East and North Hertfordshire NHS
NHS Trust

Trust-wide Guideline

For

Use of Oral Sevelamer for Hyperphosphataemia in Adult* Patients with Chronic Kidney Disease

Shared Care Guideline

Accepted for use with permission, and ratified by Bedfordshire and Luton Joint Prescribing Committee, September 2019

A guideline recommended for use

In: East and North Herts NHS Trust Hertfordshire, Bedfordshire and Luton Clinical Commissioning Groups

By: Renal doctors in East and North Herts NHS Trust, GPs, Hospital Pharmacists**,** Community Pharmacists

For: Cases of hyperphosphataemia in adult* patients (ie aged 18 yrs and above) with chronic kidney disease, cared for by East and North Herts NHS Trust

Key Words: Sevelamer, phosphate binders, hyperphosphataemia, chronic kidney disease

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31st January 2018

Trust Ratification: J.Evans

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24th May 2018

Guideline issued: May 2018

To be reviewed before: May 2021

To be reviewed by: Renal Pharmacist

CGSG Guideline Registration No. 123 **Version No.** 3

Version	Date	Comment
1	October 2012	New Guideline
2	April 2015	Scheduled Review
3	May 2018	Scheduled Review

Equality Impact Assessment
This document has been reviewed in line with the Trust's Equality Impact Assessment guidance and no detriment was identified. This policy applies to all regardless of protected characteristic - age, sex, disability, gender-re-assignment, race, religion/belief, sexual orientation, marriage/civil partnership and pregnancy and maternity.

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Associated Documentation

Lanthanum in Adults Shared Care CGSG 124

Review
This document will be reviewed within one year of issue, or sooner in light of new evidence.

Contents

ORAL SEVELAMER FOR ADULTS – SHARED CARE GUIDELINE

Part One: Shared Care Responsibilities of Specialist, GP and Patient for Use of Oral Sevelamer

The following guidelines are designed to provide information relating to the phosphate binder sevelamer and to outline the responsibilities of the Primary and Secondary Care Teams in the prescribing of this drug.

Scope of Shared Care Guidelines

Following the re-organisation of the NHS in April 2013, sevelamer for dialysis patients is commissioned by NHSE. Sevelamer for dialysis patients is a tariff-exempt drug and any cost incurred from its prescribing should be charged to the Specialist Commissioning team. Both the CCGs and the hospital are able to do this. Sevelamer for non-dialysis patients is commissioned by the CCGs. Sevelamer is indicated as being suitable for shared-care.

This position has been clarified with the local area team for NHSE and communicated to Beds and Herts CCGs.

Type of Patient	Shared Care with GP	Reason
Patient on Dialysis	Yes *	Commissioning responsibility with NHSE
Patient with CKD and not on dialysis	Yes	Commissioning responsibility with CCG

* For dialysis patients on sevelamer the CCG is able to reclaim the cost of prescribing from NHSE.

Sharing care assumes communication between the Specialist, GP and patient. The intention to share care should be explained to the patient by the doctor or non-medical prescriber (NMP) initiating treatment. It is important that patients are consulted about treatment, are in agreement with it and are able and willing to be accountable for the roles set out in their list of responsibilities.

NB The doctor or NMP who prescribes the medication legally assumes clinical responsibility for the drug and the consequences of its use.

1. HOSPITAL SPECIALIST RESPONSIBILITIES

- Diagnose and select appropriate patients for treatment.
- Discuss the potential benefits and side effects of treatment with the patient.
- Carry out baseline monitoring requirements, communicate to GP and provide treatment for one month.
- Ask the GP whether s/he is willing to participate in shared care and furnish with a copy of this guideline.
- Where a GP is not able to accept clinical responsibility for the patient, the hospital to prescribe.
- Monitor patient's response to therapy and communicate via letter to the GP when treatment is changed.
- Monitor serum phosphate and calcium levels as outlined on page 9 and communicate to GP.
- Monitor the patient for any side-effects to the sevelamer therapy and inform the GP via letter if any occur.
- Advise the GP on when to adjust the dose, stop treatment or consult with specialist.

- Be available to give advice to GP and ensure that clear backup arrangements exist for GPs to obtain advice and support.
- Decide when to stop therapy.
- Specify salt and formulation prescribed in correspondence.
- Report adverse events to the Medicines and Health Products Agency (MHRA), the Commission on Human Medicines (CHM) and the GP.

2. GENERAL PRACTITIONER RESPONSIBILITIES

- Reply to the request for shared care as soon as possible.
- Prescribe sevelamer (specify which salt and formulation on prescription) as recommended by the Hospital Specialist.
- Monitor the patient for any side-effects to sevelamer therapy and refer back to Specialist should any serious side effects occur.
- Adjust the dose as advised by the Specialist.
- Stop treatment on the advice of the Specialist or immediately if an urgent need to stop treatment arises such as bowel obstruction.
- Check for drug interactions before starting new medicines see page 10.
- Report adverse events to the specialist and MHRA/CHM.
- Encourage the patient to use the same Community Pharmacy to ensure continuity of supply and advice.

3. PATIENT'S ROLE

- Take the sevelamer as prescribed.
- Report to the Specialist or GP if s/he does not have a clear understanding of the treatment.
- Where possible, always use the same Community Pharmacy to ensure continuity of supply and advice. Provide a copy of the Shared Care Guideline (SCG) to your chosen Community Pharmacist.
- Share any concerns in relation to treatment with sevelamer with the Specialist or GP.
- Inform Specialist, or GP, of any other medication being taken, including over-the-counter products.
- Report any adverse effects or warning symptoms to the specialist or GP whilst taking sevelamer and complete a yellow card for the MHRA/CHM.
- Discuss the use of any newly prescribed medication with the GP before starting it, and any non-prescribed medication with the Community Pharmacist before taking it. Inform the Pharmacist that s/he is on sevelamer before purchasing any over-the-counter medication.

4. COMMUNITY PHARMACIST'S ROLE

- Encourage the patient to use the same Community Pharmacy to ensure continuity of supply and advice.
- Order and dispense the sevelamer – clarify with the prescriber which salt and formulation is required if not specified.
- Inform the patient / carer how long it takes to order and if there are any supply problems.
- Inform hospital pharmacy if there are any long term supply problems.
- Provide medicines advice to patient / carer as necessary.
- Any problems with supply, phone:
    - Genzyme (sevelamer) 01865 405316.

5. CONTACT NUMBERS

Specialist	Designation	Contact Number
Nephrology secretaries to:		
Prof Farrington/ Dr Vilar	Consultant Nephrologists	01438
Dr Thompson/Dr Greenwood	Consultant Nephrologists	284230
Dr Chadna	Consultant Nephrologist	01438
Dr Suresh	Consultant Nephrologist	284309
Clare Morlidge	Renal Pharmacist	01438 284677 or 01438 314333 bleep 0931
Gail Franklin Lize Jansen van Rensburg Sara Gray	Renal Dietitians	01438 284947 Pager 07659183135 Mobile 07557150301
Hospital Pharmacy Department		01438 284032
Hospital Switchboard		01438 314333

Outside normal working hours there is access to a Consultant Nephrologist via the hospital switchboard

Part Two: Supporting Information

1. BACKGROUND

Disturbance of mineral metabolism is a common complication associated with chronic kidney disease (CKD). As renal function declines parathyroid hormone levels start to rise, this is driven by a fall in calcitriol production, hypocalcaemia and hyperphosphataemia.

The management of hyperphosphataemia is crucial, and is one of the most important factors in the development of secondary hyperparathyroidism (SHPT). SHPT contributes significantly to the high incidence of morbidity and mortality seen in people with CKD. The management of hyperphosphataemia involves dietary restriction of phosphate, the use of oral phosphate binders and adequate dialysis (CKD stage 5). Available data and opinion suggests that dietary phosphate restriction should be initiated when parathyroid hormone levels start to rise, and/or when serum phosphate levels are elevated. As dietary restriction alone is unlikely to control serum phosphate levels in CKD stage 4 and 5, phosphate binders will be required.

Phosphate binders are indicated for the control of hyperphosphataemia in adult patients with chronic kidney disease. A number of phosphate binders are available which may be used in the context of a multiple therapeutic approach, and these include calcium carbonate (Calcichew®), calcium acetate (PhosLo®), aluminium hydroxide (Alucaps®), sevelamer hydrochloride (Renagel®), sevelamer carbonate (Renvela®) and lanthanum (Fosrenol®). These products may be used in combination with 1α-hydroxycholecalciferol (alfacalcidol) or one of its analogues or cinacalcet to control the development of renal bone disease.

NICE guideline CG157 March 2013 recommends the use of the calcium-based phosphate binder calcium acetate as the initial binder therapy for patients with chronic kidney disease, in conjunction with dietary phosphorous restriction, to control phosphorus and parathyroid levels. If patients are unable to tolerate calcium acetate, calcium carbonate may be used. If hypercalcaemia develops with the use of calcium based binders, it may be necessary to convert to a non calcium-containing phosphate binder, or to use a combination of both. Aluminium-based phosphate binders are used for short-term therapy due to the risks of accumulation.

Phosphate levels to be aimed for are, 0·9 – 1·5mmol/l in CKD stage 4, 1·1 – 1·7mmol/l CKD stage 5 and patients on dialysis (NICE CG157).

For patients on haemodialysis corrected calcium and phosphate are monitored monthly. For non-haemodialysis patients, corrected calcium and phosphate are monitored at each clinic visit, and more frequently if there are concerns.

Adapted from the Renal Department Clinical Practice Guideline for the Management of Chronic Kidney Disease, Mineral and Bone Disorder (CKD-MBD).

2. LICENSED INDICATIONS

Sevelamer hydrochloride (Renagel®) is indicated for the control of hyperphosphataemia in adult patients receiving haemodialysis or peritoneal dialysis. Sevelamer carbonate (Renvela®) is licensed for use in all patients with chronic kidney disease. Sevelamer should be used within the context of a multiple therapeutic approach, which could include calcium based phosphate binders, 1α-hydroxycholecalciferol or one of its analogues to control the development of renal bone disease.

3. DOSAGE AND ADMINISTRATION

Sevelamer hydrochloride and carbonate are both available as 800mg tablets. For patients who are not on phosphate binders dosage is determined individually based on serum phosphate concentrations (refer to the Summary of Product Characteristics (SPC) for further details).

If the dose is to replace an existing phosphate binder treatment then it should be calculated on an equivalent mg weight basis compared with the patient's previous calcium-based phosphate binder.

Patients should take sevelamer with meals and adhere to their dietary advice.

The usual starting dose is 2·4g or 4·8g, daily taken as three or more divided doses with meals and snacks. Tablets should be swallowed whole not chewed.

Sevelamer carbonate (Renvela®) is also available as a 2·4g powder for suspension for those who have difficulty swallowing tablets.

4. CONTRAINDICATIONS

Sevelamer is contraindicated in patients with:

- **hypo**phosphataemia
- bowel obstruction

It is not recommended in pregnancy or lactation.

It is cautioned for use in patients with swallowing difficulties or acute inflammatory bowel disease.

5. THERAPEUTIC USE

Its use will be targeted at two groups of renal patients:

- Patients who are currently intolerant of calcium containing phosphate-binders, or who develop unacceptable hypercalcaemia.
- Patients who require very large doses of elemental calcium or who are at high risk of ectopic calcification or have evidence of clinical problems already attributable to this (eg peripheral infarction due to calcific uraemic arteriolopathy or coronary calcification).

Sevelamer carbonate is the **first line** non-calcium containing phosphate binder of choice for the Department of Renal Medicine East & North Herts NHS Trust.

Sevelamer hydrochloride is used for patients started on sevelamer prior to 2011.

For patients who are not on phosphate binders, dosage is determined individually based on serum phosphate concentration as indicated in the table below:

Serum phosphate level in patients not on phosphate binders	Starting does of sevelamer 800 mg tablets
1·76 – 2·42 mmol/l (5·5 – 7·5 mg/dl)	3 tablets per day
> 2·42 mmol/l >7·5 mg/dl)	6 tablets per day

If sevelamer is prescribed as an alternative phosphate binder, it should be given in equivalent doses on a mg weight basis compared to the patient's previous calcium based phosphate binder.

Serum phosphate levels should be closely monitored and the dose of sevelamer adjusted accordingly with the goal of lowering serum phosphate to 1·76 mmol/l (5·5 mg/dl) or less. Serum phosphate should be tested every two to three weeks until a stable serum phosphate level is reached, and on a regular basis thereafter.

The dose range may vary between 1 and 5 tablets (of 800 mg each) per meal. The average actual daily dose used in the chronic phase of a one year clinical study was 7 grams of sevelamer.

Patients should take sevelamer with meals and adhere to their prescribed diets. The tablets must be swallowed whole and **should not** be chewed.

6. SIDE EFFECTS

In trials, the most common adverse effects were gastrointestinal events. The SPC states that the following have been reported in 1 – 10% of patients (but were not necessarily attributable to sevelamer treatment): abdominal pain, diarrhoea, nausea, vomiting, dyspepsia, constipation, infection, headache, respiratory disorder, cough, hypotension, dizziness, dyspnoea, thrombosis, peripheral oedema, chest pain, abdominal pain, fever, leg cramps, hypertension and pruritus.

The SPC states that the following have been reported in between 1 and 10 patients in every 100: flatulence, rash, pharyngitis.

A very rare side effect is intestinal obstruction (likely to occur in fewer than 1 in 10,000 patients).

7. MONITORING

The SPC recommends monitoring levels of serum phosphorus, calcium, as well as vitamins A, D, E and K as a deficiency in one or more of these may develop in dialysed patients. Many haemodialysis patients will be treated with vitamin D and calcium supplements.

Once on established therapy the Hospital Renal Unit will carry out:

- Monthly serum phosphate and calcium levels **AND**
- 3 monthly serum iParathyroid Hormone levels

Predialysis patients will have their phosphate levels monitored at each clinic visit and more frequently if there are any issues.

8. DRUG INTERACTIONS

Sevelamer reduces the bioavailability of ciprofloxacin by up to 50% so should not be taken concurrently.

Sevelamer possibly reduces plasma concentration of mycophenolate, ciclosporin and tacrolimus - administer at least one hour before or three hours after sevelamer.

For further information see:

- The BNF at www.bnf.org/bnf **OR**
- Summary of product characteristics at www.medicines.org.uk.

9. COST

At current prices one year's sevelamer treatment (6 tablets of 800 mg daily) costs £2032 (incl VAT), Renvela® or Renagel® brands, tablets and sachets equivalent costs (www.medicines.org.uk May 2014).

The patent for sevelamer expired in January 2015, so it is likely that the price will reduce once generics are on the market.

10. REFERENCES

- Genzyme therapeutics. Renagel 800mg film-coated tablets. Summary of Product Characteristics 2014. *www.medicines.org.uk*
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