Oxford University Hospitals and Oxfordshire Clinical Commissioning Group
Shared Care Protocol and Information for GPs

Lanthanum carbonate (Fosrenol)

This leaflet provides the necessary information and guidance for the shared care of adult patients requiring Lanthanum carbonate therapy

Summary

- Lanthanum carbonate is a non-calcium and aluminium-free phosphate binding agent that binds with dietary phosphate in the gut to form lanthanum carbonate phosphate which is not absorbed, reducing the absorption of dietary phosphorus and lead to significant reductions in serum phosphorus levels.
- Although effective and generally well tolerated, the use of lanthanum carbonate may be restricted by the relatively high drug costs.
- Any protocol must ensure that hyperphosphataemia caused by non-compliance with a calcium or aluminum based binder is not replaced by non-compliance with lanthanum carbonate.

Background

- Hyperphosphataemia affects the majority of patients with chronic renal failure and leads to secondary hyperparathyroidism, renal osteodystrophy and soft tissue calcification. It is associated with increased morbidity and mortality among end stage renal disease and dialysis patients.
- Hyperphosphataemia is an inevitable development in dialysis patients and is one of the most important factors in the development of secondary hyperparathyroidism and soft tissue calcification.
- Current therapeutic strategies such as increased dialysis, dietary restriction and calcium and aluminium based phosphate-binding agents have their limitations
- ***It is proposed that a calcium based binding agent is used first line***. ***Lanthanum carbonate will be restricted for selected patients with high phosphate and either:***

➢ Tertiary hyperparathyroidism or adynamic bones where use of a calcium based binder is limited by development of hypercalcaemia, or

➢ Secondary hyperparathyroidism requiring an increased dose of vitamin D_3

Indications

- Prescriptions for lanthanum carbonate will be ***recommended by renal consultants only.***
- Lanthanum carbonate is licensed for the control of hyperphosphataemia in chronic renal failure patients (CKD 5), patients on haemodialysis or continuous ambulatory peritoneal dialysis (CAPD).
- Lanthanum carbonate will be indicated for selected patients only for the following indications:

➢ To avoid maintenance of aluminium hydoxide (where other options exhausted)
➢ Prevention of hypercalcaemia or high calcium x phosphate product when dialysate calcium adjustment cannot safely normalise calcium
➢ Appearance of clinical complications of high calcium x phosphate product (such as calciphylaxis or calcific uraemic arteriolopathy)
➢ Patients who have medical contraindications to transplantation or who do not wish it, and therefore destined to suffer long-term exposure to phosphate binders
➢ Young renal failure patients who during the course of their lives may otherwise accumulate several years of phosphate binder derived calcium loading
➢ Premature development of cardiovascular disease

Dose and Administration

- Lanthanum carbonate is supplied as chewable tablets for oral administration containing 500 mg, 750 mg or 1000 mg of lanthanum carbonate.
- Dosage is based on serum phosphate levels.
- The initial recommended dose of lanthanum carbonate is 750mg taken with meals and large snacks.
- The dose should be titrated against serum phosphate levels every 4 weeks. The usual maintenance dose is 1500-4500mg per day.
- Tablets must be chewed slowly before swallowing and be taken during or towards end of meal. If patients are unable to chew the tablets then they can be crushed into a powder and sprinkled onto the last few mouthfuls of food. Antacids should not be taken at the same time as lanthanum carbonate because they will reduce the oral bioavailability of the drug.

Adverse effects

- The main adverse effects include nausea, vomiting and dyspepsia; dyspnoea, abdominal pain, chest pain and headache.
- Lanthanum carbonate has been associated with fewer calcium related side effects than standard therapy but does not appear to be better tolerated than calcium carbonate.
- ***Very common (>10%):*** Abdominal pain, constipation, diarrhoea, flatulence, nausea and vomiting.
- ***Common (>1%):*** Hypocalcaemia
- All should be reported to the Consultant for advice.

Contra-indications/Cautions

- Patients with the following conditions were excluded from clinical studies and lanthanum carbonate should be used with caution in these patients: acute peptic ulcer, ulcerative colitis, Crohn's disease, bowel obstruction.
- Lanthanum carbonate may also cause a radio-opaque appearance similar to an imaging agent on abdominal x-rays
- Patients with hepatic impairment should be monitored carefully. Routine monitoring of live function may be necessary.

Pregnancy and lactation (if appropriate)

- No adequate and well controlled studies have been carried out in pregnancy.
- It is not currently known if lanthanum carbonate is excreted in breast milk.

Drug and Food interactions (refer also to BNF or SPC; include significance of interaction)

Lanthanum carbonate should be taken with or immediately after food, with the daily dose divided between meals. A summary of interactions is shown below:

Substance	**Interaction**
Compounds known to interact with antacids	Lanthanum hydrate may increase gastric pH. It is recommended that compounds, which are known to interact with antacids, should not be taken within 2 hours of dosing with lanthanum carbonate (e.g. chloroquine, hydroxychloroquine and ketoconazole).

Tetracycline, doxycycline & floxacins	Interactions are theoretically possible and if these compounds are to be co-administered, it is recommended that they not be taken within 2 hours of dosing with lanthanum carbonate

Monitoring

- The British Renal Association 2010 recommends a target range for serum phosphate in adults of 1.1 - 1.7mmol/L (3.7-5.2mg/dl) for haemodialysis patients, 1.1-1.6mmol/L (3.3-4.9mg/dL) for peritoneal dialysis patients and 0.9-1.5mmol/L for CKD 5 patients.

- ***All monitoring and dose adjustments will be carried out by renal unit staff***

- Patients with hepatic impairment should be monitored carefully. Routine monitoring of liver function may be necessary.

Patient information leaflet

Patients should be supplied with an information leaflet from the manufacturer and/or the hospital team.

Shared Care Responsibilities

Shared care assumes communication between the specialist, GP and patient. The intention to share care should be explained to the patient and accepted by them. Patients should be under regular follow-up which provides an opportunity to discuss drug therapy.

a) Aspects of care for which the Hospital Consultant is responsible:

- Prescribe lanthanum carbonate for the first 28 days or longer if needed until patient stabilized on a maintenance dose and dose adjustments completed and tolerability established.
- Write to the GP requesting shared care and outline shared care protocol criteria.
- Liaise with GP regarding changes in disease management, drug dose, and missed clinic appointments.
- Ensure clinical supervision of the patient is done by follow-up as appropriate.
- Ensure the patient understands the nature and complications of drug therapy and their role in reporting adverse effects promptly.
- Provide clear instruction to GP on when therapy needs to be referred back to specialist.
- Be available to give advice to GP and patient.

b) Aspects of care for which the GP is responsible:

- Prescribe lanthanum, after one month consultant prescribing, once patient tolerability has been demonstrated and the maintenance dose established.
- Advise the Hospital Consultant of any clinical changes or adverse effects where appropriate.
- Monitor for adverse effects as detailed above.

c) Aspects of care for which the Patient is responsible:

- Report any adverse effects to their GP and/or consultant
- Attend for regular monitoring as outlined in patient information leaflet.

Contact Details

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