Healthier Together

Improving health and care in Bristol, North Somerset and South Gloucestershire

Blood Glucose Management in Type 2 Diabetes

At new diagnosis – refer to Diabetes Structured Education alongside lifestyle change to support change in dietary and physical activity behaviours

First-line treatment - to achieve individualised HbA1c target – alongside comprehensive lifestyle change to support change in dietary and physical activity behaviours

Treat cholesterol and blood pressure to individualised targets as appropriate

Rescue therapy (NPH Insulin or gliclazide) for symptomatic hyperglycaemia at any stage. To be reviewed when blood glucose control achieved

ASSESS CARDIOVASCULAR STATUS AND RISK

NO CVD or Chronic Heart Failure (HF)	***Established CVD or Chronic Heart Failure (HF)**	**Metformin contraindicated or not tolerated**
Metformin[1st choice] ***[Metformin MR***[2nd choice] ***if GI disturbance]*** Titrate weekly to minimise side effects up to maximum tolerated dose.	**Metformin**[1st choice] ***[Metformin MR***[2nd choice] ***if GI disturbance]*** Titrate weekly to minimise side effects up to maximum tolerated dose. *Once metformin tolerability is confirmed and dose is at maximum tolerated* **Add SGLT2 inhibitor with proven cardiovascular benefit** to reduce cardiovascular risk.	**Review *Treatment options if further interventions are needed* section overleaf to guide treatment choice.**

***CVD** (Cardiovascular disease)	Coronary heart disease, acute coronary syndrome, previous myocardial infarction, stable angina, prior coronary or other revascularisation, cerebrovascular disease (ischaemic stroke and transient ischaemic attack) and peripheral arterial disease. (Atherosclerotic cardiovascular disease (**ASCVD**) - a nonfatal myocardial infarction, coronary heart disease death, or stroke

At each review, consider:

- *Individualised HbA1c target (measure HbA1c 3 monthly until HbA1c is stable on unchanging therapy, every 6 months once HbA1c & blood glucose lowering therapy are stable)*
- *Advice about diet, physical activity and weight loss*
- *Review adherence*
- *Stopping medicines that are not tolerated*
- *Stopping medicines that have had no impact on glycaemic control or weight, unless additional cardiovascular or renal protection from continued treatment.*
- *Sick Day rules*
- *Prescribing in renal and hepatic impairment*
- *Counsel women of childbearing age*
- Optimisation of treatment to manage blood pressure and lipids as per guidance if not to target.

IF AT ANY POINT a patient develops chronic HF or established CVD irrespective of HbA1c offer the addition of an SGLT2 inhibitor with proven cardiovascular benefit.

CONSIDER eGFR - SGLT2 inhibitors have limited or no glucose lowering effect at eGFR <45ml/min/1.73m^2. Therefore, their use in eGFR <45ml/min/1.73m^2 is for cardio-renal benefit only.

If eGFR ≥45ml/min/1.73m^2 SGLT2 inhibitors will support improvement in glucose control and adjustment of current medications should be considered, specifically Gliclazide (or other Sulfonylureas) if HbA1c is at target or within 10mmol of target reduce dose and adjust further as blood glucose levels dictate. DPP-4 inhibitors – swap for SGLT2 inhibitor

Treatment options if further interventions are needed to improve glycaemic control

	GLICLAZIDE (SU)	SGLT2 inhibitor	DPP-4 inhibitors – SITAGLIPTIN BNSSG 1st LINE CHOICE	PIOGLITAZONE	GLP-1 AGONIST
AVERAGE HBA1C REDUCTION	14 mmol/mol (fast acting)	5-10 mmol/mol in 6 months	8 mmol/mol in 3-6 months	10 mmol/mol in 3-6 months	7-15 mmol/mol in 6 months
WEIGHT	Gain (2-3kg)	Loss (1.5-2kg)	Neutral	Gain (1-2kg)	Loss (2-6kg)
ASCVD	Neutral	Benefit (Canagliflozin, Dapagliflozin & Empagliflozin)	Neutral	Potential benefit	Benefit (Dulaglutide, Liraglutide & injectable Semaglutide)
HF	Neutral	Benefit (Canagliflozin, Dapagliflozin & Empagliflozin)	Potential risk (Alogliptin & Saxagliptin)	Increased risk	Neutral
Chronic Kidney Disease (CKD)	Careful monitoring	Do not *initiate* for glucose control (eGFR <45 ml/min/1.73m^2)	Dose adjustment required	Dose unchanged	Dose unchanged. Caution when initiating or increasing dose as potential risk of nausea, vomiting, diarrhoea or dehydration.
FRAILTY	Not recommended – high risk of hypoglycaemia	Caution – risk of dehydration and increased urinary frequency	Safe choice	Caution – risk of heart failure exacerbation and osteoporosis	Safe choice – patient should meet starting criteria and awareness required of potential weight loss exacerbating frailty and sarcopenia
NOT SUITABLE FOR	Those for whom hypoglycaemia would be high risk	eGFR < 45 ml/min/1.73m^2, Age >85	Those more than 10mmol from target, combination with GLP-1 agonists, history pancreatitis	Existing or history of heart failure, bladder cancer or Frax risk >10%	Heart failure class IV, history of inflammatory bowel disease or gastroparesis, combination with DPP-4
AVERAGE 28 DAY COST	£0.91	£29.40 – £36.59	£26.60 - £33.26	£1.62 - £2.88 (dose dependent)	£73.25 - £76.52

Currently taking 3 oral drugs - *Stop medicines that have had no impact on glycaemic control or weight, unless additional cardio-renal protection from continued treatment.*

Patients with BMI 35kg/m^2 or higher [1]	**Patient with BMI lower than 35kg/m^2**
Consider switching one drug to **GLP-1 Agonist or Insulin or Tirzepatide**	Consider **Insulin *or*** where insulin has significant occupational implications or if weight loss would be beneficial consider switching one drug to **GLP-1 Agonist or Tirzepatide**

	INSULIN – Humulin I or Insulatard	GLP-1 AGONIST	TIRZEPATIDE
AVERAGE HBA1C REDUCTION	Variable depending on dose and regime. Role in rescue therapy. if symptomatic or high HbA1c.	7-15 mmol/mol in 6 months	Variable and based upon trial data. Reductions reported 20.4-28.3mmol/mol
WEIGHT	Gain	Loss (2-6kg)	Loss – variable and based upon trial data. Reductions reported 6.2 – 12.9 kg loss
ASCVD	Neutral	Benefit (Dulaglutide, Liraglutide & injectable Semaglutide)	Neutral
HF	Neutral	Neutral	Neutral
CKD	Insulin requirements may decrease in patients with renal impairment and therefore dose reduction may be necessary	Dose unchanged. Caution when initiating or increasing dose as potential risk of nausea, vomiting, diarrhoea or dehydration.	Dose unchanged. Caution in patients with severe renal impairment and end stage renal disease as limited experience. Initiation of treatment may result in loss of fluids/dehydration which may lead to a decrease in kidney function in some cases
FRAILTY	Caution – monitor and manage risk of hypoglycaemia	Safe choice – patient should meet starting criteria and awareness required of potential weight loss exacerbating frailty and sarcopenia	Caution risk of dehydration.
NOT SUITABLE FOR	Those for whom hypoglycaemia would be high risk	Heart failure class IV, history of inflammatory bowel disease or gastroparesis, combination with DPP-4's	Combination with DPP-4 inhibitors
AVERAGE 28 DAY COST	Variable depending on dose and regime	£73.25 - £76.52	£92.00 - £122.00

[1] Adjust BMI cut offs for people from Black, Asian and other minority ethnic groups) and specific psychological or other medical problems associated with obesity

This guidance does not cover *full* prescribing information. Please refer to the British National Formulary BNF.nice.org.uk and individual medicines summary of product characteristics (SPC) at www.medicines.org.uk for comprehensive prescribing information.

BNSSG Medicines Optimisation Team. Approved by BNSSG APMOC (April 2024) Review (April 2027) updated May 2025

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