Interventions for Chronic Kidney Disease in Primary Care

Medscape UK X Guidelines
Primary Care Hacks

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1. Lipids[3,4,14–17]

- For primary prevention, start **atorvastatin 20 mg OD**
- For secondary prevention, do not stop or attenuate dose if eGFR <30 ml/min/1.73 m²
- Offer **aspirin** for **secondary prevention** of CVD
- See also the Primary Care Hack on lipid management.

2. RAASis and Blood Pressure[3,4,11,17–24]

- Aim for **SBP <130 mmHg**, or **as low as reasonably achievable**[A]
- Follow NG136[18] and NG203[3] when choosing medications
- When RAASi is first line, choose an **ARB**[B]
- Independent of BP:[B]
  - if uACR >30 mg/mmol: start **ARB** and titrate to maximum tolerated dose
  - if uACR >3 mg/mmol in people with diabetes: start **ARB** and titrate to maximum tolerated dose
    - additional agents may be required
- If eGFR <60 ml/min/1.73 m² when starting or increasing RAASi, check U&E within **28 days**; if eGFR ≥60 ml/min/1.73 m², there is no need to routinely recheck U&E
  - **if K+ ≥5.5 mmol/l or sCr rise ≥50% encountered, follow Figure 1**; otherwise, continue to optimise RAASi dose.

3. SGLT2 Inhibitors[17,19,20,25]

- Once RAASi has been titrated to maximum tolerated dose, start an **SGLT2i** in eligible groups as per Figure 2, unless contraindicated (e.g. in people living with T1DM)[B],[C],[D]
- Continue the SGLT2i until dialysis or transplant[17,19,25]
- See also the Primary Care Hack on extra-glycaemic indications of SGLT2is.

4. Specific Considerations in T2DM

If T2DM, eGFR ≥25 ml/min/1.73 m², and uACR ≥3 mg/mmol (≥30 mg/g), consider adding:

- **finerenone**[B]—a nonsteroidal MRA that can be added as third line to an RAASi and an SGLT2i (or second line if SGLT2i is inappropriate or not tolerated) if serum potassium concentration is <5.0 mmol/l, to reduce the risk of adverse kidney and CV outcomes[5,7,17,19,26,27]—see **bit.ly/3v8PX4f**
- **semaglutide**[B]—the FLOW study demonstrated that weekly SC semaglutide 1 mg reduced the risk of adverse kidney and CV outcomes in T2DM and CKD[28]
  - consider if glycaemic and weight management goals are not met and/or K+ >5.0 mmol/l[4,17,20]
  - deprescribe any DPP4 inhibitor if initiating semaglutide[17]
  - do not switch to semaglutide if an existing GLP-1 RA with proven CV benefit is achieving goals (e.g. liraglutide or dulaglutide).

5. Holistic Care

- Opportunistically check FBC/HbA_{1c}/lipids/LBTs/weight/WtHR/BP at the same time as checking U&E and ACR, to support holistic interventions (see the Primary Care Hacks T2DM CVRM checklist, as well as the Primary Care Hacks on lipid management and LBTs)
- Offer vaccinations according to the Green Book.[29,30]

Lifestyle and Dietary Modification

- Encourage **weight loss** and **smoking cessation**[3–5,7]
- Advise on **salt restriction** (ideally <2 g of sodium per day, equating to <5 g of sodium chloride)[3,4,7,11]
- If gastric protection is required, consider **H_2RAs** over PPIs, as PPI use has been associated with increased risk of nephritis and progression of CKD[12,13]
- Avoid **NSAIDs**[3,4]
- Promote **exercise** of at least 150 minutes per week[3–5,7]
- Kidney Care UK has produced a helpful patient information leaflet to support people living with CKD.

Figure 1: Managing Acute Changes in Kidney Function Related to RAASis[3,21–24]

	Serum K+ (mmol/l)		
	5.5–6.1	**6.2–6.4**	**≥6.5**
Unwell and/or ≥50% sCr rise	**Consider hospital referral** according to clinical circumstances, likely cause, and risk of deterioration **Suspend RAASi[1,2]**	**Urgent hospital referral** **Suspend RAASi[1,2]**	**Urgent hospital referral**
Well and <50% sCr rise	**Maintain RAASi[1,2] dose** **Repeat K+ within 14 days** If repeat K+ is: • **≤5.5**: optimise RAASi[1,2] dose • **5.6–5.9**: maintain RAASi[1,2] dose • **6.0–6.4**: suspend RAASi[1,2] and discuss initiation of K+ binders with Renal team[3,4] • **≥6.5**: **consider hospital referral**	**Halve RAASi[1,2] dose** **Repeat K+ within 7 days** If repeat K+ is: • **≤5.5**: optimise RAASi[1,2] dose • **5.6–5.9**: maintain RAASi[1,2] dose • **6.0–6.4**: suspend RAASi[1,2] and discuss initiation of K+ binders with Renal team[3,4] • **≥6.5**: **consider hospital referral**	**Consider hospital referral**

1. Note: RAASis include ACEis, ARBs, potassium-sparing diuretics, and MRAs.
2. Suspend finerenone if K+ ≥5.5 mmol/l, restarting at 10 mg when K+ is <5.0 mmol/l.
3. NICE endorses potassium binders, as they enable RAASi use in those not on dialysis.
4. See NICE TA599 and TA623. Note: that K+ binders are contraindicated in people with a history of bowel obstruction, major GI surgery, or a swallowing disorder.

Table based on the authors' clinical experience and interpretation of clinical guidance.

Figure 2: SGLT2i Initiation in CKD

eGFR (ml/min/1.73 m²)	uACR (mg/mmol) <20	uACR (mg/mmol) ≥20
≥60	Suggested in T2DM	Recommended
45–60	Suggested in T2DM	Recommended
20–45	Recommended	Recommended
<20	Suggested[E]	Suggested[E]
Dialysis	Not recommended[E]	

Footnotes

[A] BP target can be relaxed and individualised if the patient cannot tolerate SBP <130 mmHg or because of other factors, e.g. frailty, reduced life expectancy, syncope.[3,4,11] NICE recommends targets of 120–139 mmHg (SBP) and <90 mmHg (DBP) if ACR <70 mg/mmol, and targets of 120–129 mmHg and <80 mmHg if ACR ≥70 mg/mmol.[3] However, in various studies, intense SBP control has not resulted in compromise.[3,5,11]

[B] Provide advice on **SICK day rules** and review the **SADMANS mnemonic** (to include finerenone and GLP-1 RAs). See **bit.ly/4bRbejF**.[17,31]

[C] Counsel patient on the main side effects of SGLT2i use, including risk of UTIs, mycotic genital infections, Fournier's gangrene, DKA, foot disease, and dehydration.[25,32] Provide **SICK day guidance**, including a leaflet (**bit.ly/4bRbejF**).[25,31] **DO NOT** routinely check renal function after commencing an SGLT2i.[3,25] Consider the patient's hydration status and adjust/reduce diuretic or anti-BP doses if high risk of hypovolaemia.[25] As eGFR drops below 45 ml/min/1.73 m², SGLT2is' glycaemic efficacy reduces.[25] However, SGLT2is can be continued if tolerated until RRT.[17,19,25]

[D] Relative contraindications to SGLT2i use include immunosuppression (e.g. kidney transplantation, lupus, vasculitis) and ADPKD.[25]

[E] Do not discontinue SGLT2i if renal function deteriorates (eGFR <20 ml/min/1.73 m²), as long as the SGLT2i was initiated prior to this.[25]

ACEi=angiotensin-converting enzyme inhibitor; **ACR**=albumin to creatinine ratio; **ADPKD**=autosomal dominant polycystic kidney disease; **AKI**=acute kidney injury; **ARB**=angiotensin II receptor blocker; **BP**=blood pressure; **CKD**=chronic kidney disease; **CV**=cardiovascular; **CVD**=cardiovascular disease; **DBP**=diastolic blood pressure; **DKA**=diabetic ketoacidosis; **DPP4**=dipeptidyl peptidase-4; **eGFR**=estimated glomerular filtration rate; **FBC**=full blood count; **GI**=gastrointestinal; **GLP-1 RA**=glucagon-like peptide-1 receptor agonist; **H_2RA**=histamine-2 receptor antagonist; **Hb**=haemoglobin; **HbA_{1c}**=haemoglobin A1c; **HF**=heart failure; **KDIGO**=Kidney Disease: Improving Global Outcomes; **K+**=potassium; **LBT**=liver blood test; **MRA**=mineralocorticoid receptor antagonist; **NG**=NICE Guideline; **NSAID**=nonsteroidal anti-inflammatory drug; **OD**=once daily; **OOH**=out of hours; **PPI**=proton-pump inhibitor; **RAASi**=renin–angiotensin–aldosterone system inhibitor; **RRT**=renal replacement therapy; **SADMANS**=sulfonylureas, ACEis, diuretics, metformin, ARBs, NSAIDs, SGLT2is; **SBP**=systolic blood pressure; **SC**=subcutaneous; **sCr**=serum creatinine; **SGLT2i**=sodium–glucose co-transporter-2 inhibitor; **SICK**=sugar, insulin, carbohydrate, ketones; **T1DM**=type 1 diabetes mellitus; **T2DM**=type 2 diabetes mellitus; **U&E**=urea and electrolytes; **uACR**=urine albumin to creatinine ratio; **UTI**=urinary tract infection; **WtHR**=waist-to-height ratio