

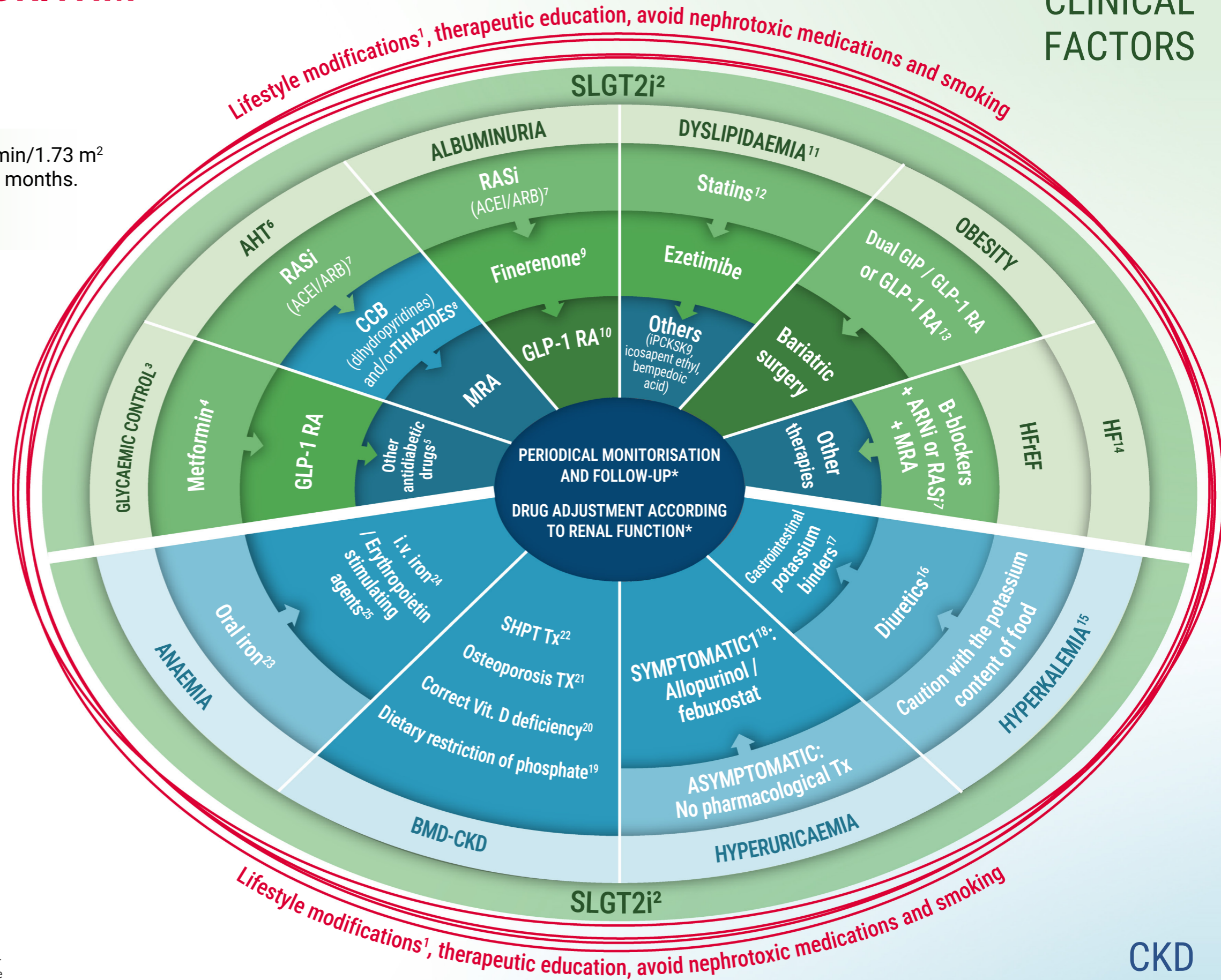
# CKD TREATMENT ALGORITHM IN PEOPLE WITH DM2



CLINICAL FACTORS

- CKD diagnosis: presence of eGFR < 60 ml/min/1.73 m<sup>2</sup> and/or albuminuria > 30 mg/g for at least 3 months.
- Staging and prognosis.\*
- Treat underlying causes.

- Individualized physical exercise according to clinical situation. CKD G1-G3: Moderate restriction of sodium in case of AHT or hydrosaline overload. CKD G4-G5: Moderate restriction of sodium, potassium, phosphorus, and protein (0.8 g/kg/day not on dialysis). Consult the algorithm on lifestyle changes in DM2 from redGDPS.
- In all people with DM2 and CKD with eGFR ≥ 20 ml/min/ 1.73 m<sup>2</sup> (canagliflozin, dapagliflozin, empagliflozin). Maintain until dialysis or transplant.
- Individualized glycaemic control target: HbA1c < 6.5% to < 8%. Consult the DM2 treatment algorithm from redGDPS.
- Adjust doses according to renal function. Discontinue if eGFR < 30 ml/min.
- Recommended: DPP4i, Pioglitazone, Repaglinide, Insulin. Do not associate DPP4i with GLP-1 RA.
- Objective BP < 130/80 mmHg.
- Progressive dose adjustment to the maximum tolerated dose. Do not associate ACEi and ARB. Monitor potassium levels and renal function at 2-4 weeks of initiating or optimising ACEi/ARB doses.
- Prioritize thiazide diuretic over CCB if AHT and albuminuria.
- In patients who are on optimised treatment with RASi (ACEi/ARB) or who present with intolerance to these.
- If high levels of albuminuria and poor glycaemic control persist.
- Suggested targets: reduction of baseline LDL-C ≥ 50% and: LDL-C < 70 mg/dl in CKD G3; LDL-C < 55 mg/dl in CKD G4 and G5 (not on dialysis).
- Moderate/high intensity to achieve control objectives. Adjust dosage according to renal function (atorvastatin does not need adjustment). Avoid concomitant fibrate/statin therapy.
- According to potency (from highest to lowest): tirzepatide-s.c./oral semaglutide-liraglutide-dulaglutide-remaining GLP1 RA.
- Diuretics if signs/symptoms of congestion. Consult Heart Failure algorithm from RedGDPS
- Rule out pseudohyperkalemia. If severe chronic or symptomatic, or acute hyperkalemia > 6 mEq/l or with changes in ECG, refer to the hospital emergency department. Do Not Suspend RASi and MRA if mild hyperkalemia.
- Loop or thiazide diuretics if AHT, HF, or albuminuria.
- Sodium Zirconium Cyclosilicate, Patiromer, or Calcium Polystyrene Sulfonate.
- Initiate treatment after the first episode of gout. Febuxostat: Caution if severe CVD.
- Encourage the consumption of plant-based proteins. In CKD G3a-G5, if progressive hyperphosphatemia persists, add phosphate binders (limit those containing calcium and avoid those that contain aluminium).
- Follow the same criteria as in the general population.
- Up to category G3a of CKD if PTH is normal, as in the general population. In the rest, assess risk/benefit at the individual level.
- If there is a progressive and persistent increase in PTH, correct modifiable causes. If an elevation of PTH 2-3 times the upper limit persists, refer for follow-up and assessment of treatment with calcitriol or Vit. D analogues (CKD G4-G5).
- If ferritin < 100 ng/ml or ferritin 100-300 ng/ml and TSI < 20%.
- If ferritin levels of 200-500 ng/ml and TSI ≈ 30% are not achieved, refer for evaluation of i.v. iron.
- If, after ruling out and/or correcting other causes of anaemia, the iron parameters are suitable and Hb is ≤ 10 g/dl (between 10-11 g/dl if symptomatic), refer to Nephrology for assessment with erythropoietin-stimulating agents.



\*Consult complementary material

Green colour: options with evidence of reduced events and/or CKD progression

ABBREVIATIONS

ACEi: angiotensin-converting enzyme inhibitor; AH: arterial hypertension; ARB: angiotensin II receptor antagonist; ARNi: Nephilysin and angiotensin II receptor inhibitor; CCB: calcium channel blockers; CKD: chronic kidney disease; CKD-MBD: chronic kidney disease-mineral and bone disorder; CVD: cardiovascular disease;

DPP4i: Dipeptidyl peptidase 4 inhibitors; eGFR: estimated glomerular filtration rate; GIP RA: insulinotropic polypeptide receptor agonist; GLP-1 RA: glucagon-like peptide-1 receptor agonist; HbA1c: glycated haemoglobin; HF: heart failure; HF+EF: Heart failure with reduced ejection fraction; MRA: mineralocorticoid receptor antagonist; LDL-C: low-density lipoprotein cholesterol;

PCSK9i: proprotein convertase subtilisin/kexin-9 inhibitors; PTH: Parathyroid hormone; RASi: renin-angiotensin system inhibitor; SGLT2i: sodium-glucose cotransporter inhibitor type 2; SHPT: secondary hyperparathyroidism; TSI: Transferrin Saturation Index; Tx: treatment.

CKD COMPLICATIONS