

Management of Dementia in Primary Care

Elham Yahya Baamer^{1*}, Hani Mousa Alkhalaf², Talal Amer M Alghamdi³, Sultan Meshal F Altoom⁴, Mohammed Faisal Alajmi⁴, Abdullah Bakr Bannani⁵, Abdulwahab Saeed Bin Mohammed Alshahrani³, Bayan Jamal Alibrahim⁶, Marwan Fahd Saud Sarhan⁶, Zahrah Mohammed Alkashi⁷ and Mohammed Nasser Alhajjaj⁸

¹Consultant Family Medicine, Saudi and Arab Board, Specialized Poly Clinic, King Abdulaziz Medical City, National Guard, Saudi Arabia

²King Fahad Hofof Hospital, Saudi Arabia

³King Khalid University, Abha, Saudi Arabia

⁴Imam Muhammad Ibn Saud Islamic University, Saudi Arabia

⁵King Abdulaziz Hospital, Makkah, Saudi Arabia

⁶Ibn Sina National College, Saudi Arabia

⁷Medical University of Warsaw, Poland

⁸Al Sulayyil Hospital, Saudi Arabia

***Corresponding Author:** Elham Yahya Baamer, Consultant Family Medicine, Saudi and Arab Board, Specialized Poly Clinic, King Abdulaziz Medical City, National Guard, Saudi Arabia.

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Abstract

Background: Dementia is a syndrome characterized by progressive cognitive impairment and is associated with impairment in functional abilities and in many cases, behavioral and psychological symptoms. The incidence of dementia rises with age making it an increasingly common phenomenon within our aging population.

Aim: In this review, we will look into the diagnosis and management of dementia in primary care.

Methodology: The review is comprehensive research of PUBMED since the year 1988 to 2017.

Conclusion: Clinicians should be knowledgeable about the various neurocognitive disorders which are common and devastating in older adults. Caregiver support and non-pharmacological interventions to manage symptoms like BPSD are the main ingredients of dementia care. Psychosocial management forms the first line and shall be given to all with BPSD. Diagnosis requires careful history-taking and skilled clinical assessment, followed by appropriate laboratory investigations.

Keywords: Dementia; Primary Care; Management of Dementia

Introduction

Dementia is a syndrome characterized by progressive cognitive impairment and is associated with impairment in functional abilities and in many cases, behavioral and psychological symptoms. The incidence of dementia rises with age making it an increasingly common phenomenon within our aging population [1].

Dementia comes in many forms, with the Alzheimer's and vascular subtypes being most common. Dementia (neurodegenerative) is age related, with prevalence estimated at 20% in individuals older than 85 years [2].

Symptoms of dementia are gradual, persistent and progressive. Individuals suffering from dementia experience changes in cognition, function and behavior. The clinical presentation of dementia varies greatly among individuals, and the cognitive deficits it causes can present as memory loss, communication and language impairments, agnosia (inability to recognize objects), apraxia (inability to perform previously learned tasks) and impaired executive function (reasoning, judgement and planning) [3].

Community-based primary care settings are typically the first point of contact for people with symptoms of dementia and their caregivers, and family physicians are vital in achieving effective and efficient diagnosis and management. Enabling primary care physicians and their associated teams of providers to promote and execute early diagnosis and treatment will likely be a fundamental aspect of emerging pharmaceutical treatments for the disease [4].

Accurate diagnosis of dementia is important for prognosis and to guide therapy. An individual's ability to accommodate, compensate, or even deny his or her symptoms in the early stages should also be considered. The individual's family may also have noticed difficulties in communication and personality or mood changes; family concern is of particular importance [5].

Once the diagnosis is established, prognostic measures are required, and are still lacking, as disease trajectories between individuals can vary greatly. Managing dementia is particularly challenging because of the complexity of the disorder and limitations in current pharmacological options. The treatment plan for each patient should be individualized to provide the most effective and safe drug therapy [6].

Improving the assessment and management of dementia in these settings will have a major and growing impact throughout the health and social care system, including modifying demand for specialist services and long-term care placement [4].

Epidemiology

Dementia is often arbitrarily considered early (< 65yrs) or late-onset (> 65yrs), with the vast majority (> 97%) of cases being of late-onset [7]. In higher income countries, prevalence is 5 - 10% in those aged 65+ years, usually greater among women than among men, in large part because women live longer than men. Within the US, higher prevalence has been reported in African American and Latino/Hispanic populations than in White non-Hispanic populations [8].

Global estimates of a doubling in the dementia population every 20 years giving an estimated 115 million people with dementia by 2050 were revised further upwards in 2013, to take account of the likely further increases in lower and middle income countries [9]. It is either similar in men and women or slightly higher in women. Annual age-specific rates ranged from 0.1% at age 60 - 64 to 8.6% at age 95 [10].

Risk factors

Risk factors are factors associated with an elevated incidence rate of disease, higher odds of developing disease, or earlier onset of disease, depending on the type of statistical analysis that is performed. Increasing age is not only the strongest risk factor for dementia, but also the only risk factor consistently identified after the eighth decade of life. Lower educational levels have been found associated with higher prevalence. Few dementias are caused by deterministic autosomal dominant genes; these are discussed later under the specific disorders [11,12].

Cardiovascular disease is increasingly recognized as not just a risk factor for vascular dementia but also for degenerative dementias, particularly AD. Risk factors in midlife, including hypertension, high cholesterol, high body mass index (BMI) and diabetes mellitus are associated with increased risk of dementia in late life, demonstrating the importance of risk exposures decades earlier [13-15].

Inflammation and alterations in inflammatory markers [interleukins, cytokines, C-reactive protein] have been reported in Alzheimer's and vascular dementias. Depression has a complex and likely bi-directional association with dementia. Recurrent major depression in earlier adulthood appears to increase risk of dementia in later life. Post-traumatic stress disorder has been reported as increasing risk of dementia [16,17].

Neurocognitive disorders can occur immediately after a traumatic brain injury or after the recovery of consciousness at any age. Parkinson's disease risk is associated with exposure to pesticides, for which a molecular mechanism has been established [18].

Many environmental and occupational exposures have shown varying associations with neurodegenerative diseases. Smoking has been associated with an elevated risk of dementia. Heavy consumption of alcohol increases odds of developing dementia [19-21].

Several therapies for other conditions have been found in long-term observational studies to be associated with a reduced risk of dementia. Adherence to a Mediterranean diet was associated with better cognitive functioning, lower rates of cognitive decline and a reduced risk of AD [22].

Syndromic classification

Neurodegenerative: Mild cognitive impairment a demonstrable memory problem for age can be identified; however, patients do not meet the criteria for dementia as they retain normal ADL and social functioning. Cognitive difficulties in areas other than memory are associated with a significantly increased risk of developing dementia. The efficacy of treating MCI patients with cholinesterase inhibitors is unclear and deserves further study. A recent Cochrane review suggests that MCI patients should not be treated with the cholinesterase inhibitor donepezil. Vitamin E supplementation was not demonstrated to be beneficial for MCI [23,24].

Mixed dementia: Vascular dementia share many features and can be difficult to separate clinically. It is becoming increasingly recognized that a transitional state or 'mixed dementia' in which features of both disorders occurs. In addition, cerebrovascular risk factors of diabetes, hypertension, coronary artery disease and current smoking have been shown to independently increase the risk of developing AD and vascular dementia, particularly as the number of risk factors increases [25,26].

Vascular dementia: Vascular dementia is considered the second major dementia classification. Its prevalence is second only to AD, accounting for 10-20% of cases. Patients may have comorbid conditions such as diabetes, hypertension and hyperlipidemia. Different criteria for diagnosis have been proposed. Vascular dementia can present as an abrupt deterioration in cognitive function or in a fluctuating, stepwise manner. Suspected cases should have evidence on brain imaging suggesting one or more infarcts, and/or extensive periventricular ischemic white-matter disease [27,28].

Potentially reversible syndromes: There are a variety of medical conditions that may result in cognitive changes similar to those observed in demented patients. In general, it appears that the frequency of potentially reversible dementia syndromes identified has decreased. The most frequent causes are medications, depression and metabolic diseases. It is well documented that depression can lead to memory loss, attention deficits, initiation problems and is commonly termed 'pseudo-dementia of depression' Depression should be treated with therapeutic doses of an antidepressant. Elderly patients are often hypersensitive to medication side effects. Eliminating or reducing dosages of certain medications may improve patients' function [29,30].

Diagnostic approach

The first step in evaluating patients with cognitive complaints is defining whether dementia is present. This requires the identification of the cognitive problem, time of onset, progression (if any) and what functional impairment(s) have resulted. Patients not meeting criteria for dementia may be diagnosed with mild cognitive impairment (MCI) [31]. An accurate and detailed history is essential to dementia diagnosis. Assessment of a patient's premorbid function allows one to estimate severity [32].

Patients with dementia may not complain of cognitive difficulty owing to loss of self-awareness (anosognosia). As a result, concerned family members may initiate the neurological evaluation. Screening a number of cognitive domains is not necessarily time consuming. A complete physical examination is recommended to identify comorbid medical illnesses that may be affecting cognition. The value of complete neurological examination is immense. Hypertonia, masked facies and/or slowed movements could suggest Parkinsonism. Gait should be closely examined for stability, step size, speed and turning proficiency to identify superimposed pyramidal or extrapyramidal motor deficits [33,34].

Laboratory testing should be considered to identify potentially reversible conditions that may mimic dementia. Which laboratory studies to order is controversial. Some clinicians suggest a detailed laboratory evaluation to include complete blood counts (CBC), chemistry panels, erythrocyte sedimentation rate, thyroid function tests (thyroid-stimulating hormone [TSH] and free thyroxine [FT4]), vitamin B12 level, thiamine level and syphilis screening [32,35].

Brain imaging (magnetic resonance imaging [MRI] or computed tomography [CT]) is recommended for all patients to identify structural, demyelinating, inflammatory or vascular etiologies. Cerebrospinal fluid showing increased levels of tau protein, in combination with decreased levels of amyloid- β 42 protein, may have a positive predictive value of AD approaching 90% [34,36].

Positron emission tomography (PET) and single photon-emission computed tomography (SPECT) may be useful in difficult to diagnose cases and to improve diagnostic accuracy. Furthermore, markers for amyloid and neurofibrillary tangles (NFTs) may allow earlier prediction of cognitive status and serve as a biomarker for interventional studies [37,38].

Clinician should take care, not to misdiagnose Delirium as Dementia and also not to miss the diagnosis of Delirium when it is superimposed on dementia. When there is clinical suspicion of delirium, the efforts should focus on identifying the causes. Delirium in older people is most often multifactorial in etiology and identification of the underlying conditions would enable us to provide interventions to reverse/modify them. Diagnosis of subtype is important given differences in management, disease course, and outcomes for different dementias; awareness of early symptoms in less common dementias can assist generalists in deciding to which specialist services patients are referred [39].

Management

GPs are highly regarded by families of people with dementia because they provide continuity of care, have established relationships of trust, act as advocates and problem-solvers and they open the gates to other sources of help. Many people with early dementia retain some insight, can understand their diagnosis and should be involved in decision-making. Patients and care givers should be provided with information about the services and interventions available to them at all stages of the patient's journey of care [40].

Non-drug approaches: People with mild to moderate dementia of all types should be encouraged to participate in structured cognitive stimulation programs. They benefit cognition in such patients irrespective of whether any drug is prescribed or not. In a large systematic review evaluating both drug and non-drug interventions in dementia care, cognitive stimulation therapy was found to be as clinically and cost effective as the acetylcholinesterase inhibitors; reminiscence therapy is also recommended in national guidelines [41]. Although various cognitive training and exercise programs have been proposed to improve or preserve cognition and function in patients with mild to moderate dementia, multiple studies have not provided sufficient evidence to support any particular beneficial intervention [42].

Patients and care givers should be referred to a social worker if a care giver's assessment is felt appropriate and to facilitate access to services such as Day Centers and social services care provision. No formal cognitive training services are currently being offered consistently though supportive evidence is emerging and may translate into service provision. All patients should be advised to inform the Driver & Vehicle Agency and their insurer of a diagnosis of dementia. If there are concerns regarding a patient's ability to drive they should be advised to stop driving [43].

Patients may have difficulties articulating symptoms. Constipation and acute urinary retention for example should be actively sought out. Disorientation and agitation may develop and both environmental (e.g. clear signage and clocks) and attitudinal (e.g. repeated reassurance, clear explanations, good lighting, involvement of families) approaches can ameliorate this. Rehabilitation attempts can be hampered by cognitive impairments but dementia should not be a contraindication to rehabilitation as evidence for benefit exists [44].

Anxiety and agitation can often be managed with behavioral techniques that attempt to reduce the level of impersonal, task focused and intrusive care methods. In addition, aromatherapy, pet therapy and music therapy have also shown some efficacy [45].

Pharmacological treatment: Offending medications, in particular those with anticholinergic properties should be reconsidered and stopped where possible. It is important to note that even over the counter medications can affect cognition. The currently available options for the pharmacological treatment of dementia are essentially symptomatic treatments with limited effectiveness. Treatment of dementia needs to be focused on improving the cognitive function, amelioration of associated behavioral and psychological symptoms and improvement or stabilization of global functioning in daily activities.

Medication management includes the elimination of medications which are unnecessary or have the potential to exacerbate symptoms (e.g. anticholinergics). Identification and optimization of comorbidities, such as hypertension, diabetes mellitus, and hyperlipidemia, will assist in lowering patient vascular risk factors but have not demonstrated an impact on cognitive function [48].

Cholinesterase Inhibitors (Donepezil, Rivastigmine and Galantamine) and NMDA antagonist (Memantine) are the approved pharmacological treatment options for the cognitive impairment in Alzheimer's Dementia. Rivastigmine Transdermal patch (4.6 mg, 9.5 mg or 13,3 mg per 24 hours) has been approved for mild to moderate Alzheimer's dementia. The extent of adverse effects with Rivastigmine is lesser in transdermal patch than oral formulation. Rivastigmine transdermal patch can be considered if there are significant gastrointestinal side effects with oral cholinesterase inhibitor [49,50].

Donepezil has been approved for all stages of Alzheimer's dementia. Rivastigmine and Galantamine have been approved for mild to moderate Alzheimer's dementia. Memantine can be considered as the choice of drug for treatment of patients with Alzheimer's dementia when cholinesterase inhibitors are contraindicated or could not be tolerated due to adverse effects [51].

At present, acetylcholinesterase inhibitors are the only recommended options to manage mild to moderate Alzheimer's disease and there is no evidence that one is more efficacious than another; notwithstanding, a large randomized controlled trial has recently shown that continued treatment with donepezil is associated with cognitive benefits in moderate to severe dementia [52,53].

Conclusion

Clinicians should be knowledgeable about the various neurocognitive disorders which are common and devastating in older adults. Caregiver support and non-pharmacological interventions to manage symptoms like BPSD are the main ingredients of dementia care. Psychosocial management forms the first line and shall be given to all with BPSD. Diagnosis requires careful history-taking and skilled clinical assessment, followed by appropriate laboratory investigations.

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