Cambridgeshire & Peterborough Integrated Care System

NHS Cambridgeshire & Peterborough

Shared Care Guideline
Sodium zirconium cyclosilicate for persistent hyperkalaemia in adults with chronic kidney disease or heart failure

Executive Summary

- **Sodium zirconium is prescribed for persistent hyperkalaemia in adults with chronic kidney disease (stages 3b to 5, excluding those on dialysis) or heart failure and have a confirmed serum potassium level of at least 6.0 mmol/litre, and are not taking an optimised dosage of renin-angiotensin-aldosterone system (RAAS) inhibitor because of hyperkalaemia.**
- **Dosing: A starting dose of 5 g once daily is recommended, with titration up to 10g once daily, or down to 5g once every other day, to maintain a normal potassium level. No more than 10g once daily should be used for maintenance therapy.**
- **The hospital specialist will initiate and prescribe treatment for at least FOUR weeks and until the dose is stable. The hospital specialist will carry out necessary monitoring during this period, after which the GP will prescribe.**
- **The responsibilities of the hospital specialist, GP and patient for this Shared Care Guideline can be found within this document.**

Sharing of care depends on communication between the specialist, GP and the patient or their parent/carer. The intention to share care should be explained to the patient and accepted by them. Patients are under regular follow-up and this provides an opportunity to discuss drug therapy. The doctor/healthcare professional who prescribes the medication has the clinical responsibility for the drug and the consequences of its use.

1. Scope

Prescribing and Monitoring by Hospital Specialists (Nephrology and Cardiology) and General Practitioners.

2. Aim

To provide advice on safe prescribing and monitoring of sodium zirconium cyclosilicate for persistent hyperkalaemia in adults with chronic kidney disease (stages 3b to 5, excluding those on dialysis) or heart failure, as per NICE guidance.

3. Introduction

Sodium zirconium cyclosilicate is a cation exchange compound used in the management for people with persistent hyperkalaemia and stages 3b to 5 chronic kidney disease or heart failure, if they:

- have a confirmed serum potassium level of at least 6.0 mmol/litre and
- are not taking, or are taking a reduced dosage of, a renin-angiotensin-aldosterone system inhibitor because of hyperkalaemia and
- are not on dialysis.

4. Abbreviations

RAAS	Renin-angiotensin-aldosterone system
CKD	Chronic kidney disease

5. Dose and Administration

Treatment will be considered after implementation of a low potassium diet.

Dose:
Starting dose is 5g once daily is recommended, with possible titration up to 10g once daily, or down to 5g once every other day, as needed, to maintain a normal potassium level. No more than 10g once daily should be used for maintenance therapy.

Dose amendments will be made at 2 weekly intervals after a check of serum potassium levels.

Route:
Oral. The entire contents of the sachet should be emptied in a drinking glass containing approximately 45ml of water and stirred well. The powder will not dissolve. The tasteless liquid should be drunk while still cloudy. If the powder settles, the water should be stirred again. It should be ensure that all of the content is taken.

6. Adverse Effects

Common (≥ 1 in 100 and < 1 in 10)= 1-10%
Hypokalemia
Oedema related events (observed in maintenance phase; See the Summary of Product Characteristics (SPC) for further details)
Constipation
Nausea

Uncommon (≥ 1 in 1000 and < 1 in 100) (0.1-1%)
Diarrhoea
Abdominal pain/ distension
Vomiting
Hypersensitivity reactions; rash and pruritus

7. Cautions

Discontinue if blood tests show hypokalaemia (serum potassium < 4.0mmol/L) and re-evaluate the patient.

Sodium zirconium cyclosilicate has a high sodium content. Therefore in heart failure patients with baseline fluid overload caution should be applied as to whether sodium zirconium cyclosilicate should be prescribed. This decision will be undertaken by the Hospital Specialist.

Heart failure patients are generally advised to keep sodium consumption to below 3g per day. As 5g sodium zirconium delivers 400mg of sodium, a maintenance dose of 5-10g/day equates to 400mg-800mg of sodium, and this should be factored into the patients sodium consumption.

8. Contraindications

Sodium zirconium cyclosilicate is contra-indicated in pregnancy.

9. Interactions

Sodium zirconium cyclosilicate should be administered at least 2 hours before or 2 hours after oral medications with clinically meaningful gastric pH dependent bioavailability.

Examples of medicinal products that should be administered 2 hours before or after sodium zirconium cyclosilicate to avoid possible raised gastric pH drug interaction are azole antifungals (ketoconazole, itraconazole and posaconazole), anti-HIV drugs (atazanavir, nelfinavir, indinavir, ritonavir, saquinavir, raltegravir, ledipasvir and rilpivirine) and tyrosine kinase inhibitors (erlotinib, dasatinib and nilotinib).

Further information about dose and administration, adverse effects, cautions, contraindications and interactions can be found in the Summary of Product Characteristics (for sodium zirconium cyclosilicate) https://www.medicines.org.uk/emc/product/10074/smpc

10. Monitoring Standards & Actions to take in the event of abnormal test results/ symptoms

On-going monitoring of electrolytes:

- Urea and electrolytes, including serum potassium, every 2 weeks during the initiation period by the Hospital Specialist.
- Urea and electrolytes, including serum potassium, every month once prescribing taken over by GP.
- Serum potassium after 2 weeks when any changes made to medications that affect the serum potassium concentration (e.g. ACEi, ARB, potassium-sparing diuretics) and after dose titration
- Rarely additional monitoring may be required if the patient increases their dietary potassium intake. This will be advised to the GP through specialist low clearance or heart failure clinics.
- Serum sodium levels should be monitored monthly – this will be included in standard urea and electrolytes.

11. Shared Care Responsibilities

a. Hospital specialist:

- Send a letter to the GP requesting shared care for the patient.
- Inform GP of patients who do not attend clinic appointments.
- To provide any advice to the patient/carer when requested.

- Initiate treatment and as a minimum prescribe the first FOUR weeks of treatment AND until the dose is stable, carry out necessary monitoring during this period, and once dose stabilised to refer to GP for continued treatment.
- Perform routine clinic follow-up on a regular basis.
- Send a letter to the GP after each clinic attendance ensuring current dose, changes to dose (including discontinuation), most recent blood results and frequency of monitoring are stated.
- Evaluation of any reported adverse effects by GP or patient.
- Ensure that backup advice is available at all times.
- Patients starting dialysis and patients being transplanted should be reviewed by a renal consultant as to whether continuation of treatment is appropriate.
- Advise patients on a low-potassium diet.

b. General Practitioner:

- Agreement to shared care guideline.
- Report any adverse events to the hospital specialist, where appropriate.
- Request advice from the hospital specialist when necessary (including if the patient does not attend appointments).
- Prescribe the drug treatment as described.
- Monitor blood results (U+Es) in line with recommendations from hospital specialist (see monitoring section).
- Inform hospital specialist if hypernatraemia develops.
- Discontinue if hypokalemia present (serum potassium < 4 mmol/l) and inform hospital specialist.
- Encourage patients to continue low-potassium diet

c. Patient or parent/carer:

- Report to the hospital specialist or GP if they do not have a clear understanding of their treatment.
- Patients must not exceed the recommended dose.
- Patients must attend their scheduled clinic and blood test appointments (where relevant).
- Must inform other clinical staff that they are receiving treatment.
- Report any adverse effects to the hospital specialist or GP.
- Share any concerns they have in relation to treatment with sodium zirconium cyclosilicate.
- Report any adverse effects to their specialist or GP whilst taking sodium zirconium cyclosilicate.

12. Contact numbers for advice and support

Cambridge University Hospitals NHS Foundation Trust

NEPHROLOGY contact	Role	Contact details
Dr Nicholas Pritchard	Renal consultant	01223 400183 / 01223 217821 (in working hours)
Dr Anil Chalisey	Renal consultant	01223 400183 / 01223 217821 (in working hours)
Dr Sanjay Ojha	Renal consultant	01223 400183 / 01223 217821 (in working hours)
Dr Andrew Fry	Renal consultant	01223 400183 / 01223 217821 (in working hours)
On-Call Renal Registrar	Renal registrar	Via CUH switchboard (Out of hours or for emergency advice)
Olivia Kanka	Renal Pharmacist	01223 217611 (in working hours)

CARDIOLOGY contact	Role	Contact details
Dr Catriona Bhagra	Consultant Cardiologist	01223 256575 / 01223 586657 (in working hours)
Dr Mun Cheang	Consultant Cardiologist	01223 256575 / 01223 586657 (in working hours)
Dr Elena Zambon	Consultant Cardiologist	01223 256575 / 01223 586657 (in working hours)
Heart Failure Specialist Nurses	Heart Failure Specialist Nurses	01223 256575 / 01223 586657 (in working hours)
On-Call Cardiology Registrar	Cardiology registrar	Via CUH switchboard (Out of hours or for emergency advice)

North West Anglia Foundation Trust

NEPHROLOGY contact	Role	Contact details
Dr Soubhik Pal	Consultant Nephrologist	01733 673699

CARDIOLOGY contact	Role	Contact details
Dr Denise Braganza	Consultant Cardiologist	01733 673813
Dr Brian Gordon	Consultant Cardiologist	01733 673813
Dr Janusz Jagoda	Consultant Cardiologist	01733 673813
Dr Joanne Porter	Consultant Cardiologist	01733 673814
Dr Peter Schofield	Consultant Cardiologist	01733 673813
Dr Rebecca Schofield	Consultant Cardiologist	01733 673811

Cambridgeshire and Peterborough NHS Foundation Trust

CARDIOLOGY contact	Role	Contact details
Elizabeth Woodruff	Consultant Heart Failure Nurse	07920 576713

13. Equality and Diversity Statement

This document complies with the Cambridge University Hospital NHS Foundation Trust service Equality and Diversity statement.

14. Disclaimer

It is your responsibility to check that this printed out copy is the most recent issue of this document.

15. Document Management

Ratification Process	**Details**
Authored by:	Cambridge University Hospitals NHS Foundation Trust
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Version number:	2

The information contained in this guideline is issued on the understanding that it is accurate based on the resources at the time of issue. For further information please refer to the most recent Summary of Product Characteristics

Shared Care Guideline Sodium zirconium cyclosilicate for persistent hyperkalaemia in adults with chronic kidney disease or heart failure - Template Letter

{GP ADDRESS}

Dear Dr,

{PATIENT DETAILS}

Your patient was seen on ***{Insert date}*** with a diagnosis of ***{Insert diagnosis}***. He/she has persistent hyperkalaemia preventing optimisation of renin-angiotension-aldosterone inhibition. I have therefore initiated sodium zirconium cyclosilicate and am writing to ask you to participate in the shared care for this patient.

This medication and indication has been accepted as suitable for shared care by the Cambridgeshire and Peterborough Integrated Care System. I agree to the secondary care responsibilities set out in the shared care agreement for this medication. I am therefore requesting your agreement to share the care of this patient.

Medication name:	{Sodium zirconium cyclosilicate}
Current dose:	{5g once daily/ alternate days OR 10g once daily}
Date medication started:	{Insert date}
Date after which GP to start prescribing:	{Insert date}[1]

Last bloods were taken on {Insert date} and these show a stable potassium less than 6 mmol/L, and sodium and magnesium within the normal range. The latest results are attached below.

The dose has been titrated and is stable

I confirm I have explained to the patient: the risks and benefits of treatment, the baseline tests conducted the need for monitoring, how monitoring will be arranged, and the roles of the consultant/nurse specialist, GP and the patient in shared care.

I confirm the patient has understood and is satisfied with this shared care arrangement.

Yours sincerely

{Consultant name}

[1]This should be the date when the last prescription was issued. It is expected that patients will request a repeat prescription sometime after this date.