**Clinical Biochemistry**

Liverpool University Hospitals NHS Foundation Trust

**Issue number: Version 1 (enter number)**

**Subject:** Management of Hypokalaemia

**Objective:** To describe the appropriate management of hypokalaemia in hospitalised patients in non-critical areas of Trust

**Target Level:** Trust-Wide

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**'CG Approved' logo will be added by CG Dept.**

**Evidence Base:** **Rank: A, B, C or D** (CSG/CG Dept will categorise evidence base)

**Associated Documents:** Outline other documents that this document should be read in conjunction with or may be required for implementation of this clinical guideline (If appropriate).

**Information Classification Label** ☒ **Unclassified**

**Date of Issue:** September 2021 **Review Date:** month & year + 3

| REVIEW HISTORY | | | |
|---|---|---|---|
| **Issue No.** | **Page** | **Changes made with rationale and impact on practice** | **Date** |
| | | | |

## Purpose of Guideline:

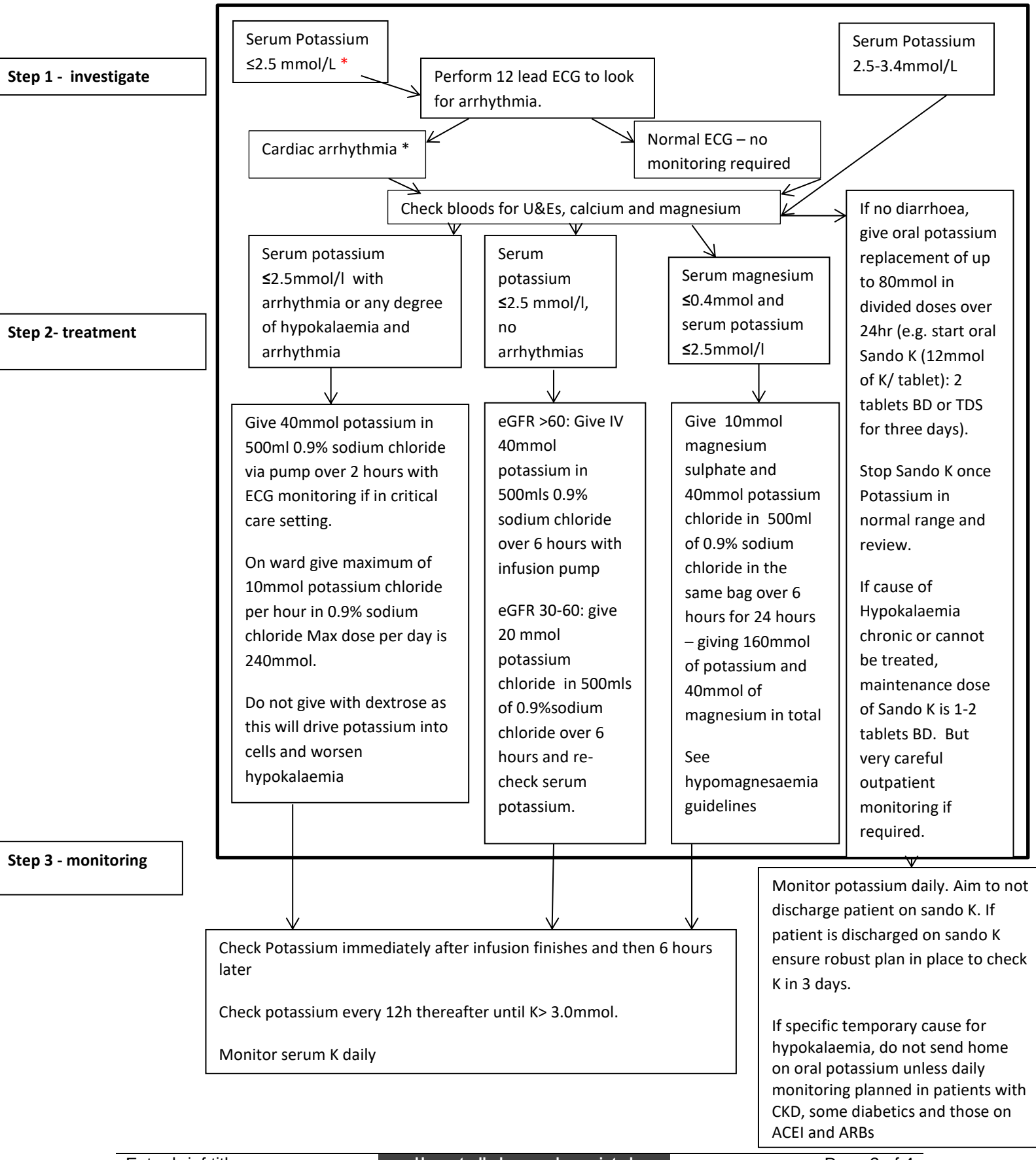
This describes the appropriate management of hypokalaemia in hospitalised patients. Hypokalaemia is defined as serum potassium <3.5mmol/L.

Severe hypokalaemia is defined as serum potassium of ≤2.5 mmol/L.

Most patients with hypokalaemia will be asymptomatic. The most common serious consequence of hypokalaemia is cardiac arrhythmias. The severe hypokalaemia can present with flaccid paralysis, hyporeflexia, muscle weakness and respiratory depression. Potassium levels below 2mmol/l may result in rhabdomyolysis.

**This guidance only for wards and emergency medicine.**

## Treatment Algorithm:



***All of these patients should be managed in a monitored bed until their electrolyte balance has resolved. Please look for and treat other metabolic abnormalities.**

**Please contact on call endocrinology or on call biochemist (through switch board) to ensure plan and prescription is appropriate.**

**Finding the cause**

## Finding the cause:

To successfully treat hypokalaemia it is important to know the cause. Causes of hypokalaemia can be broadly split into 4 categories – insufficient intake, intracellular shift, gastrointestinal loss and renal losses.

| Insufficient intake | Intracellular shift | Gastrointestinal losses | Renal losses |
|---|---|---|---|
| Alcohol excess | Alcohol excess (alcoholic ketogenesis) | Alcohol excess | Alcohol excess (kaliuresis) |
| Anorexia nervosa | Insulin administration | Diarrhoea | DKA |
| Ketogenic diet | Alkalosis | Excessive sweating | Medications (loop diuretics, thiazide diuretics, amphotericin, cisplatin) |
| | Use of beta agonists | Muscle crush injuries | Hypomagnesaemia |
| | Use of theophylline / aminophyllin | Pancreatic fistula | Hyperaldosteronism |
| | Defect of muscular ion channels (eg. Hypokalaemic periodic paralysis) | Vomiting / Nasogastric tube losses | Cushing's |
| | Refeeding syndrome | | Barter's syndrome |
| | | | Gitelman's syndrome |

## Discharge advice:

1. Patients being discharged with hypokalaemia or on hypokalaemia treatment should not go home with more than 2 days of therapy.

2. GP should be advised to recheck potassium if potassium supplementation is expected to take place over long period.

3. If chronic potassium replacement is required, a long term follow up plan with at least weekly potassium tests in the community must be put into place.

**CHRONIC HYPOKALAEMIA IS RARE: ALL PATIENTS WHO ARE CONSIDERED TO HAVE THIS DIAGNOSIS SHOULD HAVE BEEN INVESTIGATED BY EITHER GASTROENTEROLOGY, RENAL OR ENDOCRINOLOGY AND BE UNDER THE APPROPRIATE TEAMS' LONG TERM FOLLOW UP. REFERRAL IS DEPENDENT ON PATIENT SYMPTOMS.**

## References

Mishra V. Hypokalaemia. Royal Liverpool University Hospitals Foundation Trust. March 2018.

Halperin, ML; Kamel, KS (1998). "Potassium". Lancet. 352 (9122): 135–40. doi:10.1016/S0140-6736(98)85044-7. PMID 9672294. S2CID 208790031

## Acknowledgement