

Diabetes and end-of-life care

Recommendations

Recommendation	Reference	Grade*
In people taking glucose-lowering medications and who are at risk of hypoglycaemia, a blood glucose range of 6–15 mmol/L is appropriate in most cases for palliative care	1 Diabetes UK, 2018	Consensus
Determine a blood glucose and glycated haemoglobin (HbA1c) range that is safe for the individual and that avoids hypoglycaemia and hyperglycaemia	RACGP Diabetes Handbook working groups, 2020	Consensus
*Refer to 'Explanation and source of recommendations' for explanations of the levels and grades of evidence.		

Clinical context

End-of-life care for people with type 2 diabetes should not be viewed as a failure of care, but as a complement to usual diabetes care.² The general aims are to:

- consider ethical and legal aspects of care
- improve and maintain dignity and quality of life
- help the person achieve life goals
- manage pain and distressing symptoms
- talk honestly about prognosis and the person's concerns, values and goals
- achieve a dignified death in a place of the person's choosing
- support family and carers.

Clinically, this will usually involve modifying the person's usual care so that an appropriate level of intervention is provided, according to stage of diabetes, prognosis, symptoms, personal values and dignity. This can be challenging, and requires general practitioners (GPs) to manage:¹

- changes to glycaemic targets
- individual and carer expectation
- risk of hyperglycaemia and hypoglycaemia
- effects of other medications such as corticosteroids
- tailoring of glucose-lowering medications.

In practice

Ideally, discuss dying with patients and their families prior to the need for end-of-life care so that the important considerations can be addressed in advance care planning.² Liaison with a palliative care team and community diabetes team is recommended as part of a multidisciplinary approach to end-of-life diabetes care.³

Managing glycaemia

Although there is little evidence about optimal blood glucose range, it is generally agreed that a range of 6–15 mmol/L is appropriate for most palliative care patients to optimise patient wellbeing and cognitive function.^{4,5}

Multiple factors can affect glycaemic control in terminally ill people (Box 1). Glucose-lowering therapy should be tailored to minimise the risks of hypoglycaemia and hyperglycaemic states and symptoms.

Hyperglycaemia can worsen pain, confusion, thirst, cognition, confusion and incontinence. Blood glucose levels >15 mmol/L may cause polyuria and increase risks of infection. Diabetic ketoacidosis can mimic terminal illness. If not recognised and treated, it can severely impair quality and even duration of life.

Hypoglycaemia can also cause discomfort, confusion and impaired cognitive function.

Box 1. Factors affecting glycaemic control in people with type 2 diabetes at end of life

- Stress response to severe or sustained illness
- Poor appetite/smaller meals
- Poor nutrition
- Organ failure
- Cachexia
- Malignancy
- Dehydration
- Chemotherapy
- Difficulty taking medications (eg use of steroids, difficulty swallowing, nausea, stress)
- Frequent infections
- Weight loss

Diabetes medications at end of life

Insulin alone is a simpler option for patients and their carers than combinations of tablets and insulin. Consider switching patients from combinations to insulin alone, once or twice daily. Patients on insulin with poor intake will need lower doses.

The key considerations for decision making regarding glucose-lowering medication are risk minimisation and quality of life. The following classes of medications should be avoided in certain cases:¹

- long-acting sulfonylurea preparations (eg glibenclamide, glimepiride), if small meals are being taken
- sodium glucose co-transporter 2 (SGLT2) inhibitors, if dietary intake is reduced; reduced intake can increase ketone production and may increase the risk of ketoacidosis, which can be euglycaemic
- glucagon-like peptide-1 receptor agonists (GLP-1 RAs), if patients have reduced or poor appetites.

Renal function may also decline, and several non-insulin glucose-lowering medications should be discontinued in response to this.

The Diabetes UK guideline *End of life diabetes care: Clinical care recommendations* provides recommendations for tailoring medication at different stages of end-of-life care. An algorithm for managing diabetes in the last days of life is also provided.

Consider referral to specialist care for assistance with complex treatment such as managing frequent hypoglycaemia, use of insulin or managing the effects of steroids on glycaemia.

Resources

For health professionals

Deakin University has produced comprehensive information about end-of-life care for people with diabetes, including advance care planning, in the [Guidelines for managing people with diabetes at the end of life care: Final report](#).

For carers

Palliative Care Australia has produced [information for family members and carers](#) on diabetes and palliative care.

Refer also to the section '[Management of type 2 diabetes in older people and residential aged care facilities](#)'.

References

1. Diabetes UK. End of life diabetes care: Clinical care recommendations. London: Diabetes UK, 2018.
2. Dunning T, Martin P, Savage S, Duggan N. Guidelines for managing people with diabetes at the end of life. Waurm Ponds, Vic: Deakin University, 2010.
3. Deakin University and Barwon Health, Diabetes Australia, Palliative Care Australia. Caring for people with diabetes at the end of life: A position statement. Geelong: Centre for Nursing and Allied Health Research, 2014.
4. Cox DJ, Kovatchev BP, Gonder-Frederick LA, et al. Relationships between hyperglycemia and cognitive performance among adults with type 1 and type 2 diabetes. *Diabetes Care* 2005;28(1):71–77.
5. Sommerfield AJ, Deary IJ, Frier BM. Acute hyperglycemia alters mood state and impairs cognitive performance in people with type 2 diabetes. *Diabetes Care* 2004;27(10):2335–40.

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