NHS
Herts Valleys
Clinical Commissioning Group

Treatment options algorithm for type 2 diabetes mellitus

Version:	1.0
Developed by:	HVCCG Pharmacy & Medicines Optimisation Team in collaboration with HVCCG Diabetes GP Leads and West Hertfordshire Hospitals NHS Trust Diabetologists
Date ratified:	7th March 2017 (Medicines Optimisation Clinical Leads Group) 20th April 2017 (HVCCG Commissioning Executive)
Review date:	March 2019

Based on NICE NG28

Treatment options for patients with type 2 diabetes

Institute lifestyle interventions and individualised HbA1c target with patient. Agreed HbA1c target should be appropriate for the individual.

AT EVERY STEP:
- EDUCATE – reinforce importance of lifestyle interventions
- Check adherence
- Assess hypoglycaemia risk
- Optimise BP and cholesterol management
- Refer to patient structured education if available
- Consider referral for Medicines Use Review (MUR) or New Medicines Service (NMS) at a pharmacy
- Patients to self-monitor blood glucose (SMBG) if appropriate

Do not routinely offer prolonged self-monitoring of blood glucose (SMBG) levels unless:
- the person is on insulin **or**
- there is evidence of hypoglycaemic episodes **or**
- the person is on oral medication that may increase their risk of hypoglycaemia while driving or operating machinery **or**
- the person is pregnant or planning to become pregnant

If target HbA1c not achieved

First line therapy options

Offer standard-release metformin if eGFR >45ml/min/1.73m^2

Titrate slowly to reduce incidence of side effects

If standard release metformin not tolerated, consider trial of modified release metformin.

IF METFORMIN IS CONTRAINDICATED OR NOT TOLERATED or if rapid response is required then consider:
- Gliptin, **or** pioglitazone, **or** SU, **or**
- SGLT2 inhibitor only if:
  - a gliptin would otherwise be prescribed, and
  - an SU or pioglitazone is not appropriate.

If patient is symptomatic with **HbA1c >75mmol/L** and has unintentional weight loss consider early insulin or refer to secondary care

If target HbA1c not achieved (usually around 3 months)

Choose ONE of these options as add-on second line therapy (order not to denote any preference)

Sulphonylurea (SU) in combination with:
- Metformin **or**
- Gliptin **or**
- Pioglitazone

Advantages
- Generally recommended as second-line
- Low cost (consider cost of SMBG)

Disadvantages
- Moderate to severe hypo risk
- Weight gain

DPP-4 inhibitors (gliptins) in combination with:
- Metformin **or**
- Pioglitazone **or**
- SU

Advantages
- Low risk
- Weight neutral

Disadvantages
- High cost
- Do not use if history of pancreatitis
- Advise patients of pancreatitis symptoms
- At six months monitor beneficial effect is maintained

GLP-1 mimetics

For initiation criteria / combinations, see link

Advantages
- Low hypo risk
- A second-line therapy for those whom weight loss is a therapeutic priority

Disadvantages
- High cost
- Do not use if history of pancreatitis
- Advise patients of pancreatitis symptoms
- At six months monitor beneficial effect is maintained

Pioglitazone in combination with:
- Metformin **or**
- Gliptin **or**
- SU

Advantages
- Consider in people with very significant features of metabolic syndrome
- Low hypo risk
- Low cost

Disadvantages
- Do not use in patients with a history of bladder cancer, uninvestigated haematuria, fracture or CHF risk
- Weight gain

SGLT2 inhibitors in combination with:
- Metformin, **only** if SU contraindicated or not tolerated, or if there is significant risk of hypoglycaemia with an SU

Advantages
- Low hypo risk
- Weight loss

Disadvantages
- High cost
- Do not use if CrCl< 60ml/min or eGFR< 60ml/min/1.73m^2
- Do not use in patients taking loop diuretics who are volume depleted (e.g. acute GI illness)
- Avoid in patients >75yrs

Review and optimise therapy. Move to next level if target HbA1c not achieved (usually 3-6 mo.) and discontinue or adjust therapy as appropriate.
For gliptins, pioglitazone and SGLT2 inhibitors, if HbA1c not decreased by 5-6mmol/mol within six months, discontinue. For GLP-1 mimetics, continue therapy only if HbA1c reduction of at least 11mmol/mol at six months.

Consider triple therapy with one of the following options (order not to denote preference):

*Only if triple therapy with metformin and two other oral drugs is not effective. See link for initiation criteria. Continue therapy only if HbA1c reduction of at least 11mmol/mol AND weight loss of at least 3% of initial body weight at month six. **DO NOT USE A GLP-1 MIMETIC WITH A GLIPTIN.**

ΔCautioned use with pioglitazone due to potential increased bladder cancer risk. To be used only in line with HMMC guidance .

Review and optimise therapy. Add insulin if target HbA1c not achieved (usually 3-6 months) and discontinue or adjust therapy as appropriate.
For gliptins, pioglitazone and SGLT2 inhibitors, if HbA1c not decreased by 5-6mmol/mol within six months, discontinue.

Insulin
- Initiation by community or secondary care or by GPs who feel competent to do so.
- Teach SMBG to all patients before insulin initiation unless inappropriate
- Use **human insulin** first line
- Move onto analogue insulin only in line with NICE guidance NG28
- Give **insulin passport** + **information booklet**

If patient is symptomatic with a HbA1c >75mmol/mol, and has unintentional weight loss consider early insulin or refer to secondary care

DOSES MAY NEED TO BE REDUCED IN PATIENTS WITH IMPAIRED RENAL FUNCTION. CHECK MONITORING REQUIREMENTS FOR MEDICATIONS: http://www.medicines.org.uk/emc/

With acknowledgement to Surrey CCGs, Guildford & Waverley, NE Hampshire & Farnham, Crawley and Horsham & Mid-Sussex CCGs.