Demystifying Dementia: Mild and Major Neurocognitive Disorders

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Learning Objectives

- Learn DSM-5 diagnostic criteria for major and mild neurocognitive disorder
- Learn about early warning signs of neurocognitive disorder
- Learn how to identify static versus progressive presentations
- Identify potential treatment options based on symptom presentation
Cognitive Development

• Period of growth and differentiation, leading to maturity, then a period of decline
• Most studies suggest that cognitive skills “peak” in 18-30 y.o. age range
• Advances in medicine led to increase in life duration, thus increase in incidence and prevalence of aging-related pathologies (e.g., dementias)
Prevalence of Dementia

• Data indicates increasing prevalence rates for Alzheimer's disease
• Starting at age 65, the risk of developing the disease doubles every 5 years
• By age 85 years and older, between 25% and 50% of people will exhibit signs of Alzheimer's disease (leading cause of dementia)
Prevalence of Dementia

• Up to 5.3 million Americans currently have Alzheimer's disease
• By 2050, the number is expected to double due to aging population
• Recent meta-analysis found global prevalence of dementia from all causes to be between 5% and 7% of adults age 60+
DSM-5 Introduces Neurocognitive Disorders

• DSM-5 - Diagnostic and Statistical Manual of Mental Disorders
• Acquired (not developmental)
• Represents a decline in functioning
• Historically referred to dementias, but DSM-5 NCD category expanded to include disorders affecting younger groups:
  – HIV, TBI
Neurocognitive Disorders

- Terms “major neurocognitive disorder” and “mild neurocognitive disorder” likely used only by healthcare professionals/organizations
- Alzheimer's Association still uses “dementia” and “mild cognitive impairment”
Mild Neurocognitive Disorder

• Previously known as Mild Cognitive Impairment
• Describes individuals who fall between normal cognitive changes associated with aging & mild cognitive symptoms caused by early-stage dementia

• Warning sign for dementia?
  – 20-40% of cases develop into Alzheimer’s disease within 5 or so years
Mild Neurocognitive Disorder

• 15-20% of people over 65 have some mild impairment in cognitive functioning

• Identifying which individuals will go on to develop Alzheimer’s disease is major goal of current research
Mild Neurocognitive Disorder DSM-5 Criteria

• Moderate decline in one or more cognitive domains (language, memory, motor, executive functioning, attention, visuospatial)
  – Documented by report (self-, collateral) and standardized testing or clinical assessment (e.g., neuropsychological testing)
• Cognitive deficits do not interfere with independent activities of daily living
• Subtypes: amnestic vs. nonamnestic
Major Neurocognitive Disorder DSM-5 Criteria

• “Dementia” commonly used instead, but DSM-5 introduced NCD to avoid stigma
• Significant decline from previous performance in one or more cognitive domains
  – Documented by report (self-, collateral) and standardized testing or clinical assessment (neuropsychological testing)
• Cognitive deficits interfere with independent activities of daily living (making a meal, paying bills, driving)
Differentiating b/w Mild & Major NCD

• Mild vs. major conveys symptom severity level
• Mild NCD does not interfere with independence
• Can be somewhat arbitrary - use DSM criteria and clinical judgment

• On neuropsychological testing:
  – Mild: 1–2 standard deviation (between the 3rd and 16th percentiles)
  – Major: Below 2 standard deviations (or below 3rd percentile)
Neuropsychological Evaluation

- Neuropsychological testing assists in many ways:
  - Tests can reveal patterns of impairment when medical tests provide no obvious cause of cognitive loss
  - Differentiate normal aging from dementia or mild cognitive impairment
  - Early detection of dementia
  - Conclude underlying cause of impairment, which is crucial for prognosis and application of disease-specific treatments
Neuropsychological Evaluation

- Provides targeted test batteries and individualized treatment recommendations (which can save time and money)
- Can identify decline from previous functioning and track cognitive problems over time
- Identifies factors/barriers that can affect treatment adherence and possible recovery
Major or Mild NCD due to...

- NCD does not refer only to dementia
- Must specify the etiology
Possible Etiologies

• Alzheimer’s Disease
• Frontotemporal Dementia
• Dementia with Lewy Bodies
• Vascular Dementia
• Traumatic Brain Injury
• Substance/Medication-Induced
• HIV Infection
• Parkinson’s Disease
• Huntington’s Disease
Dementia Pathology

• Etiology of dementia varies

• Most common dementias:
  – Alzheimer’s disease
  – Vascular dementia
  – Dementia with Lewy bodies
  – Fronto-temporal dementia

• Progressive course
Alzheimer’s disease

- Most common cause of dementia
- Accounts for an estimated 60%-80% of cases
- About half of these cases involve solely Alzheimer’s pathology, rest show evidence of pathologic changes related to other dementias (called “mixed dementia”)
Alzheimer’s disease

• Key features:
  – Early in the disease, difficulty remembering recent conversations, names or events
  – Rapid forgetting of information
  – Apathy and depression are also often early symptoms
  – Later symptoms include impaired communication, disorientation, confusion, poor judgment, behavior changes
Vascular Dementia

- Accounts for about 10% of dementia cases
- However, vascular problems (strokes, hypertension, etc) very common in older adults
- 50% of Alzheimer’s cases have pathologic evidence of vascular dementia
- Infarcts often coexist with Alzheimer’s pathology
Vascular Dementia

• Key Features:
  – visual spatial problems, impaired judgment, poor attention, motor function, slow gait, poor balance
  – location, number, and size of stroke(s) impact the severity and course of the disease
Dementia with Lewy Bodies

- Lewy bodies are abnormal build ups of the protein alpha-synuclein in neurons
- Often coexists with Alzheimer’s pathology
- Typically present with some psychiatric symptoms
Dementia with Lewy Bodies

• Key Features:
  – early movement abnormalities
  – fluctuating alertness/attention
  – hunched posture, rigidity, balance problems
  – visual hallucinations, delusions
  – disrupted sleep pattern (REM sleep disorder)
  – confusion
  – reduced visual perceptual abilities
Fronto-Temporal Dementia

• Earlier onset
  – 60% develop FTD symptoms between ages 45-60
• Significant behavior & personality changes
• Difficulties with language
• Memory usually preserved early in disease (unlike AD)
• Subtypes:
  – Behavior variant (personality and behavioral changes)
  – Primary progressive aphasia (language difficulties)
Static/Non-progressive Conditions

• An individual can have serious cognitive impairment not due to a dementia
• Not necessarily progressive course
• Depending on severity of injury, these conditions can improve
  – TBI
  – Acute stroke
Reversible Conditions

• Some conditions can mimic dementia symptoms
  – Depression
    • memory complaints, withdrawn behavior
  – Delirium
    • fluctuating attention, confusion, incoherent speech, hallucinations or delusions
  – Hypothyroidism
    • reduced attention, fatigue, memory complaints
Reversible Conditions

– B12 deficiency (related to alcohol abuse)
  • motor slowness, confusion, memory complaints
– Hydrocephalus
  • confusion, incontinence, gait problems
– Medication side effects
– Brain bleeds
• Clinicians should be careful to rule out any underlying reversible causes
• Recommend full work up done by physician
Mild/Major Neurocognitive Disorder Treatment

- Rule out reversible causes (thyroid problems, vitamin deficiencies, delirium, substance abuse, medication side effects)
- Medications can slow progression of decline, but cannot cure
  - Cholinesterase inhibitors: donepezil (Aricept), rivastigmine (Exelon), galantamine (Razadyne)
  - Memantine (Namenda)
Treatment

• Neuropsychologist can assist with psychoeducation about and adjustment to the disease

• Reduce vascular risk factors that contribute (smoking, poor management of health conditions, physical inactivity)

• Maintaining active lifestyle

• Therapies - cognitive, occupational, psychotherapy

• Caregiver support (support groups, respite)
Treatment

- Family can consider life care planning
- As the disease progresses, can consider:
  - home health care
  - adult day services
  - assisted living
  - speciality dementia care units
- An important aspect of care is keeping an active body and brain
References


