

# Managing older people with diabetes: some key management issues



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Over 18% of people aged 60–75 years have diabetes, which represents 35% of diabetes prevalence in adults (International Diabetes Federation [IDF], 2013). Diabetes is a leading cause of death in older people. Although there are differences in life expectancy among countries, most countries have an ageing population. Increasing age is a risk factor for diabetes, but the presentation is often atypical and the diagnosis can be missed or attributed to causes other than diabetes, including “old age”.

Diabetes differs metabolically between older and younger people. Fasting plasma glucose (FPG) is not usually increased in older people with type 2 diabetes (T2D; Amer et al, 1991; Meneilly and Elliott, 1999). Thus, FPG might not be the optimal diagnostic test in older people. Insulin action is relatively normal in lean older people with T2D, but insulin secretion can be impaired; overweight older people have significant insulin resistance and relatively normal insulin secretion (Meneilly, 2011). Consequently, management strategies need to target the underlying metabolic disturbance. Lean older people are likely to need insulin at, or soon after diagnosis; overweight older people might benefit initially from insulin-sensitising medicines, such as metformin.

The renal threshold increases with age and, consequently, glycosuria might not occur until the blood glucose is very high. Older people often do not recognise thirst and might not drink enough fluid to compensate for fluid loss. Thus, it is important that health professionals undertake relevant risk screening in older people, for example, during annual health checks, hospital admissions, or when the individual presents with an infection, slow healing wounds, a diabetes complication or hyperosmolar hyperglycaemic states (HHS).

## Comorbidities

The risk of complications increases with persistent

hyperglycaemia and longer duration of diabetes (Meneilly, 2011). Complications contribute to physical, cognitive, sensory and functional decline, which compromise independence, memory, self-care capacity and quality of life (Kirkman et al, 2012). There is an association between vascular dementia and Alzheimer’s disease and diabetes (Tolppanen et al, 2013), and severe hypoglycaemia in T2D is associated with dementia risk (Whitmer, 2009; Yaffe et al, 2013). In addition, older people with diabetes have high rates of depression (Cahoon 2012), which often coexists with dementia.

Older people commonly present with geriatric syndromes and delirium. Symptoms include confusion, difficulty focusing, hallucinations, disorientation and “personality change”, for example, agitation and irritability. Diabetes-related predisposing factors to delirium include cardiovascular and renal disease, infections, hypoglycaemia, and electrolyte changes associated with some medicines, hyperglycaemia and HHS.

## Key care principles

Optimal care must be holistic, person-centred and suit the individual’s social situation and support systems. Where possible, management options should be decided in partnership with the individual and/or their carers. Maintaining safety, independence, functional status and quality of life by reducing the symptom and medicine burden is important. Consequently, pharmacovigilance is vital (Sinclair et al, 2012; Dunning et al, 2013). A comprehensive care plan should encompass:

- A proactive risk assessment process to identify conditions, such as nutritional deficiencies and increasing frailty. Identification of hypoglycaemia and hyperglycaemia is important to reduce risk of pain, falls, geriatric syndromes, delirium and depression, which can compromise functional status.
- Assessing risk/benefit, functional status and life

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expectancy when deciding management strategies initially and when changing management.

- Appropriate management goals and targets suited to the individual’s health and functional status.
- Regular reassessment of the individual and their care plan; for example during annual health and diabetes complication assessments. This is particularly important when their health status or treatment regimen changes.
- Plans to stop driving may be necessary and end of life plans.
- Assessment, and reduction of, cardiovascular risk as early and effectively as possible with a healthy diet and exercise, lipid-lowering agents, aspirin and antihypertensive agents.
- Managing hyperglycaemia to manage symptoms, promote comfort, reduce the risk of cardiovascular and microvascular disease, prevent dehydration and consequent risk of ketoacidosis, HHS, falls, pain, delirium and depression.
- An appropriate sick day care plan that suits the individual and is revised when the person’s self-care capacity declines.
- General health screening.
- Support for family carers and involving them in care decisions where possible.

### Pharmacovigilance

Many commonly prescribed medicines should be avoided or used with caution in older people, for example, sliding insulin scales (American Geriatrics Society, 2012). Regular blood glucose testing can guide decisions about the medicine regimen.

Pharmacovigilance includes:

- Selecting medicines based on a comprehensive assessment that includes renal and liver function, allergies, nutritional status and medicine contraindications and cautions.
- Using the lowest effective dose in the simplest dose regimen to avoid polypharmacy and selecting a dose suited to the individual.
- Avoiding or discontinuing medicines that are contraindicated, or should be used with caution in older people. The use of screening tools is useful, for example, Beers Criteria (American Geriatrics Society, 2012); Screening tool of older persons’ potentially inappropriate prescriptions (STOPP; Gallagher and O’Mahony, 2008) and Screening tool to alert doctors to right but often omitted treatments (START; Barry et al, 2007).
- Using non-medicine options where possible.

- Regular comprehensive medicine reviews.
- Effective communication processes and current medicine lists, especially when there are multiple prescribers.
- Implementing medical alerts to enhance safety when the individual is transferred among different care services.

### Summary

Managing older people with diabetes is complex. Hyperglycaemia and hypoglycaemia symptoms are often atypical and under-recognised. Physical, sensory and cognitive changes are common and can affect self-care ability and compromise safety. Delirium and geriatric syndromes must be considered, and pharmacovigilance is essential. Care must be individualised, holistic and communicated in a way that is understandable. Proactive planning, such as stopping driving, planning end-of-life care and moving into supported care facilities, can help mitigate the stress associated with these events. ■

- Amer P, Pollare T, Lithell H (1991) Different aetiologies of type 2 (non-insulin dependent) diabetes mellitus in obese and non-obese subjects. *Diabetologia* **34**: 483–7
- American Geriatrics Society (2012) American Geriatrics Society updated Beers Criteria for potentially inappropriate medication use in older adults. *J Am Geriatr Soc* **60**:616–31
- Barry PJ, Gallagher P, Ryan C (2007) START (Screening tool to alert doctors to the right treatment): An evidence-based screening tool to detect prescribing omissions in elderly patients. *Age Ageing* **36**: 632–8
- Cahoon C (2012) Depression in older adults. *Am J Nurs* **112**: 22–30
- Dunning T, Savage S, Duggan N (2013) McKellar guidelines for managing diabetes in residential aged care facilities final report. Centre for Nursing and Allied Health Research, Melbourne, Australia.
- Gallagher P, O’Mahony D (2008) STOPP (Screening Tool of Older Persons’ potentially inappropriate Prescriptions): Application to acutely ill elderly patients and comparison with Beers’ criteria. *Age Ageing* **37**: 673–9
- International Diabetes Federation (2013) *IDF Diabetes Atlas* (5th edition). IDF, Belgium. Available at: <http://www.idf.org/diabetesatlas> (accessed 12.11.13)
- Kirkman S, Briscoe V, Clark N et al (2012) Diabetes in older adults: Consensus report. *J Am Geriatr Soc* **60**: 2342–56
- Meneilly G, Elliott T (1999) Metabolic alterations in middle aged and elderly obese patients with type 2 diabetes. *Diabetes Care* **22**: 112–8
- Meneilly G (2011) Diabetes in the elderly. *Can J Diabetes* **35**: 13–6
- Sinclair A (2012) Diabetes mellitus in older people. *J Am Med Dir Assoc* **13**: 487–502
- Tolppanen A, Lavikainen P, Solomon A et al (2013) History of medically treated diabetes and risk of Alzheimer disease in a nationwide case-control study. *Diabetes Care* **36**: 2015–9
- Whitmer R (2009) Hypoglycemic episodes and risk of dementia in older patients with type 2 diabetes. *JAMA* **301**: 1565–72
- Yaffe K, Hamilton N, Harris T et al (2013) Association between hypoglycaemia and dementia in a biracial cohort of older adults with diabetes mellitus. *JAMA Intern Med* **22**: 1300–6