- Cells die in vital areas of the brain as the result of neuritic plaques and neurofibrillary tangles
- Communication between parts of the brain is greatly reduced
Brain Changes in Alzheimer’s

- **Hippocampus most affected**
  - Loss of memory
  - Loss of spatial orientation
- **Frontal Lobe**
  - Loss of executive function, inhibitions
- **Parietal and Temporal Lobes**
  - Disorientation in space
  - Loss of language
  - Loss of memory
- **Occipital Lobe**
  - Progressive loss of peripheral vision/binocular vision
- **Hypothalamus**
  - Loss of temperature regulation
Brain Changes in Alzheimer’s

- Preserved in Alzheimer’s
  - Emotions
    - Amygdala is the emotional center
      - Last are to be damaged
      - Capitalize on making connection with patients
  - Music and Rhythm
    - Stored opposite the language center
      - Often undamaged
      - Capitalize on for treatment
Vascular Dementia

- Also known as multi-infarct or vascular cognitive impairment
- Often due to series of small TIAs that block arteries
- Symptoms overlap with AD, however memory may not be as seriously affected
- May be focal loss, rather than global
Lewy Body Dementias

1. Dementia with Lewy bodies (DLB)
   - Problems with motor planning, memory, judgment and behavior
   - Severity and alertness of symptoms may fluctuate daily
   - As it progresses, physical symptoms similar to Parkinsonism: rigidity, bradykinesia

2. Parkinson’s disease dementia (PDD)
   - 80% of PD patients will develop PDD
   - Physical symptoms followed by cognitive changes
Frontotemporal Dementias

• Includes Pick’s disease, primary progressive aphasia, semantic dementia and others
• Minimal memory deficits are noted in early stages
• No pharmaceutical treatments available
• Common in individuals between 50-60 years old
Mixed Dementia

- Most common is AD and vascular dementia
- Can be any combination of dementia diagnoses
- Symptoms will be a composite of the mix
Reversible Dementias

Some Examples:

- Depression
- UTI
- Metabolic disturbances
  - Thyroid problems, vitamin deficiencies, liver disease, renal disease
- Medication side effects
- Excess use of alcohol
- Pneumonia
- Anemia
Keep In Mind…

- Problems with **new** learning or remembering **new** information
- **Old** memories remain intact
- We call these memories **residual memories**
- The client’s ability to **access** residual memory erodes
Keep In Mind...

- **Episodic memory**
  - Memories of things you have personally experienced
  - Things you have done, people you have seen
  - Highly impacted in AD; may remain intact in PDD/LBD

- **Semantic memory**
  - Everything else you know: learned knowledge
  - Highly impacted in AD

- **Procedural memory**
  - Memories based on repetitive activity
  - Action based
  - Can be achieved with extra time

- **Declarative memory**
  - Memories of facts and events
  - Refers to those memories that can be consciously recalled
  - Sometimes called explicit memory
Example of Episodic Memory

- Recalling details of how you learned about a relative's death.
- Recalling neighbors where you used to live
- Recalling a ski vacation last winter
Examples of Semantic Memory

- Knowing that grass is green
- Knowing names of colors
- Knowing what a dog is
Examples of Procedural Memory (Motor Skills)

- Walking
- Talking
- Play piano
- Ride a bike
Examples of Declarative Memory

- Knowing one's address
- Giving someone directions to the store
- Recalling the route to a nearby park
Health professionals discuss dementia in "stages," which refers to how far a person's dementia has progressed. Defining a person's disease stage helps physicians determine the best treatment approach and aids communication between health providers and caregivers.
Determining Stages of Dementia

- Fast Scale
- Allen Cognitive Scale
- Global Deterioration Scale
Allen Cognitive Scale

- Developed by Claudia Allen OTR
- Identifies 6 cognitive levels and 4 modes of function with each level
- Best Practice recommends using 2 of the following to obtain level
  - Allen Cognitive Level Screen
  - Allen Diagnostic Module
  - Routine Task Inventory
Global Deterioration Scale

- Dr. Barry Reisberg
- Neuro Retrogenesis
  - Abilities are lost in the opposite direction they were learned
  - Treatment plan should follow that bath
    Feeding -> toileting -> dressing -> grooming
    (do not attempt grooming if person is no longer feeding)
- There are 7 specific stages of dementia progression
- Collectively, these stages are called the **Global Deterioration Scale**
Stage by Stage Characteristics and Interventions
GDS Stage 1

- No dementia
- Function normally
- Possible short-term memory problems that increases with stress.
Stage 1 Intervention

- No communication concerns
- No treatment needed
GDS Stage 2

- No dementia, very mild cognitive decline
- Normal forgetfulness (ex: names, where keys are)
- Generally no problems functioning at work, home, or leisure activities
- No one knows there may be a problem
Stage 2 Interventions

Compensatory strategies for memory & organization

<table>
<thead>
<tr>
<th>High Tech</th>
<th>Low Tech</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Digital voice recorder</td>
<td>• Checklist</td>
</tr>
<tr>
<td>• Programmable watch</td>
<td>• Calendar</td>
</tr>
<tr>
<td>• Cell phone</td>
<td>• Daily planner</td>
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</tbody>
</table>
Stage 2 Communication

- Provide written instructions
- Have a close friend or family member attend office visits
- Repeat back instructions to make sure understood
- Reminder calls for appointments (text messages, email, google calendar)
GDS Stage 3

I know, but nobody else does

- Mild cognitive decline with early confusion
- Increased forgetfulness
- Decrease in concentration
- Work performance starts to suffer
- Beginning of word finding problems
- The individual realizes that what is happening to his memory is not due to stress
- Decreased reading comprehension
STAGE 3 INTERVENTIONS

- Starting caregiver education
- Consider in home assistance or move in with a family member
- Home and community safety (Life Alert, SMART HOMES, virtual home care apps)
- Spatial considerations (orientation and wayfinding)
- Environmental adaptation
- Touch technology
- Routine exercise
Stage 3 Communication

- Use concrete, simple language
- Minimize instructions
- Written reminders in appropriate places
- Delay providing information about procedures until just prior to event
GDS Stage 4

Lost in Space: “What is happening?”

- The cat is out of the bag...it is obvious to others that the individual has dementia
- Difficulty with routine home maintenance
- Person often is depressed as he/she mourns the future
- Learned “helplessness can occur”
- Starts isolating self from others and avoids challenging situations. (denial used as a defense mechanism)
- May be agitated
- Decline in executive functioning
Stage 4 Interventions

- Often the stage where placement first occurs
- Home safety adaptations
- Introduce signs and landmarks to facilitate Wayfinding
- Good with repetitive familiar tasks
- Can still learn new tasks given cueing and practice
- Teach new ways to ambulate and transfer to different surfaces with demonstration and repetition
- Comprehensive caregiver education is needed
Stage 4 Communication

- Word recall problems
- Repetitive questioning
- Person continues to be socially appropriate
GDS Stage 5

Dressed and ready, with nowhere to go

- Individual is unaware of having a problem with their memory
- Oriented to own name and usually spouse and children's names
- Disoriented to time, place, address, and telephone number
- Repetitive questioning
- Retains new information for about 5 minutes
- Unable to travel independently
Stage 5 (continued)

- May wander away
- May be agitated and hoard things
- Beginning of loss of visual fields
- Safety and fall concerns. May not be aware of tripping hazards such as a step or change in terrain
- Needs some assistance with ADLs such as picking out appropriate clothing.
- Independent with eating and toileting
Stage 5 Interventions

- Environmental modifications for safety and fall prevention
- Compensatory strategies for participation in functional activities
- Provide visual and verbal cueing / physical prompting and assistance
Stage 5 Intervention (continued)

- Purposeful and meaningful activities
  - Sorting money
  - Folding clothes
  - Matching cards
  - Reminiscent boxes
  - Old photographs
Stage 5 Communication

- Familiar, upbeat, pleasant tone of voice
- Simple, concrete language
- Limit choices to 2
- Respond to questioning
- Validate and distract
- Relate to client’s world (refer to social history)
GDS Stage 6

- Severe cognitive decline
- Forgets names of children and spouse
- Disoriented to the immediate environment
- Pacing back and forth
- Usually lose peripheral vision and depth perception
- Decline in walking with falls
Stage 6 (continued)

- Will wear dentures, eyeglasses, and hearing aids for a short period of time; often loses them
- May look disheveled and often layers clothing due to feeling exceedingly cold
- May stop feeding themselves due to not knowing how to start
- Toileting assistance / incontinence
Stage 6 Interventions

- Do not change the setup of the environment
- Maintain consistency
- Confine ambulation to safe, level areas
- Supervise walking on stairs
- Remove distractions from view
- Remove hazards
- Respond better to visual and tactile cues
- Use signs and messages
- Caregiver education regarding agitation, behavior management
Stage 6 Communication

• Loss of functional language / “word salad”
• Recognize nonverbal communication
• Validate, distract, and redirect
• Get into their view and touch them before you give instruction
• Simple language, single step statements
• Calm tone, gentle, touch, smile
• Allow up to 90 seconds response time
GDS Stage 7

- Late dementia
- Tend to be dominated by their senses
- Unable to express needs verbally, so you have to be a detective and observe behaviors
- Loss of motor skills
- Unable to walk independently needing a wheelchair to prevent falls
- Contractures of extremities
Stage 7 (continued)

- Needs significant or total help with dressing, bathing, grooming, eating
- Incontinent
- Lose ability to taste and smell food, except with heavy seasoning or sweets
- Return of primitive reflexes (grasping and rooting)
- Significant weight loss and dysphagia
Stage 7 Interventions

- Caregiver education
- Fall prevention
- Positioning in bed and/or wheelchair
- Basic ADLs (finger food diet)
- Maintenance program development
- Sensory stimulation
Stage 7 Communication

- Single step instruction
- No choices
- Nonverbal communication
  - Read it: look for pain, which client cannot express
  - Use light touch to calm
  - Be aware of tone, approach
  - Smiling is key
- 90 second response time
Additional Interventions Across All Stages
Fall Reduction/Prevention

• Therapy
  – Strengthening
  – Balance activities
  – Postural remediation

• Environmental optimization
  – Furniture walking (relax the rules)
  – Wayfinding
  – Clutter reduction

• Home Exercise Program with caregiver support or in a group
Environmental Modifications

• Control the environment
• Simplify the space
• Provide a calm atmosphere
• Eliminate or minimize background noise
• Provide sufficient lighting
• Sufficient warmth, eliminate drafts
Interventions for Behavioral Issues

- Sundowning
- Bathing
- Eating
- Toileting
- Dressing
Sundowning

- Late day confusion
- Usually worsens as the disease progresses and peaks in the middle stages.
- **Symptoms:** aggressiveness, delusions, hallucinations, pacing, elopement, increased difficulty with tasks that can be done earlier in the day.
- **Causes:** decreased activity in afternoon, decreased lighting, disrupted sleep cycle.
Sundowning Strategies

- Address hunger, thirst, pain, toileting
- Allow mini rest breaks throughout the day
- Decrease over stimulation
- Intermittent times of physical activity throughout the day
- Evening routine
- Provide adequate lighting
Bathing Behaviors

• **Behaviors:** refusal, yelling, hitting
• **Causes:** cold or discomfort, forgets what it is, embarrassed, fearful, unfamiliar
Bathing Strategies

- Pre-organize all items in bathroom
- Pre-adjust temperature in bathroom and water
- Safety equipment (grab bars, shower chair)
- Cover mirrors
- Avoid being confrontational
- Maintain the familiar
- Dignity and privacy
Eating Behaviors

- Poor appetite, refusing to eat, holding food in mouth, difficulty swallowing and chewing
- **Causes:** pain, poor fitting dentures, fatigue, medication, agitation, constipation, communication, depression, and lack of physical activity
Eating Strategies

• Routine physicals and dental care
• Eat when most alert
• Provide physical assistance / adaptive equipment
• Physical activity
• Nonverbal communication
• Don’t rush
• Minimize distractions
Toileting Behaviors

• Incontinence
• Refusal
• **Causes:** UTI, constipation, prostate gland, GI, decreased sensation, wayfinding, mobility, communication, embarrassment, distracted
Toileting Strategies

- Toileting routine
- Easy to manage clothing
- Provide physical assistance / AE
- Visual cues and signs
- Limit coffee, soda, tea
- Incontinence pads
- Physical activity
- Proper diet / fluid intake
Dressing Behaviors

- Refusal
- Layers / inappropriate clothing
- Yelling, hitting
Dressing Strategies

- Simplify choices
- Simplify the task
- Comfortable and simple clothing
- Be flexible
Innovative Care for Persons with Dementia

- Dementia Villages
- Amsterdam (2007)
- Canada (2014)
- Italy (2016)
- Florida (in the making)
Innovative Care for Persons with Dementia (continued)

- SMART homes
- Key chain sensors
- Wrist band sensors
- Silent sensors
- Motion sensors
Pharmacological Interventions

• Brain of person with Alzheimer’s disease
  – Has lower levels of acetylcholine. Acetylcholine helps send messages between nerve cells
  – Have loss of nerve cells that use acetylcholine.
  – Falling acetylcholine levels and progressive loss of nerve cells are linked to worsening symptoms.

• Cholinesterase inhibitors
  – Aricept, Exelon and Razadyne
  – Prevent the breakdown of acetylcholine
  – Increase concentration of acetylcholine
Pharmacological Interventions

- Leads to increased communication between nerve cells
  - Temporarily alleviates or stabilizes some symptoms
  - All three cholinesterase inhibitors work in similar way
  - One might work better than another for certain individual in terms of side effects
  - Also very effective for Lewy body dementia and PDD in treating agitation, apathy and psychotic symptoms
Pharmacological Interventions continued:

• Namenda:
  – Used to treat moderate to severe Alzheimer’s disease
  – Blocks the toxic effect of excess glutamate
  – Regulates glutamate activation
  – Protects brain cells by blocking effects of excess glutamate

• Glutamate:
  – Brain chemical that sends messages between nerve cells
  – Is released in excessive amounts when brain cells are damaged by AD

• Antipsychotics: i.e. Risperdal (risperidone)
  – To eliminate or reduce psychotic symptoms, delusions and hallucinations
  – Have calming, sedative effect

• Antidepressants:
  – Can be effective for behavioral and psychological symptoms
<table>
<thead>
<tr>
<th>Generic</th>
<th>Brand</th>
<th>Approved For</th>
<th>Side Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donepezil</td>
<td>Aricept</td>
<td>All stages</td>
<td>Nausea, vomiting, loss of appetite and increased frequency of bowel movements</td>
</tr>
<tr>
<td>Galantamine</td>
<td>Razadyne</td>
<td>Mild to moderate</td>
<td>Nausea, vomiting, loss of appetite and increased frequency of bowel movements</td>
</tr>
<tr>
<td>Memantine</td>
<td>Namenda</td>
<td>Moderate to severe</td>
<td>Headache, constipation, confusion, dizziness</td>
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<tr>
<td>Rivastigmine</td>
<td>Exelon</td>
<td>Mild to moderate</td>
<td>Nausea, vomiting, loss of appetite and increased frequency of bowel movements</td>
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<td>Memantine + donepezil</td>
<td>Namzaric</td>
<td>Moderate to severe</td>
<td>Headache, diarrhea, dizziness, loss of appetite, vomiting, nausea and bruising</td>
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Questions?
References


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