Clinical pathway for the use of Sodium- Glucose Co-transporter-2 inhibitors (SGLT-2 i) in Chronic Kidney Disease (CKD) and Type 2 Diabetes Mellitus (T2DM)

- Ensure patient is already on maximum tolerated licenced dose of Angiotensin Converting Enzyme inhibitors (ACEi) or Angiotensin Receptor Blockers (ARB) (NICE NG203)
- If patient has T2DM with previous DKA discuss with diabetes team before prescribing
- If patient has T1DM only secondary care to initiate and maintain as it is currently an out of licence indication

Not currently recommended in:

- Children (<18 years)
- Pregnancy or Breastfeeding
- Severe liver disease
- Bilateral renal artery stenosis
- Organ Transplant patients*
- Patients on immunosuppression*
- Lupus nephritis or ANCA vasculitis
- Polycystic Kidney Disease (PCKD)
- Active foot disease (infection, ulceration and ischaemia)

* = *There may be exceptional circumstances whereby a specialist nephrologist wishes to prescribe an SGLT2i for a patient in this group. Please discuss with specialist if no prior handover about this*

Monitoring of renal function:

- No additional monitoring of renal function required in relation to SGLT2i.
- NB: After initiation, there may be an initial decline in eGFR for which there is no reason to withdraw SGLT2i.
- SGLT2i does not need stopping once initiated but follow sick day guidance rules.
- Nephrologist team to decide whether to continue/stop if patient requires renal replacement therapy.

Potential ADRs associated with SGLT2 inhibitors:

- Mycotic genital infections - thrush *(common)*
- Increased risk of lower limb amputation (mainly toes) in T2DM on Canagliflozin *(uncommon)*- counsel patient on signs of foot infection and provide advice on preventative foot care. Monitor and stop SGLT2i if foot complication suspected.
- Ketoacidosis *(rare)* – Counsel patient on signs and stop SGLT2i if suspected.
- Fourniers gangrene *(extremely rare)* – counsel patient on signs and stop SGLT2i if suspected.

Temporarily hold SGLT2i if:

- Hospitalised for acute illness
- Hospitalised for major surgery
- Major infection
- Volume depleted e.g. D&V
- Not eating or drinking

Provide patient education on:

- Sick day rules
- Side-effects
- Seeking medical advice
- See UK Kidney Association (UKKA) PILs and APC

Drug	Indication	Dosing	CKD & DM guidance
Canagliflozin	For T2DM For T2DM with CKD	100-300mg od Maximum dose 100mg daily if eGFR<60 ml/min	**DM or DM with CKD:** eGFR 30-90 ml/min & urine ACR >30mg/mmol
Dapagliflozin	For T2DM For CKD	10mg od 5mg if severe hepatic impairment	**CKD with DM:** eGFR 25-75 ml/min **CKD without DM** eGFR 25-75 mL/min/1.73m2 **and** UACR of ≥22.6 mg/mmol
Empagliflozin	For T2DM For CKD	10mg od but can increase to 25mg od for T2DM if eGFR ≥60 ml/min	**CKD & DM:** eGFR 60-90 ml/min and T2DM eGFR 25-60 ml/min & urine ACR ≥22.6mg/mmol **CKD without DM:** eGFR 20-44 ml/min irrespective of urine ACR eGFR 45-90 ml/min & urine ACR ≥22.6mg/mmol

- Different eGFR values reflect trial evidence used by NICE for licensed indications these may differ from SPC
- Agents above are listed in alphabetical rather than preferential order.

References

1. NICE Guideline NG 203 (August 2021). Chronic kidney disease: assessment and management. Last updated November 2021. Accessed 18.12.24.
   Overview | Chronic kidney disease: assessment and management | Guidance | NICE
2. NICE Technology Appraisal Guidance TA 775 (March 2022). Dapagliflozin for treating chronic kidney disease**.** Accessed 18.12.24.
   Overview | Dapagliflozin for treating chronic kidney disease | Guidance | NICE
3. NICE Technology Appraisal Guidance TA 942 (December 2023). Empagliflozin for treating chronic kidney disease. Accessed 18.12.24.
   Overview | Empagliflozin for treating chronic kidney disease | Guidance | NICE
4. UK Kidney Association. Accessed 18.12.24.
   SGLT-2 Inhibition in Adults with Kidney Disease | The UK Kidney Association