**Guiding Principles:** Chronic kidney disease is often associated with hyperkalemia, which **predisposes patients to the risk of cardiac arrhythmias.** Potassium levels are affected by diet, degree of kidney failure, and medications. Interventions for hyperkalemia include a potassium-restricted diet and the use of potassium binding resins such as sodium calcium sulfonate (eg. Resonium).

Bloodwork should be **based on patient preference** but it would be reasonable to monitor potassium levels monthly. It is important to assess trends rather than a single value.

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## ▶ GFR 15 - 5 | Slow Decline/Deteriorating | Last 0-5 years of life

In general, it is recommended to provide acute treatment of hyperkalemia in CKM patients but this should be **determined based on the patient's wishes and values.**

Whenever possible, patients requiring a potassium restricted diet should be considered for a referral to a Registered Dietitian

- See: AHS Potassium Foods Brochure

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**Discussion with Patients & Families**

If the patient is ambivalent or **worried about sudden death from high potassium** (or if it is important for them to live to see an important milestone), it is appropriate to continue with monitoring and interventions.

For patients who wish to liberalize their intake, the **risks of lifting the potassium restriction must be explained clearly.** If a patient does not want interventions to prolong life, potassium levels do not need to be monitored.

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## ▶ GFR 5 - 0 | Intensive/Near Death | Last 0-2 months of life

It is appropriate to **stop monitoring and managing potassium levels** if the patient is in his or her last weeks or days of life:

- Discontinue medications that were intended to maintain appropriate potassium levels (e.g. potassium-binding cation-exchange resins) to decrease pill burden.
- The patient can eat as desired.

| Hypokalemia (Potassium less than 3.4 mmol/L) | Potassium 5.5-6.2 mmol/L | Hyperkalemia (Potassium greater than 6.3 mmol/L) |
|---|---|---|
| **Acute Management:**<br>• Provide dietary instruction regarding increasing potassium intake. If potassium is consistently low, advise patient to liberalize potassium intake (eg. addition of at least 2 high potassium foods per day)<br>• Notify the most responsible healthcare provider | **Acute Management:**<br>• Decrease or stop ACEi, ARB or other drugs that may raise potassium[1]<br>• Low potassium diet (See: AHS Potassium Foods Brochure)<br>• Consider calcium polystyrene sulfonate (Resonium) 30 grams<br>• Rule out acidosis as a contributing factor | **Acute Management:**<br>• Notify most responsible healthcare provider<br>• Recommended intervention would be calcium polystyrene sulfonate (Resonium) 30 grams PO 1-2 times per day<br>• Consider referral to the emergency department if (1) potassium is greater than 7 mmol/L or (2) if a patient wishes to have additional treatment<br>• **It is recommended that all CKM patients have Resonium available in the home as part of their crisis action plan** (See: Severe Hyperkalemia Protocol)<br>• Discuss with patient if they want repeat bloodwork done within one week |
| **Re-check potassium in 1-2 weeks** | | |
| **Long-term management:**<br>• Consider adding a potassium supplement or reducing dose of potassium wasting medication | **Long-term management:**<br>• If potassium normal: consider restarting ACEi, ARB or other drugs at a reduced dose<br>• If potassium remains persistently elevated: consider a referral to nephrology | **Long term management:**<br>• Decrease or stop dose of ACEi, ARB or other drugs that may raise potassium[2]<br>• Low potassium diet (See: AHS Potassium Foods Brochure)<br>• Consider adding thiazide or loop diuretic if persistent elevation in potassium |

[1]Drugs that may raise potassium: Angiotensin Converting Enzyme Inhibitors (ACEi), Angiotensin II Receptor Agonists (ARBs), Selective Aldosterone Receptor Antagonists (eg. eplerenone), Trimethoprimsulfamethoxazole, NSAIDs, Beta Blockers, Potassium-sparing diuretics (eg. amiloride or spironolactone) and Antifungals (e.g. fluconazole). Increases in serum potassium of up to 0.5mmol/L can be expected when ACEi or ARB are initiated or with an increase in dose.

*Modified for CKM patients from the original AHS CKD Pathway*

## Conservative Kidney Management Acronym Legend

| Acronym: | Intended Meaning: |
|---|---|
| ATC | Around the Clock |
| BID | Twice Daily |
| CKD | Chronic Kidney Disease |
| CKM | Conservative Kidney Management |
| COPD | Chronic Obstructive Pulmonary Disease |
| CO2 | Carbon Dioxide |
| EOL | End of Life |
| ESA | Erythropoietin Stimulating Agent |
| ESKD | End Stage Kidney Disease |
| GFR | Glomerular Filtration Rate |
| GI | Gastrointestinal |
| g/L | Grams per litre |
| HgB | Hemoglobin |
| IN | Intranasal |
| IU | International Units |
| IV | Intravenous |
| kg | Kilogram |
| mcg | Microgram |
| mg | Milligram |
| mL | Millilitre |

| Acronym: | Intended Meaning: |
|---|---|
| mmol/L | Millimoles per Litre |
| OTC | Over the Counter |
| PO | By Mouth |
| PRN | As Needed |
| NSAID | Non-steroidal Anti-inflammatory Drugs |
| q(1-8)d | Every (Time Eg, 2) Days |
| q(1-8)h | Every (Time Eg, 4) Hours |
| q(1-8)weeks | Every (Time Eg. 2) Weeks |
| QHS | At Bedtime |
| RLS | Restless Leg Syndrome |
| SC | Subcutaneous |
| SL | Sublingual |
| SNRI | Serotonin and Norepinephrine Reuptake Inhibitors |
| SSRI | Selective Serotonin Reuptake Inhibitors |
| TCA | Tricyclic Antidepressant |
| TID | Three Times a Day |
| > | Greater Than |
| ≥ | Greater Than or Equal To |
| < | Less Than |
| ≤ | Less Than or Equal To |