

Deprescribing diabetes medications

Aggressive treatment of type 2 diabetes may be harmful for frail older adults. Tight control increases the risk of hypoglycaemia. Hypoglycaemia in frail adults can lead to impaired cognitive and physical function, falls, fractures, seizures, emergency department visits, hospitalisation, mortality.

Frail older people are at increased risk of medication-related side effects and medicines should be stopped where possible. The best approach is to focus on medicines to maintain function and control symptoms.

Targets

The 2024 Australian guidelines for the management of type 2 diabetes recommends a target HbA1c of 7% (53 mmol/mol) or less for most people without significant hypoglycaemia, adding that the target should be individualised according to patient circumstances. However, strict control of HbA1c in frail older people is associated with hypoglycaemia and functional decline. Less stringent HbA1c goals (8.5% or 69 mmol/mol) may be appropriate for people with limited life expectancy (less than 5 years) or where the harms of treatment are greater than the benefits, such as frail older people. Low HbA1c levels are associated with poorer outcomes in older people.

A HbA1c less than 6% (42 mmol/mol) could indicate anaemia in frail older people.

A safe blood glucose target for frail older people is generally above 6 mmol/L. Hyperglycaemic symptoms can generally be avoided if fasting or pre-prandial blood glucose levels are maintained below 12 mmol/L. The ideal range for blood glucose levels in frail older people is 6-15 mmol/L. There is no evidence to suggest that asymptomatic hyperglycaemia is harmful in frail patients or in those with a limited lifespan.

The blood pressure threshold for treatment is higher in frail people – 150/90 mmHg.

Lifestyle interventions

Nutritional interventions can help reduce the risk of adverse diabetes events in older people, such as hypoglycaemia, undesired weight loss, frailty and falls. Sarcopenia (reduced muscle mass) and unintended weight loss should be monitored.

“Diabetic diets” do not improve glycaemic control in frail older people with diabetes and dietary restrictions are likely to lead to malnutrition. A shift towards adequate calorie and protein intake is recommended to prevent and treat frailty and sarcopenia in diabetes.

Physical interventions are recommended, tailored to a person’s physical status and capacity. Resistance and balance training are associated with fewer falls, improved functional ability and reduced risk of immobility.

Treatment

The 2024 Australian type 2 diabetes glycaemic management algorithm recommends metformin as the usual initial monotherapy.

Dual therapy with metformin and either a SGLT2 inhibitor (dapagliflozin, empagliflozin) or GLP-1 receptor analogue (GLP-1 RA) (dulaglutide, liraglutide, semaglutide, tirzepatide) if SGLT2 inhibitor is not tolerated or contraindicated, is recommended for people who also have cardiovascular disease, multiple cardiovascular risk factors and/or kidney disease. DPP-4 inhibitors (alogliptin, linagliptin, saxagliptin, vildagliptin) can be added to metformin if unable to be prescribed an SGLT2i or a GLP-1 RA due to either intolerance or contraindication.

Sulfonylureas (glibenclamide, gliclazide, glimepiride, glipizide) are no longer recommended as first choice to add to metformin as they may increase the risk of hypoglycaemia, and do not have the cardiorenal protective benefits of other diabetes medications such as SGLT2 inhibitors or GLP-1 RAs.

Thiazolidinediones (pioglitazone) should be rarely used and should be avoided in those with heart failure, osteoporosis, falls or fractures.

In people requiring tight glycaemic control, multiple therapies may be indicated.

Overtreatment

Overtreatment of diabetes is common in older adults and should be avoided. Deintensification (or simplification) of complex regimens is recommended to reduce the risk of hypoglycaemia in older adults.

Insulin and sulfonylureas substantially increase the risk of hypoglycaemia. If insulin must be used, long-acting insulin analogues are the best choice.

Long-acting sulfonylureas (glimepiride, glibenclamide and slow release gliclazide) have a higher risk of hypoglycaemia. They should be avoided in frail older people. Newer-generation sulfonylureas (glipizide) with a shorter duration of action are recommended.

GLP-1 receptor analogues may cause weight loss. Their use needs to be carefully considered in older people with malnutrition and sarcopenia, and avoided in those who are frail and underweight. Gastrointestinal side effects are more common in older people. Liraglutide is not recommended in people aged 75 years and older, and in end-stage renal disease.

Diuretics can precipitate falls in frail older people.

Deprescribing

Deprescribing in frail older people should consider the risks and benefits of diabetes medications and may identify one or more medications potentially causing more harm than benefit or providing no benefit. This may include those at risk of falls, hypoglycaemia, cognitive impairment or dementia.

Medications most likely to cause hypoglycaemia in frail older people should be prioritised for deprescribing. This includes short-acting insulins and long-acting sulfonylureas.

Diabetes medications can be reduced in dose every one to four weeks to the minimum dose available before discontinuation. Medication doses might be increased or medication restarted at any time if blood glucose levels persist above 12 to 15 mmol/L or if hyperglycaemia is symptomatic.

Effects of medication changes on blood glucose levels are typically seen within a few days of dose changes. HbA1c will take several months to change and stabilise after tapering or ceasing.

When diabetes medications are tapered or ceased, monitoring for hyperglycaemia is important in the first one or two weeks. Symptoms of hyperglycaemia include polyuria, polydipsia, dry mouth, blurred vision, or confusion.

If blood glucose measurements are consistently above 10mmol/L in the presence of symptoms, recommencing a diabetes medication should be considered. In asymptomatic, frail older adults, blood glucose levels as high as 14mmol/L may be acceptable.

If medications do need to be re-commenced, recommencement of non-renal cleared agents with the lowest risk of hypoglycaemia are preferred. Metformin, DPP-4 inhibitors, GLP-1 RA and SGLT2 inhibitors have a low risk of hypoglycaemia.

Summary

Frailty and diabetes commonly coexist. The prevalence of frailty is 3-5 fold among people with diabetes than without. Early detection of frailty provides an opportunity to review diabetes medications and consider deprescribing as well as other targeted interventions to reduce disability and functional decline.

References

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