

Understanding Dementia: A Deep Dive into the Various Types

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Dementia

- * An umbrella term for symptoms associated with memory, thinking & social activity that interfere with daily activities

Neurocognitive Domains

- * 1. Perceptual- Motor Function
- * 2. Executive Function
- * 3. Complex Attention
- * 4. Language
- * 5. Learning and Memory
- * 6. Social Cognition

Perceptual - Motor Function

- * Visual perception
- * Visual construction reasoning
- * Perceptual motor coordination

Executive Function

- * Planning
- * Decision making
- * Working memory
- * Responding to feedback
- * Inhibition
- * Flexibility

Complex Attention

- * Sustained attention
- * Divided attention
- * Selective attention
- * Processing speed

Language

- * Object naming
- * Word finding
- * Fluency
- * Grammar and syntax
- * Receptive language

Learning and Memory

- * Free recall
- * Cued recall
- * Recognition memory
- * Semantic and autobiographic LTM
- * Implicit learning

Social Cognition

- * Recognition of Emotion
- * Theory of mind
- * Insight

Alzheimer's Disease

- * Most common cause of dementia
- * Slowly progressive neurodegenerative disorder
- * 5.8 million people

Symptoms of AD

- * Getting lost, repeating questions, misplacing things
- * Inability to pay bills, trouble handling finances
- * Loss of judgement
- * Difficulty completing familiar tasks
- * Changes in mood, personality and behavior

Diagnosing AD

- * History, exam, clinical assessments (miniCog, MOCA)
- * Neuropsych testing, Labs, brain imaging
- * PETscan to determine abnormal amyloid plaque and aggregate tau NFL

Preventing AD

- * Some evidence of regular exercise
- * BP management, control vascular risk factors

Treatment of AD

- * Cholinesterase inhibitors, NMDA inhibitors
- * Socialize/Engage/Music
- * Donanemab and Aducanumab (Trailblazer AD) decreased amyloid and ptau s.e ARIA
- * Lecanumab (Clarity AD) given early access
 - * IgG1 monoclonal antibody, IV q2weeks
 - * Slowed cognitive and functional decline in early AD by 27%

Lewy Body Dementia

- * Parkinson's Disease Dementia
- * Dementia with Lewy Bodies
- * SAME UNDERLYING CHANGES IN THE BRAIN, THE DIFFERENCE IS THE TIMING OF WHEN THE THINKING AND MOVEMENT SYMPTOMS OCCUR

LBD in General

- * Occurs in people 50 years or older
- * Average duration 5-8 years, can be 2-20 years depending on the persons' health, age and level of symptoms
- * Cause: abnormal clumping of alpha synuclein in areas of movement, memory and thinking

LBD in General

* Symptoms:

- * problems in thinking - attention, visual spatial, planning, problem solving, unpredictable changes in alertness and concentration
- * movement - Parkinsonism
- * Behavior- hallucinations, agitation
- * Mood- depression, apathy, anxiety
- * Sleep - RBD

Diagnosing LBD

- * Query the patient and caregiver about timeline of symptoms
- * Physical exam
- * Lab test to rule out other causes
- * Brain imaging

Treatment of LBD

- * Medications to treat the various symptoms (mood, movement, sleep, behavior)
- * PT
- * Counseling
- * Home safety

What is in Pipeline for LBD?

- * Very few Phase 2 studies
- * Eli Lilly Presence study
- * Currently recruiting: Ambroxol, Transcranial US, Terazosin for DLB
- * www.clinicaltrials.gov

Parkinson's Disease Dementia

- * Occurs in about 40% of people with PD
- * Motor symptoms occur first - consistent with a diagnosis of Parkinson's Disease (good response to LD)
- * LATER: problems with thinking, changes in mood and behavior develop

Dementia with Lewy body

- * Problems with thinking
- * unpredictable changes in attention and alertness
- * Hallucinations
- * Develop **EARLY** in relation to motor symptoms (poor response to LD)

Frontotemporal Dementia

- * Progressive neurodegenerative disorder affecting people between 45-60 years
- * 10-30% genetic

Symptoms of FTD

- * Behavioral Variant
 - * Changes in personality, behavior and judgement
 - * Memory relatively intact
 - * Impulsive, problems planning, cannot prioritize, constantly repeat

- * **Primary Progressive Aphasia**

- * **Inability to communicate**

- * **Cannot speak, read, write or understand what others say**

- * **Ultimately develop dementia**

- * **Later has behavioral problems**

Cause of FTD

- * Can be mistaken for depression
- * Damage to neurons in frontal and temporal portions of brain
- * MAPT and GRN gene leading to tau deposition TDP-43

Diagnosing FTD

- * History and examination
- * Family history, genetics
- * Brain imaging, neuropsych testing
- * Brain autopsy

Treating FTD

- * No cure, manage the symptoms
- * Accept rather than challenge
- * Take a timeout when frustrated
- * Limit choices when person has apathy
- * Schedules/routines
- * Reduce confusion, improve sleep

Treating FTD

- * **Social disinhibition and impulsivity : SSRIs**
- * **Aggression or delusions: antipsychotic medications**
- * **Language: speak slowly, speech pathologist trained in aphasia**

Pipeline for FTD

- * Transcranial Stimulation
- * Verdiperstat
- * Phase 3 AL001 IV infusion for those with Progranulin gene
- * Check clinicaltrials.gov

Vascular Dementia

- * Caused by conditions that damage blood vessels in the brain : prior strokes, HTN, DM, high cholesterol

VD Symptoms

- * Trouble paying bills, following instructions
- * Forgetting current or past events
- * Misplacing things, getting lost
- * Apathy, depression, anger
- * Hallucinations, poor judgement

Diagnosing VD

- * History, examination
- * Symptoms, lifestyle
- * Lab work
- * Brain imaging

Treatment of VD

- * Prevention of future strokes
- * Modify risk factors (alcohol, smoking, cholesterol)
- * Eat well, exercise, socialize, brain games

Mimickers of Dementia

- * Conditions, often reversible, which look like dementia but are not

Mimickers of Dementia

- * Depression
- * Vitamin deficiency (B1, B6, Vitamin E, B12)
- * Infections
- * Subdural hematoma (blood between the surface of the brain and covering - common after a fall in elderly)
- * Normal Pressure Hydrocephalus ("water on the brain") memory loss, urinary problems and walking difficulties
- * Side effects of certain medications (anticholinergics)

Questions?

