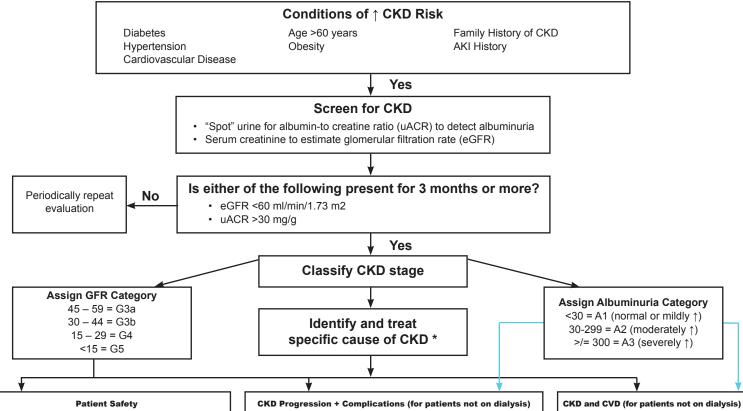


# **How to Manage CKD**



### eGFR <60

- Consider eGFR in drug dosing
- · Reduce risk of AKI volume depletion

# eGFR 45 to <60

- · Avoid prolonged NSAIDs
- · Hold metformin for iodinated contrast imaging procedures

# eGFR 30 to <45

- · Avoid prolonged NSAIDs
- · Use metformin with close monitoring at 50% dose
- · Adjust DOAC dose based on FDA prescribing guides
- · Consider avoid PICC lines to preserve future veinous access; consider nephrology consult or use single or double lumen central catheters instead
- Consider iodinated contrast-induced AKI prevention in high-
- Avoid iodinated contrast or minimize dose
- · Consider isotonic saline infusion before, during, and after procedure
- · Hold metformin at time of or before procedure
- · Consider withhold other nonessential potentially nephrotoxic agents

- · Annual comprehensive medication review for dosing and other safety concerns
- · Avoid any NSAIDs, bisphosphonates, and metformin
- · Continue SGLT-2i until dialvsis (if tolerated): Refer to FDA prescribing guides for guidance on initiating SGLT-2i in G4 CKD
- · Avoid PICC lines: use single and double lumen central catheters instead
- Monitor PT/INR closely if on warfarin (increased bleed risk)
- · Adjust DOAC dose or avoid depending on FDA prescribing guides
- · Iodinated contrast-induced AKI prevention recommended
- Avoid iodinated contrast or minimize dose
- Consider isotonic saline infusion before, during and after procedure
- Withhold nonessential potentially nephrotoxic agents
- Gadolinium contrast = risk of nephrogenic systemic fibrosis; consult radiology & nephrology, macrocyclic agent preferred and minimize dose

# BP Goals

- No DM:
- SBP <120 (when tolerated) using standardized office BP measurment
- SBP <130 reasonable, especially if no access to standardized BP measurement
- · With DM:
- SBP <130 using standardized office BP measurement
- · Balance risk for AKI and polypharmacy, especially if very low kidney function
- · Consider less intensive therapy if limited life expectancy or symptomatic postural hypotension

# **BP Treatment**

- ACE-I or ARB 1st line if DM or uACR >30 (A2/A3),
- titrated to highest tolerated/approved dose
- Thiazide, CCB, or ACE-I/ARB 1st line if uACR < 30 (A1)</li>
- · Avoid any combination of ACE-I, ARB, and DRI therapy
- · Diuretic usually required
- · Dietary sodium <2000 mg/day

- Individualized A1C goal ranging from <6.5% to < 8%, depending on:
- CKD severity, macrovascular complications, comorbidities, life expectancy, hypoglycemia awareness, resources for hypoglycemia management, and propensity for hypoglycemia
- CGM time in range (TIR) > 70% (either 70-180 mg/dL or patient-specific range)

# **T2DM Treatment**

· Prioritize SGLT-2i, metformin, and/or GLP-1 RA

### Vaccination for influenza, pneumococcus, and full COVID-19 series **CKD Complications Screening**

- Acidosis Bicarbonate goal: 22-26; treat <22 with oral bicarbonate supplements and promote base-producing diet
- Anemia CKD G3a+; Evaluate if Hb <13 g/dL (men) or <12 g/dL (women). Treat iron deficiency first. Consider ESA to treat Hb <10 g/dL if favorable risk/benefit (Target 9-11.5 g/dL) or refer to nephrology.
- CKD-MBD CKD G3a+; evaluate calcium, phosphate, 25-OH vitamin D, and iPTH. Supplement vitamin D deficiency. Refer to nephrology if hyper phosphatemia or significant iPTH elevation. Consider BMD testing if results will impact treatment decisions.

# Nephrology Referral

- eGFR <30 (G4/G5) or uACR >300 (A3)
- >25% decrease in eGFR (AKI or progressive CKD may be difficult to distinguish)
- Sustained decline in eGFR >5 mL/min/1.73m2/vear
- · 20 hyperparathyroidism
- CKD and HTN refractory to treatment with >4 antihypertensive agents
- · Persistent hyperkalemia / metabolic acidosis
- · Recurrent or extensive kidney stones
- · Persistent unexplained hematuria
- · Hereditary or unknown cause of CKD

CKD = ↑CVD risk

# Consider statin therapy

- All >/= 50 years
- 18-49 years at high CVD risk (history of ASCVD, DM, 10-yr ASCVD risk >10%)
- · Additional lipid-lowering treatment may be warranted for higher risk individuals

Consider SGLT-2i (independent of T2DM) if eGFR within FDA prescribing guidelines, especially if uACR > 30 (A2+)

Consider NS-MRA after max tolerated ACE-I/ ARB if:

• T2DM, uACR > 30 (A2+), eGFR >25, AND

Low-dose aspirin for secondary ASCVD prevention unless bleeding risk outweighs

\* Cause of CKD is classified based on presence or absence of systemic disease and the location within the kidney of observed or presumed pathologic-anotomic findings.