Role of a medical review

Q8: For people with dementia, what is the role of a medical review (including comorbid physical and mental conditions and medication use)?

Background

Worldwide, there are estimated to be 25 million people with dementia, the majority of them in developed countries have Alzheimer's disease. However, Alzheimer's disease accounts for 60% whereas vascular dementia accounts for approximately 30% of the prevalence in low and middle income countries (LAMIC). There are many underlying causes. Alzheimer's disease, vascular dementia, dementia with Lewy bodies and frontotemporal dementia are the commonest. Mixed pathologies may be the norm. Some rare causes (subdural haematoma, normal pressure hydrocephalus, hypercalcaemia, and deficiencies of thyroid hormone, vitamin B12 and folic acid) may be treated effectively.

Patients with dementia frequently suffer from a range of comorbid medical conditions. These conditions may contribute to the progression of their cognitive and functional decline. An important and frequent issue for people with dementia who present to clinical services remains the management of behavioural and psychological symptoms of dementia (BPSD). Over a 5-year period, more than 90% of people with dementia develop at least one BPSD, with around 85% of cases having serious clinical implications (Ballard et al, 2009). For carers and for people with dementia, BPSD impact most on quality of life. Problem behaviours include agitation, aggression, calling out, sleep disturbance, wandering and apathy. Common psychological symptoms include anxiety, depression, delusions and hallucinations. Most studies indicate that BPSD are an important cause of carer strain, and a common reason for institutionalisation as the family's coping reserves become exhausted.

Behaviour disturbance is often said to be caused by pain, constipation and urinary tract infection (UTI) and physical assessment can aid in the consideration of specific treatments for behavioural disturbance in dementia. Pain is common in severe dementia, and is often poorly controlled. Hearing and visual impairment impede communication and exacerbate disorientation, and deafness predicts more rapid cognitive decline. Among people with dementia, visual impairment is associated with visual hallucinations and delusions, and deafness with delusions. Each of these impairments tends to be overrepresented among people with dementia and cognitive impairment. There are surprisingly few trials of the effects of physical assessments and interventions on the course of dementia.

Population/Intervention(s)/Comparison/Outcome(s) (PICO)

Population: people with dementia

Interventions: physical assessment

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Comparison: placebo/a comparator

Outcomes: cognitive functioning

functional status

behavioural and psychological symptoms of dementia

quality of life

List of the systematic review identified through the search process

Prince et al (2009). Packages of care for dementia in low- and middle- income countries. *PLoS Medicine,* 6:e1000176. Epub 2009 Nov 3.

Description of the studies that went into analysis

Role of overall medical assessment

Ballard et al, 2009 review addressed the issue of agitation and aggression which are distressing behavioural and psychological symptoms of dementia (BPSD). These symptoms are disturbing for individuals with Alzheimer's disease, commonly confer risk to the patient and others, and present a major management challenge for clinicians. The article outlines general principles for assessment and treatment of BPSD, with the aim of highlighting the means by which premature or unnecessary administration of treatments for agitation and aggression can be avoided.

Leonard et al, 2006 completed a cross-sectional study, which compared nursing home residents 60 years and older with dementia who were reported to have been physically aggressive in the week before their assessment to control subjects who were all other residents 60 years and older with dementia. Physical aggression was associated with depressive symptoms (adjusted odds ratio [AOR], 3.3; 99% confidence interval [CI], 3.0-3.6), delusions (AOR, 2.0; 99% CI, 1.7-2.4), hallucinations (AOR, 1.4; 99% CI, 1.1-1.8), and constipation (AOR, 1.3; 99% CI, 1.2-1.5). Thus treatment of depression, delusions, hallucinations, and constipation may reduce physical aggression among nursing home residents.

Ballard et al, 1995 assessed psychotic symptoms in 124 patients with dementia. Of them, 83 (66.9%) patients had psychotic symptoms. Deafness and life events were associated with delusions, and visual impairment was associated with visual hallucinations, while senile dementia of Lewy body type and older age were

associated with both. Differences are evident in the associations of delusions and visual hallucinations. Sensory impairments were associated with both symptoms.

Natalwala et al, 2008 studied the evidence to explain why patients with dementia are admitted to a general hospital. Anonymised data from the Hospital Activity Analysis Register was used to trace these patients; 505 were diagnosed with Alzheimer's disease (AD), 283 with vascular dementia (VD) and 1,773 patients were classified as unspecified dementia (UnD). Primary diagnoses such as syncope and collapse, bronchopneumonia, urinary tract infection and dehydration were more frequent in all dementia patients than controls. Dementia patients are frequently admitted as emergency cases, but dementia itself is often not the primary diagnosis. Earlier detection of the specific conditions mentioned above may reduce emergency hospital admissions amongst dementia patients.

Rait et al, 2005 completed a cross-sectional survey where a total of 15,051 subjects completed the assessment. The prevalence of cognitive impairment was 18.3% (95% confidence intervals (CI) = 16.0–20.9) at a cut-off of 23/24, and 3.3% (95% CI = 2.8–4.0) at 17/18. Those with impairment (MMSE 23/24) were significantly more likely to have hearing (odds ratio (OR) 1.7), vision (OR 1.7) and urinary incontinence problems (OR 1.3), have two or more falls in the previous 6 months (OR 1.4), and report poorer health (OR 1.9). Almost half the participants lived alone (n = 7,073; 47.0%) and of these almost one-fifth were impaired (MMSE 23/24; 19.4%).

Lyketsos et al, 2006): Before any specific treatments are considered for patients with AD who present with agitation and aggression, or other BPSD, a broad and detailed clinical assessment is essential. Physical health problems such as infection, pain or dehydration are common in patients with AD and can often precipitate agitation and aggression. Pain can be difficult to assess in people with dementia and is often under-diagnosed. Urinary tract infections and chest infections are frequent triggers for agitation and aggression, but dental infections are also common and are often not recognized. Treatment of concurrent physical health problems will frequently result in the resolution of agitation and aggression, and other BPSD, without recourse to any therapies aimed specifically at targeting the BPSD. Visual and auditory impairment can also precipitate BPSD, which should be assessed for, and treated if possible. Treatment may be as simple as changing the patient's spectacles or hearing aid, or encouraging regular use of such equipment. The degree of environmental stimulation can also be an important trigger for certain BPSD syndromes, including agitation. For example, low lighting and extreme noise levels (high or very low) can be important precipitants of agitation and are often modifiable.

Visual assessment

Chapman et al, 1999 studied 50 patients (20 with visual hallucinations, 30 without) with probable Alzheimer's disease. Impaired visual acuity and the severity of cognitive impairments were significantly associated with visual hallucinations. No patients with normal acuity (6/5 or 6/6 on the Snellen chart) experienced these symptoms. Glasses and cataract surgery need evaluation as prophylactic or adjunctive treatments for visual hallucinations in patients with probable

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Alzheimer's disease.

Hearing assessment

Allen et al, 2003 assessed the effects of increasing auditory acuity by providing hearing aids to subjects with dementia who have mild hearing loss. More than 10% of eligible subjects were excluded as removal of wax restored hearing. Forty-two percent of subjects showed an improvement on an independently rated measure of change. The hearing aids were well accepted. Both carers and subjects reported overall reduction in disability from hearing impairment.

Peters et al, 1988 evaluated 38 patients with dementia of various aetiologies to determine the change in cognition over time in subjects with and without hearing impairment. Decline in cognitive functioning at follow-up was greater in hearing impaired subjects and this difference persisted after adjustment for the greater age of hearing impaired subjects (P less than 0.009). Further division of subject by diagnosis showed that only in the Alzheimer's group did hearing impairment predict more rapid cognitive decline at follow-up.

Uhlmann et al, 1986 assessed 156 outpatients with senile dementia of the Alzheimer's type (SDAT) for hearing impairment. Decline in cognitive function one year later, however, was nearly twice as great in the impaired hearing group, a statistically significant difference (P less than 0.05, by one-tailed t test) even when controlled for age and initial cognitive function. These results suggest that hearing impairment may be a prognostic indicator for subsequent cognitive dysfunction in SDAT.

Pain assessment

Fuchs-Lacelle et al, 2008 conducted an RCT among nursing home residents with dementia. Regular use of the Pain Assessment Checklist for Seniors with Limited Ability to Communicate (PACSLAC) improved pain management practices over time. As pain interventions increased, a corresponding decrease in observable pain behaviours was observed. In addition, nurses who used the PACSLAC reported decreased distress and burnout over time.

Husebo et al, 2008 completed a cross-sectional study with 181 long-term stay patients in a Norwegian nursing home. Patients with severe dementia did not experience less pain intensity (P = 0.079), numbers of pain diagnoses (P = 0.172), and pain locations (P = 0.202) compared to other stages of dementia. Severely demented patients receiving opioids demonstrated higher pain intensity (mean 4.4, SD 1.7) than non-demented patients (mean 2.9, SD1.8), and received less pain treatment (P =0 .018). Pain intensity did not differ between diagnostic groups of dementia (P = 0.439). Patients with severe dementia and mixed dementia are at high risk to suffer from severe pain.

Eriksson et al, 2009 completed a cross-sectional, population-based study, where 395 women were possible to be evaluated for urinary tract infection (UTI). About one-third (117/395, 29.6%) were diagnosed as having suffered from at least one UTI in the preceding year and 60% in the preceding 5 years. In the preceding year, UTI was associated with multi-infarct dementia (OR = 2.4; 95% CI = 1.3–4.5).

Nutritional status

Gil Gregorio et al, 2003 studied the nutritional status of 99 institutionalized patients with moderate AD. Twenty-five patients were included in an intervention group and received nutritional supplements along 12 months. After one year the intervention group showed higher levels of albumin (P=0.05), pre-albumin (P=0.05), iron (P=0.01), zinc (P=0.05), and beta-carotene (P=0.05) than the control group. Mortality was lower (16% vs. 22.7%), without any statistical significance, in the intervention group, as were the number of infectious events (47% vs. 66% P=0.05), and the days in bed (7.5 2.1 vs. 17.3 5.6 P=0.05). Nutritional supplements applied to a group of patients with AD living in nursing-homes can reduce morbidity and mortality after one year follow-up

Methodological limitations

There is a paucity of trials on the benefits of medical review in individuals with dementia

Narrative conclusion

The importance of routine physical reviews should be stressed. A physical assessment is recommended before considering specific treatments for behavioural disturbance in dementia, and should be a regular part of dementia care for all patients. Research is needed into the feasibility and effectiveness of interventions to improve hearing, vision, nutrition, bladder and bowel function and improvement in BPSD symptoms. A commitment to continuing care is essential, with regular review, coupled with updated physical health and needs assessments.

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Rait G et al (2005). Prevalence of cognitive impairment: results from the MRC trial of assessment and management of older people in the community. *Age and Ageing,* 34:242-8.

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From evidence to recommendations

Factor	Explanation
Narrative summary	Behaviour disturbance is said often to be caused by physical health problems and a physical

of the evidence base	assessment thus can aid in the consideration of specific treatments for behavioural disturbance in dementia: Pain is common in severe dementia, and poorly controlled. Systematic pain assessment by staff was associated with increasing use of analgesics, reduced pain and improvement in staff morale. • Hearing and visual impairment impede communication and exacerbate disorientation, and deafness predicts more rapid cognitive decline. Uncontrolled studies suggest that audiological assessment is feasible and hearing aids can be used effectively with some evidence of benefit, and that referral to an optician to improve visual acuity may reduce visual hallucination. • Nutrition is often impaired in dementia, because of apathy, aversive feeding behaviours, poor dental health and dysphagia. Although difficult to sustain, nutritional supplementation improved nutritional status among nursing home residents and nutritional education for carers had the same effect in community
Summary of the quality of evidence	There are few trials of the effects of physical assessments and interventions on the course of dementia. Very low quality evidence
Balance of benefits versus harms	For carers and for people with dementia, BPSD impact most on quality of life. BPSD symptoms can often be precipitated by physical health problems such as infection, pain or dehydration. A physical assessment thus can aid in the consideration of specific treatments for behavioural disturbance in dementia.
Values and preferences including any variability and human rights issues	A physical assessment may contribute to the accuracy of the diagnosis and management, thus reducing behaviour disturbances and stigma.

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Costs and resource use and any other relevant feasibility issues	Non-specialist health care providers can be trained to carry out a physical assessment and to look for associated physical health problems.

Final recommendation(s)

People with dementia should receive an initial and a regular medical review (at least very 6 months) and appropriate care.
Strength of recommendation: STRONG

In people with dementia presenting with behaviour symptoms, a complete physical assessment and medication review should be performed to identify any possible underlying precipitants for these symptoms. Appropriate management of these precipitants should be undertaken before considering use of psychotropic medicines and non-pharmacological interventions.
Strength of recommendation: STRONG

Update of the literature search – June 2012

In June 2012 the literature search for this scoping question was updated. The following systematic review was found to be relevant without changing the recommendation:

Vernooij-Dassen M, Draskovic I, McCleery J, Downs M. Cognitive reframing for carers of people with dementia. Cochrane Database of Systematic Reviews 2011, Issue 11. Art. No.: CD005318. DOI: 10.1002/14651858.CD005318.pub2. (New, published in Issue 11, 2011.)