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

Approved BNSSG Area Prescribing and Medicines Committee 24/7/23 Virtually pending ratification at APMOC 3/8/23. Review December 2024

Treatment options if further interventions are needed to improve glycaemic control

Currently taking 1 or 2 oral drugs - *Stop medicines that have had no impact on glycaemic control or weight (unless additional cardio-renal protection from continued treatment) and either* switch to **or** if proven benefit from current medications add one from:

~~Patients with BMI 35kg/m^2 or higher[1] Or for whom weight loss would benefit other significant obesity related comorbidities~~

	GLICLAZIDE (SU)	SGLT2 inhibitor	DPP-4 inhibitors	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	**NatPSA/2023/008/DHSC FOR ALL GLP-1 AGONISTS (July 23) – NATIONAL GUIDANCE - NO NEW PATIENT INITIATIONS AT THE CURRENT TIME. REVIEW CURRENT PATIENTS AND IF NO BENEFIT FROM TREATMENT AFTER 6 MONTHS AS PER NICE (a reduction of at least 11 mmol/mol [1.0%] in HbA1c and a weight loss of at least 3% of initial body-weight) CONSIDER DISCONTINUING TREATMENT** **If GLP-1 AGONIST TO CONTINUE–** • **DO NOT SWITCH BETWEEN BRANDS (including between injectable and oral forms)** • **DO NOT DOUBLE UP ON LOWER DOSE PREPARATIONS** • **DO NOT PRESCRIBE EXCESSIVE QUANTITIES**
WEIGHT	Gain (2-3kg)	Loss (1.5-2kg)	Neutral	Gain (1-2kg)	
ASCVD	Neutral	Benefit (Canagliflozin, Dapagliflozin & Empagliflozin)	Neutral	Potential benefit	
HF	Neutral	Benefit (Canagliflozin, Dapagliflozin & Empagliflozin)	Potential risk (Alogliptin & Saxagliptin)	Increased risk	
Chronic Kidney Disease (CKD)	Careful monitoring	Do not *initiate* for glucose control (eGFR <45 ml/min/1.73m^2)	Dose adjustment required	Dose unchanged	
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	
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%	
AVERAGE 28 DAY COST	£0.91	£29.40 – £36.59	£26.60 - £33.26	£1.62 - £2.88 (dose dependent)	

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~~** Consider **Insulin** NatPSA/2023/008/DHSC **FOR ALL GLP-1 AGONISTS (July 23) – NO NEW PATIENT INITIATIONS**	Consider **Insulin** ~~or~~ ~~where insulin has significant occupational implications or if weight loss would be beneficial consider switching one drug to **GLP-1 Agonist**~~ NatPSA/2023/008/DHSC **FOR ALL GLP-1 AGONISTS (July 23) – NO NEW PATIENT INITIATIONS**

	INSULIN – Humulin I or Insulatard
AVERAGE HBA1C REDUCTION	Variable depending on dose and regime. Role in rescue therapy if symptomatic or high HbA1c.
WEIGHT	Gain
ASCVD	Neutral
HF	Neutral
CKD	Insulin requirements may decrease in patients with renal impairment and therefore dose reduction may be necessary
FRAILTY	Caution – monitor and manage risk of hypoglycaemia
NOT SUITABLE FOR	Regular testing required with driving
AVERAGE 28 DAY COST	Variable depending on dose and regime

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[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