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Liothyronine

Endocrinology Shared Care Guideline

Specialist Details	Patient Identifier
Name: _____	
Location: _____	
Tel: _____	**Date:** _____

Introduction

Indication: Management of hypothyroidism in combination with levothyroxine
The British Thyroid Association and the NI formulary do not support the routine use of oral liothyronine for the management of hypothyroidism. The British Thyroid Association suggests the following; 'for some patients with confirmed overt hypothyroidism and persistent symptoms who have had adequate treatment with levothyroxine and in whom other comorbidities have been excluded, a trial of liothyronine/levothyroxine combined therapy may be warranted. The decision to start treatment with liothyronine should be a shared decision between patient and clinician. However, individual clinicians should not feel obliged to start liothyronine or to continue liothyronine medication provided by other health care practitioners or accessed without medical advice, if they judge this not to be in the patient's best interest. A minimum of 3–6 months of liothyronine/levothyroxine combination therapy while maintaining a TSH level within reference range, should be considered before determining the response to a trial. Treatment should be stopped if no subjective benefits'

Indication: Management of hypothyroidism, in patients being treated for thyroid cancer, who have undergone thyroidectomy and are to receive radioiodine remnant ablation (RRA) or Iodine therapy
Liothyronine monotherapy is a treatment option and is usually taken for 2 weeks, 14 to 28 days prior to RRA or Iodine therapy. Rarely, it may be used long term in selected patients. Monitoring is not required and a standard dose of 20 microgram three times a day is given with no dose adjustments. Hence the advice contained within this guideline on monitoring and dose adjustments do not apply.

Adult dosage and administration

The specialist will advise on the dose regimen for each specific patient. As a guide if a decision is made to embark on a trial of liothyronine and levothyroxine combination therapy a suggested dose regimen is 1 microgram of liothyronine for every 17 micrograms of levothyroxine (British Thyroid Association), within the practical limits of the available dosage forms. If possible liothyronine should be given in 2 divided doses, before breakfast and before bed. (Levothyroxine should continue to be given once a day, and a dose reduction of 3 times the liothyronine dose is usually recommended, within the practical limits of the available dosage forms.

Monitoring Section
After initiation of therapy thyroid stimulating hormone (TSH), free T4 and free T3 should be monitored 6–8 weekly and the dose of liothyronine should be adjusted until a stable TSH is achieved, after which TSH can be checked 4–6 monthly, and then annually.

Available as: Liothyronine 5, 10 and 20 microgram capsules and tablets. Capsules are the preferred form due to cost effectiveness. For further information refer to SPPG letter Liothyronine prescribing: choice of formulation – Primary Care Intranet (hscni.net)

Hospital specialist responsibilities

- Assess if the patient is suitable for treatment with liothyronine.
- Arrange shared care with the patient's GP.
- Carry out a baseline ECG if indicated.
- Provide patient/carer with information on use, side-effects and need for monitoring of medication.
- Advise GP of frequency of TSH, free T4 and free T3 monitoring.
- Adjust the dose where necessary and advise the GP accordingly.
- Review results of safety monitoring and request additional tests as required.
- Monitor response to treatment and need to continue therapy.
- Continue to review the patient at agreed specified intervals, sending a written summary to the GP whenever the patient is reviewed.
- Provide any other advice or information for the GP if required.
- Discontinue if no improvement after 3-6 months.

GP responsibilities

- Prescribe liothyronine; continued prescribing is appropriate for patients attending regular review.
- Monitor TSH, free T4 and free T3 as advised by the specialist, ensuring practice systems are in place to recall patients for blood tests. Communicate results of monitoring to the specialist.
- Adjust the dose as advised by the specialist.
- Report adverse drug reactions to initiating specialist and usual bodies (e.g. CHM, MHRA).
- Ensure no significant drug interactions with other medicines.

Adverse effects, precautions and contraindications

Contraindications include: Thyrotoxicosis

Caution advised with: Cardiovascular disorders, diabetes insipidus, diabetes mellitus, elderly, hypertension, long-standing hypothyroidism, myocardial infarction, myocardial insufficiency, pan hypopituitarism, predisposition to adrenal insufficiency.

Reported side effects: Angina pectoris; anxiety; arrhythmias; diarrhoea; fever; flushing; headache; hyperhidrosis; insomnia; muscle cramps; muscle weakness; palpitations; tremor; vomiting; weight decreased; heat intolerance.

Pre-existing cardiovascular disorders: If metabolism increases too rapidly (causing diarrhoea, nervousness, rapid pulse, insomnia, tremors and sometimes anginal pain where there is latent myocardial ischaemia), reduce dose or withhold for 1–2 days and start again at a lower dose.

Pregnancy: Safety during pregnancy is not known. It does not cross the placenta in significant amounts, which will impact on thyroid hormone exposure in the foetus in hypothyroid mothers treated with liothyronine. Specialist advice is needed for these patients.

Breast feeding: Considered safe in breastfeeding.

Common drug interactions

Use liothyronine with caution in association with: warfarin, phenindione and acenocoumarol (may enhance anticoagulant effect); amitriptyline, imipramine and possibly other tricyclic antidepressants (liothyronine may enhance their effect); carbamazepine, fosphenytoin, phenobarbital, phenytoin and primidone (may increase requirements for thyroid hormones in hypothyroidism); oestrogens, including the combined oral contraceptive (may increase requirements for thyroid hormones in hypothyroidism); amiodarone; digoxin (may require dose adjustment of digoxin); bulveritide (may increase exposure to liothyronine); lanthanum (decreases absorption of liothyronine, separate administration by 2 hours).

Communication

For any queries relating to this patient's treatment with liothyronine, please contact the specialist named at the top of this document.

This information is not inclusive of all prescribing information and potential adverse effects.
Please refer to full prescribing data in the SPC or the BNF

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