

Dementia: A brief overview

Key Points

Dementia is an umbrella term for chronic and progressive brain disease affecting higher cortical function.

It is estimated that the prevalence of Alzheimer's Disease and Related Dementias (ADRD) will triple by 2050.

Mild cognitive impairment (MCI) may be described as a transition phase between cognitive changes from normal aging and dementia.

Overview

Dementia is an umbrella term that includes:

- Alzheimer's Disease
 - Damage to the brain includes development of plaque, neurofibrillary tangles, synaptic loss, neuronal atrophy
 - Clinical manifestations may include impairment of memory, functional impairment, apraxia, aphasia, agnosia, executive function dysfunction
 - Insidious progression
 - Accounts for 50-70 percent of dementias
- Vascular Dementia
 - Accounts for 33% of dementias
 - History or presence of cerebrovascular accident with positive radiologic infarct finding
 - Progression may be both rapid and related to stroke-like event or stepwise delayed recall
 - Concomitant depression is common
- Frontotemporal Dementia
 - Pathology of frontal and anterior temporal areas; frontotemporal lobar degeneration
 - Early age of onset
 - Early behavioral changes are a red flag: disinhibition, apathy, hyperorality, inappropriate social interaction
 - Poor execute and language function and relatively spared memory
- Parkinson Disease Dementia
 - Typical subcortical pattern: impairments in attention, executive function and visuospatial function
 - Insidious onset
 - Variable rates of progression
 - Depression is very prevalent (some estimates up to 50%)

- Dementia with Lewy Bodies
 - Triad of symptoms – fluctuating cognition, Parkinson-like symptoms and visual hallucination
 - Other symptoms may include REM sleep disorders and frequent falls
- Mixed Dementia
 - Dementia with two causes, e.g. Alzheimer’s Disease and Vascular Dementia
 - Dementia with Lewy Bodies and Vascular Dementia

Risk factors include:

- Advancing age
- Family history and genetics
- History of psychiatric disorders
- History of head trauma
- Cardiovascular disease and related risk factors
- Alcohol misuse, drug misuse, and toxins
- Vasculitis
- Endocrine disorders

Assessment

Assess for delirium before dementia. The CAM is a recommended screening tool:

http://www.pogoe.org/AngelUploads/applications/Dementia/Content/mmse_va.html

Comparing Dementia and Delirium		
	Dementia	Delirium
Onset	Insidious, with an uncertain starting point	Rapid, usually with a certain starting point
Main symptom	Loss of memory, particularly for a recent event(s)	Inattention
Cause	May be related to an underlying brain disorder, such as Alzheimer disease, vascular dementia, or Lewy body dementia	Nearly always related to underlying acute change, such as dehydration, infection, or starting or stopping medications
Orientation	Impaired	Fluctuates
Level of consciousness	May be normal until advanced stages	Fluctuates from being lethargic to hyperalert
Language	May be problematic with word choices	Slowed or rapid speech, frequently with incoherent and/or inappropriate language
Progression	Slowly progresses, gradually	Causes variations in mental

	but eventually greatly impairing all mental functions	function- people are alert one moment and sluggish and drowsy the next
Development	Often permanent	Fluctuates; days to weeks to months
Treatment	Needed but less urgently; slows progression but does not cure	Immediate; usually reversible

Once delirium is ruled out, the next steps are:

- The evaluation of a patient with suspected dementia should focus upon the history.
 - Family members or other informants who know the patient well are invaluable resources for providing an adequate history of cognitive and behavioral changes.
 - Adequate time should be arranged for a full assessment of cognitive function, followed by a complete physical examination, including neurologic examination.
 - Ask simple yes or no questions
- Diagnostics include:
 - Neuropsychological testing
 - Cognitive screening tests- St. Louis University Mental Status (SLUMS) or the Mini-Cog
 - Depression screening tests – Geriatric Depression Scale (GDS) or Hamilton Depression Rating Scale (HDRS)
 - Functional Level of Independence – Katz Index of Activities of Daily Living (ADL) or Lawton Instrumental Activities of Daily Living Scale (IADL)
 - Laboratory evaluation – Complete blood count, complete metabolic panel, thyroid screen, Vitamin B12 and folate, C reactive protein, RPR, Lipid panel, HIV screen, sedimentation rate and other test as indicated by the history and physical
 - Neuroimaging, MRI (preferred) or CT to rule out potentially treatable intracerebral lesions (Normal Pressure Hydrocephalus, subdural hematoma) and to rule out cortical and subcortical infarcts, white matter changes, localized atrophy.
 - Other investigations – CSF fluid evaluation, genetic testing, PET scans, and EEG

Treatment

Stages of Dementia

- There are three stages of dementia: Mild, moderate and severe
- There are six criteria utilized to determine the staging:
 - Memory

- Orientation
 - Judgment
 - Problem solving
 - Community Affairs
 - Home and hobbies
 - Personal care
- Dependent on stage and type of dementia
 - Goals include:
 - Stabilize cognitive ability
 - Improve mood
 - Promote autonomy
 - Effective future planning
 - Interprofessional team interventions include both non-pharmacologic and pharmacologic strategies.

References

Alzheimer's Association (2012). 2012 Alzheimer's Disease Facts and Figures - *Alzheimer's Association*. Retrieved from <http://www.merck.com/mmhe/sec06/ch083/ch083a.html>

Alzheimer's Association (2012). Basics of Alzheimer 's disease: What is it and what you can do. Retrieved from http://www.alz.org/national/documents/brochure_basicsofalz_low.pdf. Accessed November 1, 2013.

Feldman, H.H., Jacova, C., & Robillard, A. (2009). Diagnosis and Treatment of Dementia. *Canadian Medical Association Journal*, 178(7):825-836.

Lawton, M.P., & Brody, E.M. (1969). Assessment of older people: Self-maintaining and instrumental activities of daily living. *Gerontologist*, 9:179.

Sheikh, J.L. Yesavage, J.A. (1986) Geriatric Depression Scale (GDS): Recent evidence and development of shorter version. *Clinical Gerontologist*, 5:165.

U.S. Preventative Services Task Force (2003). Screening for dementia: recommendations and rationale. *Annals of Internal Medicine*; 138: 925-926.