

Managing patients with type 2 diabetes: from lifestyle to insulin

Key practice points

- Metformin is the first-line pharmacological treatment for patients with type 2 diabetes and initiation should be strongly considered at diagnosis
- In general, treatment intensification is appropriate for patients whose HbA_{1c} levels do not meet, or closely approach, an agreed target within three months
- Isophane is the first-line insulin and should be considered for any patients with HbA_{1c} levels persistently above agreed targets (especially HbA_{1c} > 65 mmol/mol)
- Well-controlled blood pressure is associated with substantial reductions in cardiovascular risk in patients with type 2 diabetes, and should be a focus of care

Lifestyle, education and intensifying treatment

A healthy lifestyle is the foundation of treatment for all people with type 2 diabetes. If agreed lifestyle goals are not achieved, discussions should be initiated to help overcome barriers to change, regardless of diabetes duration or type of medicine being taken.

Education is a cornerstone of care

Structured diabetes education is recognised in New Zealand as a critical aspect of treatment.¹ The goal is to enable patients to take an active role in their own care.¹ An HbA_{1c} target of 50 – 55 mmol/mol can be explained as the “speed-limit” for patients, i.e. measurements above this level are increasingly unsafe.² However, glycaemic targets need to take into account diabetes duration, the presence of co-morbidities, life expectancy, social circumstances and the personal beliefs and priorities of the patient.³

Intensifying diabetes treatment with oral medicines

Regular review is essential for improving glycaemic control in all patients with diabetes. Treatment adherence should be assessed in patients who are unable to meet glycaemic targets. In general, intensification is appropriate if the patient’s HbA_{1c} levels do not meet, or closely approach, an agreed target within three months.^{2,3}

Metformin is the first-line pharmacological treatment for patients with type 2 diabetes because it is safe, effective, does not cause weight gain and provides patients with additional cardiovascular benefits.² There is a low threshold

for initiation and metformin should be started at diagnosis, or soon after, for all patients with type 2 diabetes, unless there are contraindications.³ New Zealand guidelines recommend trialling lifestyle modification for three months in asymptomatic patients before beginning treatment with metformin.² In practice, however, treatment with metformin may often be initiated at diagnosis for these patients.

A sulfonylurea can be added to metformin for patients who have not reached an agreed HbA_{1c} target with metformin alone.² Caution is required if a sulfonylurea is prescribed to an older patient or a patient with reduced renal function, due to the risk of hypoglycaemia.⁴ Weight-gain is a common adverse effect of treatment with sulfonylureas.⁴


Acarbose can be used as a first-line treatment for patients with type 2 diabetes where metformin or a sulfonylurea are contraindicated or not tolerated, or as an adjunctive treatment for patients taking metformin, a sulfonylurea or insulin.^{2, 5} Acarbose is not widely used, however, as it is only mildly effective and is associated with significant gastrointestinal adverse effects.³

Pioglitazone may be appropriate when treatment with metformin and a sulfonylurea is not tolerated or contraindicated, or if an alternative to insulin is required.² Pioglitazone may also be used in combination with metformin and a sulfonylurea, or as an adjunctive treatment with metformin in patients who require escalating doses of insulin.³ Pioglitazone use can cause significant weight gain and peripheral oedema, and the risk of heart failure is increased.³ There is also an increased risk of bone fracture, particularly in post-menopausal females taking pioglitazone.⁴ Pioglitazone is contraindicated in patients with a history of heart failure, un-investigated macroscopic haematuria or bladder cancer.⁴

Initiating insulin treatment

Insulin has a greater blood glucose lowering ability than any other hypoglycaemic medicine and it is eventually required by many people with type 2 diabetes.⁶ However, a reluctance to initiate insulin, by both patients and clinicians, often delays treatment.⁶ Initiation of insulin in primary care should be considered for any patients with HbA_{1c} levels persistently greater than their individualised target (especially if HbA_{1c} is > 65 mmol/mol) despite optimal oral treatment,² particularly if they have signs such as ketonuria and weight loss.⁶

Isophane is the first-line insulin taken either once daily at night or before breakfast, or twice daily.²

 The initial insulin dose is a starting point which should be titrated until the agreed glycaemic level is reached or hypoglycaemia limits further increases.

New Zealand guidelines recommend that treatment with a sulfonylurea be withdrawn in patients taking twice daily isophane.² However, in practice metformin and sulfonylureas are generally continued throughout treatment with basal insulin. When insulin treatment is intensified to include a short-acting insulin, e.g. with meals, sulfonylureas are withdrawn.

Managing risk factors with regular follow-up

People with type 2 diabetes are three times more likely to die of a cardiovascular event compared with the general population.⁷ While good glycaemic control improves microvascular outcomes, e.g. retinopathy, it does not appear to improve cardiovascular outcomes to the same extent.⁸ Therefore glycaemic control is part of a wider suite of interventions for patients with type 2 diabetes, including blood pressure control, lipid management and, if appropriate, smoking cessation and antiplatelet treatment.³

Pharmacological treatment is recommended for patients with type 2 diabetes with a blood pressure > 130/80 mmHg for three months, despite changes in lifestyle.² An ACE inhibitor is the preferred antihypertensive for patients with type 2 diabetes; or an angiotensin II receptor blocker (ARB) if an ACE inhibitor is not tolerated.² Systolic blood pressure < 120 mmHg in people with type 2 diabetes is associated with an increased risk of hypotension, syncope and cardiac dysrhythmias.⁹


Measure the albumin:creatinine ratio (ACR) at least annually for people with type 2 diabetes and more frequently for Māori, Pacific and South Asian peoples.² Microalbuminuria is the earliest sign of chronic kidney disease (CKD) in people with diabetes and requires prompt treatment.²

Consider initiating a statin for patients with a five-year cardiovascular risk of >10%.¹⁰ People with type 2 diabetes often have elevated serum triglycerides, decreased HDL cholesterol levels and normal to elevated LDL cholesterol levels.⁸

Encourage patients with type 2 diabetes to carefully inspect their feet as part of their daily routine or ask a family member to do so. The patient's feet should be clinically assessed at least once a year, or every three months if they are at high risk of foot complications.²

Patients with type 2 diabetes require retinal testing at least every two years.² Testing is performed more frequently if the patient has been diagnosed with retinopathy.²

Be vigilant for mental health problems in patients with type 2 diabetes. Depression is reportedly twice as common, compared with people in the general population.¹¹ Poor mental health makes it more likely that patients will not adhere to treatment or attend consultations, increasing their risk of diabetes-related complications and reducing quality of life.¹¹

 For further information, see: "Managing patients with type 2 diabetes: from lifestyle to insulin", *BPJ* 72 (Dec, 2015).

References

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