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## A review on assessment and management of dementia

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**Abstract-** Dementia is a syndrome characterized by progressive deterioration in several cognitive domains, resulting in substantial functional impairment. Dementia is one of the most expensive and disabling diseases associated with aging, although it is frequently misdiagnosed in basic care. In the long-term care situation, dementia is a common but potentially underdiagnosed condition. Targeted screening for dementia should be standard practice, as a dementia diagnosis will help the patient's care. The assessment of dementia should be done in stages and suited to the demands of the particular patient. Care for cognitive changes, behavioral changes, functional problems, and emotional concerns are all part of dementia management. It also includes the management of various illnesses in light of the dementia, as well as consideration of the wants and desires of the patients. Dementia management entails caring for cognitive changes, behavioral changes, functional problems, and emotional concerns. It also includes the management of other conditions in light of the dementia, consideration of the caregiver's requirements and well-being, and a focus on advanced care planning. This all-encompassing approach to dementia treatment may reduce the disease's morbidity and mortality rate. Along with a clear prognosis and consideration of quality of life issues, this care approach provides patients and their families with vital information and services. This review specifically examines assessment, aetiology and explores strategies for management of dementia.

**Key words:** Dementia, Assessment, management, morbidity, mortality

### INTRODUCTION

Dementia is a complex and progressive condition characterized by a decline in cognitive function that affects a person's ability to perform everyday activities. It is an acquired loss of cognition in multiple cognitive domains sufficiently severe to affect social or occupational function. It's not a specific disease but rather a syndrome with various underlying causes.<sup>1</sup> The most common type of dementia is Alzheimer's disease, but there are others like vascular

dementia, Lewy body dementia, and frontotemporal dementia. Alzheimer's disease is the most common cause of dementia, but often several other conditions causing dementia are present on brain autopsies.<sup>2</sup> The symptoms of dementia include memory loss, impaired reasoning, and changes in behavior. As the condition advances, individuals may struggle with communication, face challenges in problem-solving, and experience personality changes.<sup>3</sup> Dementia can be emotionally challenging for both the affected individuals and their loved ones. Early diagnosis and appropriate management are crucial in providing

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support and improving the quality of life for those with dementia. While there is currently no cure, various interventions, including medication, therapy, and lifestyle modifications, can help manage symptoms and slow down

the progression of the disease in some cases.<sup>4</sup> Assessment and management of dementia involve a comprehensive and integrated approach to address the cognitive, emotional, and functional aspects of the condition. The clinical characteristics of common dementias (Table 1).

Table 1- Clinical Characteristics of Common Dementias

	Alzheimer disease	Frontotemporal dementia	Lewy body dementia	Vascular dementia
Age of onset	>65	<65	>65	>65
First changes	Memory problems	Personality change	Fluctuating cognition, visual hallucinations, REM-sleep behavior disorder	Variable, focal neurologic symptoms
Progression	Insidious onset	Insidious onset	Insidious onset, gradual with fluctuations	Abrupt or gradual, stepwise
Motor symptoms	Apraxia	Frontal release signs	Parkinsonism	Focal weakness
Imaging	Hippocampal and generalized atrophy, temporal and parietal hypometabolism	Frontal/temporal atrophy and hypometabolism	Generalized atrophy, occipital hypometabolism	Strokes, lacunar infarcts
Pathology	Neurofibrillary tangles and amyloid plaques	Tau, transactive response DNA binding protein (TDP-43), Pick cells and Pick bodies in cortex	$\alpha$ -synuclein* Lewy bodies in cortex and midbrain	Arterioles with thickened vessel wall

### Assessment of Dementia

Assessing dementia involves a comprehensive evaluation to understand the extent and nature of cognitive decline. A healthcare professional, often a neurologist or geriatrician, will conduct various assessments.<sup>5,6</sup> Here are some common components:

- **Medical History:** Gathering information about the individual's overall health, past medical conditions, and family history of dementia.
- **Physical Examination:** A thorough physical examination may help identify any underlying health issues contributing to cognitive decline.
- **Cognitive Testing:** Standardized tests like the Mini-Mental State Examination (MMSE) or Montreal Cognitive Assessment (MoCA) are commonly used to assess memory, attention, language, and other cognitive functions.
- **Neurological Examination:** Evaluating reflexes, balance, and coordination to identify any neurological abnormalities.
- **Brain Imaging:** MRI or CT scans can reveal structural changes in the brain, helping to identify conditions like tumors or strokes.
- **Blood Tests:** Checking for conditions such as vitamin deficiencies, thyroid problems, or infections that may contribute to cognitive decline.

- **Psychological and Behavioral Assessment:** Assessing changes in mood, behavior, and personality to understand the impact on daily life.
- **Functional Assessment:** Evaluating the individual's ability to perform daily activities, such as dressing, eating, and managing finances.
- **Caregiver Input:** Gathering information from family members or caregivers is essential for understanding changes in behavior and daily functioning.
- **Specialized Tests:** In some cases, more specialized tests like PET scans or cerebrospinal fluid analysis may be conducted to identify specific markers associated with certain types of dementia.

It's important to note that the assessment process is often ongoing, and regular follow-ups may be necessary to monitor changes in cognitive function over time. Early and accurate assessment is crucial for effective management and support for individuals living with dementia.

### Aetiology of dementia

It's critical to identify the underlying causes of dementia in patients once a diagnosis has been made. These include toxic and metabolic factors, as well as a range of neurodegenerative illnesses. Among them, Alzheimer's disease (AD) accounts for 60% to 80% of all cases of

dementia in the elderly, with vascular dementia (VaD) following closely behind with 20% of cases.<sup>7</sup> The prevalence of dementia varies with respect to place, culture, and socioeconomic status. Lewy body dementia (DLB) is a prevalent type of degenerative dementia, constituting 4.2% of all dementia patients with a diagnosis in the community. Most chronic dementia cases that remain are caused by unusual conditions such as frontotemporal dementia (FTD), Parkinson-plus syndromes, alcohol-related dementia, chronic traumatic encephalopathy, and other disorders of the central nervous system.<sup>8</sup>

### Common subtypes of dementia

Alzheimer's disease often develops with age, and the incidence of the condition rises exponentially in those over 65. Memory impairment is the most common symptom of AD, and it progresses slowly at first. While language impairments and behavioral symptoms typically appear later in the course of the disease, deficiencies in other cognitive domains, such as executive and visuospatial, tend to arise rather early.<sup>9</sup> Vascular dementia is primarily caused by cerebrovascular disease and/or impaired cerebral blood flow. There are two main syndromes of Vascular Dementia (VaD): post-stroke dementia and VaD without recent stroke. Dementia with Lewy bodies is a form of dementia caused by abnormal protein structures called Lewy bodies, which co-occur with symptoms of Parkinsonism such as trembling, stiffness, and slowness.<sup>10</sup> Other classical features of DLB include rapid eye movement sleep behavioural disorder and fluctuation of cognition (both are easy to elicit from history). This disorder often causes vivid and longlasting visual hallucinations. Differential diagnosis of DLB includes other degenerative dementias, especially if complicated by superimposed delirium, medication toxicity, or seizures. Diagnosis of DLB is made primarily by the revised criteria for clinical diagnosis. Frontotemporal dementia is a heterogeneous neurodegenerative disorder characterised by frontal and/or temporal lobe degeneration with early-onset dementia presenting with prominent changes in social behaviour, personality, or aphasia.<sup>11</sup> Clinical manifestations include non-fluent variant PPA, semantic variation PPA, two kinds of primary progressive aphasia (PPA), and behavioral variant FTD. The most prevalent of these is the behavioral variety of FTD, which is characterized by progressive personality and behavioral abnormalities such as lack of empathy, apathy, disinhibition, hyperorality, and obsessive behaviors. An international

group developed diagnostic criteria for FTD that combine clinical characteristics, genetic testing, neuropathology, and neuroimaging.<sup>12,13</sup>

### Management of Dementia

Managing dementia involves a multidimensional approach aimed at addressing cognitive, emotional, and functional aspects. While there's no cure, various strategies can improve the quality of life for individuals with dementia.<sup>14-16</sup> Here are key components of dementia management:

- 1. Medication:** Some medications may help manage symptoms and slow down the progression of certain types of dementia. Cholinesterase inhibitors and memantine are commonly prescribed.
- 2. Behavioral Interventions:** Strategies to manage challenging behaviors, such as aggression or agitation, through environmental modifications, routines, and sensory stimulation.
- 3. Cognitive Stimulation:** Engaging activities and cognitive exercises can help maintain cognitive function and provide a sense of purpose. This includes puzzles, games, and reminiscence therapy.
- 4. Physical Exercise:** Regular physical activity has been linked to cognitive benefits. It can improve mood, reduce stress, and enhance overall well-being.
- 5. Nutritional Support:** A balanced diet with adequate nutrients is crucial. Some studies suggest that certain diets, such as the Mediterranean diet, may have protective effects against cognitive decline.
- 6. Social Engagement:** Maintaining social connections can help prevent isolation and depression. Social activities, support groups, and interaction with family and friends contribute to emotional well-being.
- 7. Environmental Modifications:** Creating a safe and supportive environment with clear pathways, reduced noise, and familiar items can enhance the individual's sense of security.
- 8. Caregiver Support:** Providing support and education for caregivers is essential. This includes respite care, counseling, and assistance in managing the emotional and physical demands of caregiving.

9. **Legal and Financial Planning:** Addressing legal and financial matters early on, such as power of attorney and healthcare directives, ensures that the individual's wishes are respected as the disease progresses.
  10. **Technology:** Assistive technologies, such as reminder apps, GPS trackers, and smart home devices, can help individuals with dementia maintain independence and safety.
  11. **Regular Monitoring and Adjustments:** Regular assessments allow healthcare professionals to monitor changes in the individual's condition and adjust interventions accordingly.
  12. **Clinical Trials and Research Participation:** Participation in clinical trials and research studies may provide access to innovative treatments and contribute to the advancement of dementia research.
- Tailoring the management approach to the individual's specific needs and regularly reassessing the plan are crucial for effective dementia care. It's a collaborative effort involving healthcare professionals, caregivers, and the broader support network.

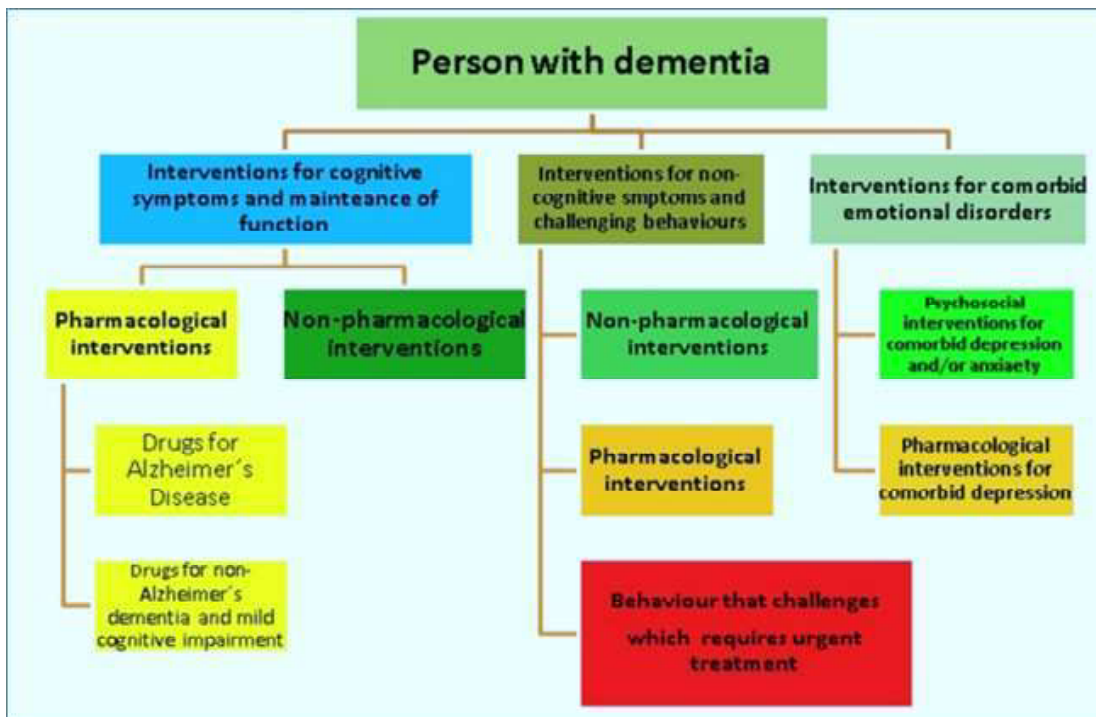


Figure 1: Recommended guidelines for the Management of Dementia<sup>17</sup>

## CONCLUSION

Early detection of dementia is crucial, as is conducting timely assessments to start the right treatment and allowing people to have a say in how their condition is managed. A concentrated history of cognitive and behavioral abnormalities should be taken as the first step in evaluating a patient who is suspected of having dementia. This should be followed by a thorough physical examination. Dementia is a complex disease that affects people and is caused by many different factors. A personalized and all-encompassing method of evaluation and care takes into account the particular requirements and preferences of the

dementia patient, requiring cooperation from medical specialists, family members, and the patient themselves. Certain dementia risk factors, like age and heredity, are unchangeable. However, studies are still being conducted to determine how other risk variables affect brain function and dementia prevention. The management of dementia will increasingly involve primary care in the future. For complex case management, particularly when pharmaceutical therapy is required, close collaboration between primary care physicians (PCPs) and specialists is essential.

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