Diabetes and dementia

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As the population ages, attention has focused on the rise in the number of people suffering from dementia. Even the Prime Minister has taken on the Dementia Challenge and promised to double the money spent on research into dementia over the next 10 years. Dementia is a feared condition and can have an overwhelming impact on the affected person as well as on family and carers. In contrast, the diagnosis of type 2 diabetes may be accepted with relative equanimity, causing more concern about change of lifestyle than alarm at the associated health risks. UK prevalences of dementia and diabetes are 800 000 and 3 million respectively, but the dominance of diabetes in older people means the risk of developing both conditions is significant. Interestingly, while the number of people with diabetes increases inexorably, there is good evidence that the frequency of dementia is plateauing, so that ‘later-born populations have a lower risk of prevalent dementia than those born earlier in the past century.12

A leader in Practical Diabetes in April 20133 highlighted the shared pathogenesis between type 2 diabetes and dementia, raising the possibility that an insulin-sensitising agent might be useful in treating the insulin-resistant brain state seen in Alzheimer’s disease. In this article we discuss the interaction between diabetes and dementia and the role of education in helping people to care for these twin disorders.

Links between diabetes and dementia

In an aging population, it is not surprising that diabetes and dementia often co-exist. In an audit of 11 nursing homes in Coventry, 16% of residents were known to have diabetes and of those 56% had some form of dementia.4 A prospective study in primary care showed that diabetes increases not only the risks of dementia but also the risk of progression from mild cognitive impairment to dementia.5

A systematic review6 showed that dementia was twice as common in people with diabetes but there is also the question of undiagnosed diabetes in care homes. A study of British care homes found that 8.2% of residents had undiagnosed dementia; in those with dementia, the prevalence rose to 13%.7 Since most residents have annual routine blood tests, it should be simple to include an HbA1c to screen for diabetes.

Hypoglycaemia

The link between hypoglycaemia and dementia has been much debated and there appears to be a positive association. Yaffe et al. investigated a group of older adults (mean age 74 years) and found the risk of dementia was doubled in those who had suffered from hypoglycaemia compared with those with no such history.8 To add an extra twist, those with dementia had a threefold increased risk of hypoglycaemia compared with those without and this may reflect the difficulties of achieving glycaemic control in patients with diabetes and dementia. We also know from a prospective study that people with lower scores in a specific test of cognitive function (Digit Symbol Substitution Test) had a significantly higher risk of experiencing a severe hypoglycaemic attack over the next 3.5 years.9

Unrecognised hypoglycaemia can occur at all ages but is particularly harmful in the elderly, in whom hypoglycaemic symptoms and signs may be different. Adrenergic signs are reduced and neuroglycopenia can manifest as disturbed co-ordination and speech, confusion or cognitive impairment10 and can have irreversible effects. Sulphonylureas are a particular risk as patients are less likely to have blood glucose monitoring.

Munshi et al. studied 40 people, age 69 years or over, with ‘poor’ blood glucose control treated with insulin or sulphonylureas.11 All 40 subjects had continuous (blinded) glucose monitoring (CGM) for three days. Although their mean HbA1c was 77mmol/mol (9.2%) and all had routine pre-meal and pre-bed glucose testing four times daily, CGM demonstrated that 26 of the 40 subjects had more than one hypo. Only 7% of all hypoglycaemic episodes were recognised by symptoms or by routine blood tests. Twelve subjects had a blood glucose <2.8mmol/L and 19 <3.3mmol/L (sufficient to cause neuroglycopenia). The average number of hypos during three days’ CGM was four; the majority were not identified and 18 patients had unrecognised nocturnal hypoglycaemia.

Active self-management to passive non-management

For people with type 2 diabetes and early cognitive impairment, it is common to forget to take medication and just as common and even more dangerous to double- or treble-dose. People with long-standing type 1 diabetes, who have been trained in carbohydrate counting and insulin dose adjustment, apply a wealth of accumulated experience to their daily blood glucose management. As life expectancy with this condition rises, such people are at increasing risk of cognitive impairment. Initially they may struggle to maintain independence and self-management but, just as with driving, the loss of competence is insidious and there will come a time when others feel that it is unsafe for them to retain responsibility for their diabetes management. This can lead to frustration and resentment but, most importantly, it is most unlikely that the best trained carer will be able to replace the personalised expertise which the patient previously applied to their own diabetes care. This leads to wider variations in the blood glucose and a need to simplify the insulin regimen, both of which can be distressing for the person with diabetes.
How well do we care for people with diabetes and dementia? The Institute of Diabetes for Older People (IDOP) has worked hard to raise awareness of the importance of these two conditions, producing guidelines on the care of diabetes in care homes and sponsoring projects in these twin fields.

IDOP commissioned a series of focus groups, led by a psychologist and a diabetologist, to explore the views and experiences of health care professionals working with elderly people with diabetes in community, residential and nursing home settings. Health care professionals of all grades were invited to a half-day training session in diabetes and dementia; the dementia training focused on the Kitwood model of care. The educational component was preceded by a focus group lasting one hour, which was designed to identify the problems encountered by staff in these various health care settings. Ten to twelve participants signed up for each of the six sessions. Most senior nurses/managers attended their sessions but only 56% of health care assistants from all three work settings managed to attend. The reason given for their absence was the need to cover for staff shortages.

The message from the focus groups was that other health care systems treated care home staff at all levels as ‘second class workers’, making them feel undervalued. Communication between hospital and primary care staff and those working in the care and mental health sectors was poor, with patients routinely transferred with no accompanying information. There was a thirst for training, and diabetes and dementia were singled out as key topics for combined education. Many contributors highlighted the shortage of staff as a barrier to effective education and there was little enthusiasm for the e-learning packages available at the time.

What can we do to raise standards of care? In response to the focus groups a two-day course in diabetes and dementia was developed for managers and senior nurses in nursing homes. Although there was some didactic information, discussion was encouraged and participants were asked to bring cases of people with diabetes and dementia. These provoked lively discussion and were a valuable teaching aid. Two months later an audit found that positive changes had taken place in every participating home. In most cases, the homes had adopted the care plan recommended in ‘Good clinical practice guidelines for care home residents with diabetes’ produced by IDOP and Diabetes UK. There were notable improvements in the individual cases discussed on the course and one person had regained their interest in life by the simple measure of reducing the dose of metformin.

The future Staff caring for people with diabetes and dementia in all care settings are aware that lack of knowledge is impeding their ability to provide good care. There is a real wish to address this but cost/funding issues limit access to education. Effective, ongoing and comprehensive education is the only way that diabetes care for people with dementia will improve. There are many schemes being developed in different parts of the country; for example, a ‘Skills for Care’ course developed by a consultant nurse in Somerset. This focuses mainly on diabetes but includes related topics such as dementia and mental health. We now need to develop a national strategy to address the issue and IDOP has taken a lead by working in partnership with TREND (Training, Research and Education for Nurses in Diabetes) to produce a guideline ‘Diabetes and Dementia – guidance on practical management’. The same collaboration has designed a leaflet ‘Living with Diabetes and Dementia’ intended for people diagnosed with both conditions and for their carers. Although e-learning was not popular with the focus groups, this is likely to be an important medium for providing education in the NHS of the future, and an e-learning course is in development.

Given the shortage of funding in most care settings, it is crucial that staff training becomes mandatory to ensure that people with diabetes and dementia get the care they deserve.

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