East & North Hertfordshire NHS Trust (ENHT) and NHS East & North Hertfordshire Clinical Commissioning Group (ENHCCG)

Position Statement on the prescribing of Liothyronine January 2020

This document was produced in response to the consultation process by NHS England on prescription of Liothyronine (L-T3) in primary care and HMMC recommendations. In support of this proposal we refer to the British Thyroid Association (BTA) 2015 position statement on the management of hypothyroidism https://www.british-thyroid-association.org/sandbox/bta2016/bta_statement_on_the_management_of_primary_hypothyroidism.pdf and the 2019 NICE Guidance for assessment and management of thyroid disease [NG145] https://www.nice.org.uk/guidance/ng145.

This document is to provide local guidance with an aim to reduce the unnecessary usage and prescription of L-T3 by supporting primary care physicians and teams. Please note that this edict comes from NHS England Guidance on Items which should not be routinely prescribed in primary care www.england.nhs.uk/medicines/items-which-should-not-be-routinely-prescribed/. Liothyronine was included in this guidance due to the significant costs associated with liothyronine and the limited evidence to support its routine prescribing in preference to levothyroxine.

Cost Comparison

There is a significant cost difference between thyroid hormone replacement products. Levothyroxine costs between £1-3 and liothyronine 20mcg tablets cost ~£165 for 28 tablets (unlicensed 'specials' may be even more expensive). See subsequent information for suggested equivalence.

Cost Comparison (January 2020)

Formulation and Strength	28 tablets (January 20 Drug Tariff)
Levothyroxine 12.5 microgram tablets	£1.74
Levothyroxine 25 microgram tablets	£1.59
Levothyroxine 50 microgram tablets	£1.19
Levothyroxine 75 microgram tablets	£2.61
Levothyroxine 100 microgram tablets	£1.18
Liothyronine 20 microgram tablets	£165.18

Position statement on use of L-T3 as monotherapy and with L-T4 in combination therapy

1. Levothyroxine (L-T4) is the standard of care in hypothyroidism, being effective and well-tolerated in the clear majority of patients.
2. There is insufficient evidence to show that combination therapy with L-T4 and L-T3 is superior to L-T4, however in a small proportion of patients with persistent symptoms despite a 6-month trial of L-T4 with results in the normal range, a carefully monitored trial of combination therapy may occasionally be warranted.
3. Combination therapy with L-T3 and L-T4 should ONLY be initiated and supervised by accredited endocrinologists, after an adequate trial of L-T4.
4. L-T3 monotherapy is not recommended in the management of hypothyroidism with the exception of some cases of thyroid cancer (see below) when the supply will be made from secondary care.

Guidance on the management of patients who are currently on either L-T3 monotherapy, or L-T3 and L-T4 combination therapy

1. In patients on combination L-T4 and L-T3 therapy, changing to L-T4 should be considered **in all cases**. If there is persistent and verified symptomatic benefit **and** normal TFTs on combination therapy it may be appropriate to continue combination L-T4 and L-T3 therapy.
2. Any information about previous L-T4 dosage that achieved a serum TSH within the reference range will be a useful guide to prediction of individual requirement.
3. In patients where it is agreed to switch from combined L-T3 and L-T4 treatment **or** from L-T3 monotherapy to L-T4 monotherapy, the speed of transition should be agreed with the patient. It is possible to directly swap combined L-T3 and L-T4 to L-T4 alone, but some patients prefer a gradual Reduction in L-T3 with simultaneous introduction of increasing amounts of L-T4 is recommended. **Suggested equivalence is 10mcg L-T3 = 50mcg L-T4**.
   10mcg L-T3 is given by halving the 20mcg L-T3 tablets (halving L-T3 tablets is unlicensed but is routine practice throughout the UK). Alternatively one can dissolve a tablet in water and take half the volume. Changes should be made according to latest TFTs. Blood tests should be taken prior to morning medication. Assessment of clinical and biochemical thyroid status every six weeks is recommended until stability is reached.

For example, to transition a patient on 50mcg L-T4 daily and 20mcg L-T3 twice daily to 250mcg L-T4 daily only:

	L-T4 dose	L-T3 dose
Starting dose (assuming normal TFTs)	50mcg daily	20mcg twice daily
Weeks 1-6	150mcg daily	10mcg twice daily
Bloods at week 6-8		
After bloods available, assuming TFTs stable	250mcg daily	no L-T3
Bloods 6-8 weeks after change		

Patients initiated on L-T3 by other specialists should be referred back to these physicians for review with a copy of this guidance. Use for mental health purposes is not supported by the formulary or used by our local mental health services, so these patients should be referred back to the mental health service for the specialist to consider alternative treatments.

Secondary care referral for further guidance on the management of patients on L-T3 monotherapy or L-T3 and L-T4 combination therapy

1. Conversion of patients from L-T3 to L-T4 should be trialled initially in primary care using guidance as detailed above.
2. If a specialist opinion is required then the referral should be to the physician who **originally initiated** L-T3 (wherever possible). This provides continuity, avoids unnecessary duplication and investigation with the aim of reviewing the use of L-T3 and/or rationalising original decision making. Patients initiated on L-T3 in the private sector should be referred back to the original consultant (wherever possible) with the clear instruction that any further L-T3 prescribing should be done privately and not by primary care. If this is not possible then the patient is likely to need to be referred back to NHS secondary care - **please forward all relevant correspondence.**

3. If patients are referred to ENHT then the reason for the referral must be made plain to the patient and the referral MUST include details regarding when L-T3 was commenced, by whom, the clinical rationale and the reasons for considering discontinuation after having followed guidance set out in this document.

Prescribing of L-T3

1. For those patients newly commenced on L-T3 therapy by ENHT Department of Endocrinology, after 1st January 2018, the prescribing will continue at ENHT.
2. If after review of a patient at ENHT for whom L-T3 was prescribed elsewhere, it is established that continued L-T3 usage is appropriate, then the ongoing prescribing responsibility will remain in primary care. (The consultant must specifically define the reason why the patient shouldn't undergo a trial titration to levothyroxine and communicate this to the GP).

IMPORTANT - Special circumstances/considerations

1. In patients with a diagnosis of thyroid cancer, where L-T3 is recommended in preparation for radioiodine ablation, radioiodine therapy, diagnostic scanning or further investigation, L-T3 therapy is essential and substitution to L-T4 is completely inappropriate. Supplies for these patients are short-term and come from secondary care.
2. Patients on L-T3 monotherapy with a history of liver damage caused by L-T4 will need to remain on L-T3.
3. Combination therapy is not recommended in pregnancy – this should therefore form the basis of an initial discussion with regards to conversion to L-T4 monotherapy with the patient if they are of child-bearing potential.
4. Particular caution should be used for patients on L-T3 if they are aged >60yrs, or of any age with known ischaemic heart disease.

References

- Okosiemi, O, Gilbert J, Abraham P et al. Management of primary hypothyroidism: statement by the British Thyroid Association Executive Committee. Clinical Endocrinology 2015; 0:1-10. http://onlinelibrary.wiley.com/doi/10.1111/cen.12824/epdf
- NICE Guidance [NG145] - Thyroid disease: assessment and management https://www.nice.org.uk/guidance/ng145
- Regional medicines Optimisation Committee (RMOC) 2019. Guidance- Prescribing of Liothyronine. https://www.sps.nhs.uk/wp-content/uploads/2018/11/RMOC-Liothyronine-Guidance-v2.0-final-1.pdf
- Hertfordshire Medicines Management Committee, Liothyronine recommendations, March 2018 https://www.enhertsccg.nhs.uk/sites/default/files/content_files/Prescribing/Local_Decisions/Endocrine_system/Liothyronine%20for%20hypothyroidism.pdf
- PrescQIPP bulletin 121. Switching liothyronine (L-T3) to levothyroxine (L-T4) in the management of primary hypothyroidism. https://www.prescqipp.info/
- Drug Tariff January 2020 https://www.nhsbsa.nhs.uk/pharmacies-gp-practices-and-appliance-contractors/drug-tariff

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