Evidence-based Interventions in Dementia and Alzheimer’s Disease

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Overview

• Understanding AD and dementia
• Current research
• Behavioral and psychiatric symptoms of dementia
• Effective evidence based interventions
• Time permitting…Understanding caregiving and caregivers

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All men would live long but no man would be old.

What is Normal Aging?

• We all slow down as we age
  ➢ Reaction time slows
    • Natural and individual preference
  ➢ Takes us longer to remember our phone number
  ➢ Tip of the tongue phenomenon
  ➢ Senses become less acute
• We should still remember what keys are for, who our children and grandchildren are

Aging is not for sissies

Age is the biggest risk factor associated with dementia and Alzheimer’s disease:

- 65 - 70 years 2 - 5%
- 70 - 75 years 5 - 10%
- 75 - 80 years 10 - 20%
- 80-85% 20 - 40%
- 85 years+ 40 - 80%
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Alzheimer’s Disease & Age

**FIGURE 1** Ages of People with Alzheimer’s Disease in the United States, 2016

- 85+ years, 3%
- 75-84 years, 4%
- 65-74 years, 15%
- <65 years, 41%


What can be done?

- Better treatments and prevention strategies
- Delaying onset of AD by 5 years could reduce prevalence by 50% over 50 years
- Many clinical drug studies are going on now
  - > 100 AD studies seeking participants: [www.clinicaltrials.gov](http://www.clinicaltrials.gov), [http://www.alz.org/trialmatch](http://www.alz.org/trialmatch)
  - There is a shortage of study volunteers
  - Slows down research

Alzheimer Centennial 2006

- Alois Alzheimer presented first case at small medical meeting in Germany
- 51-year-old Auguste D. had profound memory loss, confusion, difficulty expressing herself, unfounded suspicions about husband and hospital staff
- On autopsy, saw plaques and tangles, cortical shrinkage, vascular changes

Dementia

A. Impaired Function in Activities
B. Decline from Prior Function
C. Cognitive and Behavioral Problems (at least in Domains)
1. Recall/Memory
2. Reasoning, Handling complex tasks, and Judgment
3. Visuospatial Abilities
4. Language Functions (speaking, reading, writing)
5. Changes in Personality and Behavior


Dementia and AD

- Dementia is a syndrome with symptoms that interfere with functioning
  - Memory loss
  - Reasoning and judgment
  - Critical thinking
- Alzheimer’s disease is one possible cause of dementia
- Everyone with AD has dementia but NOT everyone with dementia has AD

Brain Atrophy in AD

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Other dementias

- Vascular dementia
  - Resulting from single stroke (post-stroke dementia) or multiple mini-strokes, disseminated vascular disease
- Mixed dementia (AD + vascular)
  - Increasingly common with advancing age
  - AD pathology more likely to cause clinical symptoms in presence of vascular changes (Nun study and others)
  - Effect may be additive or synergistic
  - Proactive identification and management of CV risk factors may be our best current dementia prevention strategy

Other dementias...

- Dementia with Lewy bodies
- Parkinson’s disease
  - Dementia quite common in later stages of disease
- Progressive supranuclear palsy (PSP)
- Frontotemporal dementia
  - Age of onset tends to be younger
  - FTD language variant
  - FTD behavior variant
  - More personality/behavior changes
- Normal pressure hydrocephalus (rare)
- Creutzfeldt-Jakob disease (rare)

Brain with Frontotemporal Dementia

Mild Cognitive Impairment

Subjective Cognitive Complaints

- Self-reported impairment, preferably corroborated by informant
- Problems in one or more core cognitive domains on mental status exam or neuropsychological testing (e.g., paragraph recall)
- Primary memory complaint = “amnestic SCC”
- Generally intact cognition and daily function
- Increased risk, but not certainty, of progressing to AD or another dementia, especially with amnestic

10 Warning Signs of Alzheimer’s disease

- Memory loss that disrupts daily life
- Challenges in planning or solving problems
- Difficulty completing familiar tasks
- Confusion with time or place
- Trouble understanding visual images and spatial relationships
- New problems with words in speaking and writing
- Misplacing things and losing the ability to retrace steps
- Decreased or poor judgment
- Withdrawal from work or social activities
- Changes in mood and personality
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Cure versus Treatment
A distinction must be made between curable and treatable. While AD is not yet curable, its symptoms are treatable.

Why Do Behavioral and Psychological Symptoms of Dementia (BPSD) Matter?
- Premature Institutionalization
- Increased financial cost
- Increased caregiver burden
- Poor quality of life for patient and caregiver
- Increased nursing stress

Behavioral and Psychological Symptoms of Dementia (BPSD)

Behavioral Symptoms
- Culturally inappropriate behaviors
- Physical aggression
- Screaming, Cursing
- Restlessness
- Agitation
- Wandering
- Shadowing
- Sexual disinhibition
- Hoarding

Psychological Symptoms
- Anxiety
- Depressed mood
- Psychotic Symptoms

Delusions (Psychosis)
Delusion: A false fixed belief that is firmly held despite evidence to the contrary
- 43% of AD patients have delusions in one study (n=209, Deutsch)
- Delusions predict aggression
- 80% of dementia patients with physical aggression had delusions (52wk, n=270, Gilley)
Hallucinations (Psychosis)

Hallucination: Defined as the perception of an object or event (in any of the 5 senses) in the absence of an external stimulus
- Frequency in dementia 12 - 49%
- Visual hallucinations most common 30% of patients with dementia
- Auditory hallucinations up to 10%
- Lewy body dementia up to 80% of patients have visual hallucinations
- Hallucinations did not predict physical aggression


Catastrophic Reaction

- Situation that overwhelms the thinking capacity of the person with dementia, resulting in person becoming excessively upset and distress.
- May appear as just being obstinate, critical or overemotional.
- Example: Bursting into tears when asking patient to get dressed.


Resistance to Care

- Inability of person with dementia to understand need for care or intent of caregiver
- Communication deficit and delusions
- Person with dementia is defending themselves against perceived aggressor.
- Different than an “aggressive” patient
- Intervention: Delay care, change approach.


Sundowning

Worsening of behavioral and psychological symptoms of dementia in the afternoon and evening.
Shown to be correlated to circadian, hormonal and physiological changes.

International Psychogeriatrics. Behavioral and Psychological Symptoms of Dementia Slide Kit 2011

First Line Non-pharmacologic Interventions

- Activity and recreation
- Caregiver education
- Staff training
- Exercise and movement
- Sensory enrichment
- Music therapy
- Aromatherapy
- Simulated family presence
- Validation therapy
- Reminiscence therapy

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
Kolanowski et al. 2005
O’Connor, Rabins, Swanick et al. “Module -5-Non-Pharmacologic Treatments for BPSD” 2011 IPA.

Activity and Recreation

- Daily chores, hobbies and shared past activities.
- Improves mood, agitation, and quality of life.
- 20 to 60 min of activity once per day.
- More benefit if skills level and interests match patient.

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
Kolanowski et al. 2005
O’Connor, Rabins, Swanick et al. “Module -5-Non-Pharmacologic Treatments for BPSD” 2011 IPA.
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Caregiver Education
- Educating family caregivers can be just as effective as medications for reducing agitation

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
Tari et al 2000

Exercise
- 3 week exercise program
- 30 minutes per day
- 15 min aerobic/15 min resistance
- Improvement in agitation in exercise group

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
Aman et al. J Am Med Dir Assoc 2009

Sensory Enrichment
- Multisensory stimuli: Residents experience touch, smell, taste, hearing, visual stimuli
- Multisensory stimuli vs. card games, no difference in agitation, anxiety or mood

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
Ragneskog et al 1996.

Music Therapy
Preferred music during bath reduced verbal and physical aggression
Music played for 2 weeks during dinner vs. silent control
- Soft melodious tunes - 44% reduction irritability
- 1930s Jazz - 22% reduction irritability
- Modern pop - 11% reduction irritability

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009

Aromatherapy
Small number of trials
Lavender and lemon balm
Systematic analysis
Improves:
- Social functioning
- Social engagement
- Frequency of BPSD (including agitation)
- Independence in ADLs
- Positive effect on cognition

De Oliveira et al. Biomedical Research International 2015

ALIVE INSIDE
Michael Rossato-Bennett
Writer, Director and Producer
Simulated Family Presence

- Visits by family members provide relief and comfort
- Quickly forgotten
- Audiotapes of cherished moments or conversations
- Play for 15 min through headphones during agitation
- Mixed results

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
O’Connor, Rabins, Swanick et al. “Module 5 Non-Pharmacologic Treatments for BPSD” 2011 IPA

Validation Therapy

- Engage dementia sufferers in warm, empathic way.
- Structured group sessions: Greeting, hand holding, singing, reminiscence, and refreshments.
- 30 min session, 4x/wk.
- 1 year vs. “social contact” group
- Depression worsened in “social contact”, no difference agitation.

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009

Reminiscence Therapy

- Tap long term memory to confirm personal identity and bolster self-esteem.
- Express key events and experiences like family relationships, schooling & past work.
- Mixed results vs social contact groups.

De Oliveira et al. Biomedical Research International 2015
O’Connor et al. International Psychogeriatrics 2009
O’Connor, Rabins, Swanick et al. “Module 5 Non-Pharmacologic Treatments for BPSD” 2011 IPA

Bright Light Therapy

- Light box 1 hour every morning
- 10,000 Lux
- Improves sleep in several randomized studies, especially in winter months.
- Mixed findings in dementia

De Oliveira et al. Biomedical Research International 2015

Equine Therapy

Person Centered Care

Caregivers have full knowledge of patients:
- Cultural and family values
- Personal life stories
- Previous interests and skills
- Likes and dislikes
- Physical well being

Less agitation when nursing home staff are trained in person centered care

O’Connor, Rabins, Swanick et al. “Module 5 Non-Pharmacologic Treatments for BPSD” 2011 International Psychogeriatric Association, Chenoweth et al. 2010

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Physical Environment

- Supportive and calm
- Staff readily available
- Promote social engagement
- Structured activities
- Small home like units, less agitation
- Single rooms less agitation
- Access to garden or outdoor path
- Good lighting
- Varied shared space.


Prevention of Agitation

- Provide glasses for vision and aides for hearing loss
- Promote mobility and exercise
- Treat pain, with medication, exercise and changing positions.
- Treat incontinence with toilet schedule and incontinence aids.
- Use simple words/phrases to help understanding.


Caregiver “Do’s” for Persons with Dementia

- Recognize when person's stress levels are rising
- Identify and avoid triggers of distress
- Tell the person what is happening and why?
- Identify worry that triggers underlying repetitive question.
- Address worry


Caregiver “Do’s” for Persons with Dementia

- Do avoid arguments
- Do attempt to redirect patient to a different topic.
- Do diffuse situation by changing activity, topic, or tempo when episode of distress occurs
- Do tell a little white lie, if all else fails, e.g., “Your car is in the shop.”


Caregiver “Don’ts” for Persons with Dementia

Do not:
- Nag
- Repeat demands of resident (when not capable).
- Ignore the resident
- Use punishment
- Engage in power struggles
- Withhold privileges
- Show annoyance, frustration or anger
- Be disrespectful of resident.

Thank you for listening and for helping others.

Any questions?