Dementia and visual impairment: what is the relationship and are we providing the best care?

BY CARLA MADEN

Carla Maden discusses the implications of living with both dementia and visual impairment, and how general medical junior doctors and ophthalmologists can help to alleviate this burden and improve the quality of life of such patients.

Dementia and visual impairment are two of the most common disorders of older age. Almost 1 million people in the UK are living with dementia, and a significant proportion also have visual impairment. One in five adults >70-years-old live with a form of visual impairment, and this increases to one in two adults >90-years-old [1]. Both dementia and sight loss will have a profound impact on a patient's quality of life, mobility and level of independence. The burden of both conditions is set to rise as the population ages, yet the association between the two remains poorly understood and is often overlooked.

A study funded by the National Institute for Health Research found that up to one-third of people with dementia in the UK have serious vision impairment, which is higher than the general population of the same age; in care homes specifically, this number rises to half of all people with dementia [2]. Poor visual acuity at baseline has been shown to be an independent risk factor for the development of cognitive impairment in large prospective cohort studies, even after controlling for various comorbid diseases and lifestyle factors [3,4,5]. The exact mechanism of this relationship is unclear, but may be due to the increase in cognitive load and social isolation that accompanies sensory deprivation [6]. Correction of underlying visual impairment may therefore slow cognitive decline and maintain dementia patients' ability to carry out activities of daily living (ADLs) [7].

Visual impairment will have an impact on the diagnosis of dementia itself. The symptoms of declining cognition and vision loss can be difficult to distinguish, for example, not recognising familiar people, difficulty finding objects, disorientation and misperceptions of the environment. Furthermore, tests for cognitive impairment such as the MoCA, MMSE, RUDAS, Addenbrooke's, and ACEiii all have visuospatial elements such as the clock drawing test or naming pictures. Inappropriate use of these diagnostic tests on patients who have not had their vision adequately corrected may contribute to over-diagnosis of dementia or incorrect assessment of its severity [8]. Adapted tests for those with sight loss have been developed, such as the MoCA-BLIND, but visual impairment would have to be correctly identified for this to be chosen. The medical team should therefore ensure to always enquire about visual status – and ensure this is optimally corrected – before commencing dementia assessments in a clinical setting.

Untreated visual impairment will also aggravate the symptoms of dementia, as patients will not be able to rely on visual cues such as signs on the street or faces to orientate themselves, and has been shown to increase the rate of functional and possibly cognitive decline [7]. Difficulty navigating one's own surroundings are likely to exacerbate confusion and reduce quality of life by increasing isolation, loneliness and dependence on others [9]. When dementia and poor vision co-exist, ability to carry out everyday ADLs such as personal care and household tasks is significantly reduced compared to single comorbidity [10]. Untreated sight problems also increase psychological morbidity in the form of visual hallucinations, depression, anxiety and disruptive behaviour [11,12].

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Many of the conditions contributing to poor vision in dementia patients are treatable, such as cataracts or refractive error, but go unnoticed [2]. This suggests that access to services is a major barrier, possibly due to under-reporting of issues by the patient, lack of awareness among carers of eye screening guidelines, or failure of medical staff to recognise the visual impairment or attribute symptoms instead to the cognitive decline.

The NHS advises everyone to have a sight test every two years, and in England tests will be free for those over 60 years old. The Royal National Institute of Blind People (RNIB) goes one step further, recommending an annual eye test for those above 60 years, but found that half of this age group and are not following this guideline [13]. Under NHS provision, if a patient with dementia cannot get to the opticians, they are also eligible to receive a free eye examination at home; however, a nationwide study found that awareness of this domiciliary sight test availability was extremely low among participants with dementia and their carers [2]. Doctors in hospital and community settings should therefore take every opportunity to ask patients and their carers about their most recent sight test, and increase awareness of NHS provisions.

Understanding the role that sight loss has in cognitive impairment is important in helping us determine how to improve quality of life and maximise independence for patients. However, the potential benefits of correcting vision should be weighed on an individual basis against the risks of

causing distress from prescribing glasses or surgery that the patient may not want. Of course, correction does not necessarily mandate invasive and uncomfortable interventions. Benefit can still be gained through alternative methods such as increasing the font size of reading materials or improving the colour contrast in day-to-day surroundings. It remains vitally important that people living with dementia and their carers are aware of the provisions available to them. Possibly the NHS recommendation for eye tests should be reduced to those above 60 years in line with the RNIB, or even 55 years. Although doctors can increase awareness among patients on an individual level, promotion is needed nationally and should be widespread across geriatric wards and ophthalmology clinics that see higher numbers of older patients. Further formal research into the barriers to receiving eye care that people with dementia face will help us to identify which interventions will be of most benefit.

Literature search results

A total of 6418 articles were identified by the primary search terms. The abstracts of 258 papers were read and 112 met the criteria for full review. Thirteen original studies were chosen for full discussion in this article as they provided an overview of the published research without duplicating the discussion of results.

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TAKE HOME MEASSAGE

- Rates of visual impairment are higher in people with dementia.
- Many tests for cognitive impairment have visual elements so it is essential to correct vision before diagnosing someone with dementia.
- Visual impairment exacerbates the confusion, loneliness and psychological burden that accompanies dementia.
- Annual tests are free on the NHS for those above 60 years, and domiciliary sight tests are available.
- Doctors in hospitals and community settings should enquire about visual status and most recent sight test every time they encounter a patient with confirmed or suspected cognitive impairment.

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