NHS North Cumbria Clinical Commissioning Group

Prescribing Guideline for Liothyronine for a selected cohort of adults with Hypothyroidism (GP Summary)

It is essential that a request for transfer of care only takes place with agreement of the GP and when sufficient information has been received. If the GP does not agree with this they will inform the Consultant responsible for the patient's care.

North Cumbria Medicines Optimisation Committee

Specialist Contact Details	**Patient ID Label**
Name:_____	**Surname:**_____
Location:_____	**Forename:**_____
Date:_____	**NHS Number:**_____
Tel:_____	**Date of Birth:**_____

Indications	Combination levothyroxine / liothyronine should not be used *routinely* in the management of hypothyroidism as there is insufficient population based clinical evidence to show that combination therapy is superior to levothyroxine monotherapy. As part of the overall holistic management of patients with hypothyroidism, NHS consultant endocrinologists may start a trial of combination levothyroxine and liothyronine in circumstances where all other treatment options have been exhausted. 1. Where symptoms of hypothyroidism persist despite optimal dosage with levothyroxine. (TSH 0.4-1.5mU/L) 2. Where alternative causes of symptoms have been excluded, *see box 1 below*.
Exclusions	1. Patients with thyroid cancer who need liothyronine as part of their investigation and treatment will remain under the specialist care. 2. Women who are planning pregnancy who are taking liothyronine should remain under specialist care as it is not recommended in pregnancy. 3. In rare cases where liothyronine is used for resistant depression, therapy should be supervised by a consultant psychiatrist. *This is off licence and not approved locally*.
Dose & response	**Liothyronine is only prescribed as part of a combination treatment with levothyroxine** When liothyronine is commenced a reduction in levothyroxine dose will be required. Specialists should individualise approach to dose changes, however typically, for every 10microgram of liothyronine (half tablet of 20microgram preparation) the levothyroxine dose should be reduced by 50micrograms. levothyroxine 125microgram each morning would become 75microgram levothyroxine each morning and 10microgram liothyronine each morning). Response is assessed via pre and post symptom scoring or quality of life questionnaire.
Specialist responsibilities	1. To ensure the patient fulfils the criteria for treatment. 2. To ensure that all alternative causes of symptoms have been excluded. 3. To prescribe, monitor and assess response biochemically and assess physical and psychological wellbeing by use of a suitable Quality of Life questionnaire. After at least 3 months of treatment and until treatment dose is stabilised.
GP responsibilities	**Key roles to be undertaken in primary care once a decision to take on the prescribing is made** 1. To agree to prescribe liothyronine in line with the prescribing guideline once a stable dosing regimen has been determined by specialist care. 2. Ensure no drug interactions with concomitant medicines that are added at a later time. 3. Monitor biochemistry periodically as recommended by the specialist. 4. Report to and seek advice from the specialist on any aspect of patient care, which is of concern and may affect treatment. 5. Report adverse events to the MHRA on a Yellow Card www.mhra.gov.uk/yellowcard and to the specialist.
Primary care monitoring	• Initial biochemical monitoring will be undertaken by the specialist until a regimen is established • Monitoring is by TSH levels measured from blood tests taken **prior** to the morning medication. • Initially and following a dose change a repeat test will be required at 6-8weeks. After dose stabilisation, monitoring should only be required annually unless there is a change in symptoms that may warrant the checking of TSH levels. The aim of the treatment is to maintain TSH of 0.4-2.5mU/L with theT3 and T4 in the normal range.

Actions to be taken in response to monitoring	

TSH Level	Action for GPs
More than 5 mU/L	Increase levothyroxine dose by 25microgram
0.4 – 5.0 mU/L	No change required
Less than 0.4 mU/L	Seek specialist advice, likely resume at lower dose.

Contra-indications

Liothyronine is contraindicated in: (Discuss with NHS Endocrinologist)

- Known hypersensitivity to the drug or any of its excipients
- Thyrotoxicosis
- Cardiac arrhythmias
- Angina
- Pregnancy

Cautions

Use with caution in patients with:

- Ischaemic heart disease: any new presentation or significant worsening of existing ischaemic heart disease should be discussed with the specialist endocrinology team.
- Breast feeding: an increase in monitoring of thyroid function tests may be required, discuss with specialist endocrinology team.

Important adverse effects & management

Specialist to detail below the action to be taken upon occurrence of a particular adverse event as appropriate. Most serious toxicity is seen with long-term use and may therefore present first to GPs.

Adverse Event	Action to be taken	By whom
Angina, arrhythmia	Stop Liothyronine, check TSH	GP
Other symptoms of excessive dose: Palpitations, restlessness, tremor, diarrhoea, headache, muscle cramps	Continue liothyronine, check TSH	GP

Box 1: Some possible causes of persistent symptoms in euthyroid patients on levothyroxine T4:

Endocrine / autoimmune	Haematological	End organ damage	Nutritional	Metabolic	Drugs	Lifestyle	Other
Diabetes mellitus Adrenal insufficiency Hypopituitarism Coeliac disease Pernicious anaemia	Anaemia Multiple myeloma	Chronic liver disease Chronic kidney disease Congestive cardiac failure	Deficiency of any of the following: Vitamin B12 Folate Vitamin D Iron	Obesity Hypercalcaemia Electrolyte imbalance	Beta-blockers Statins Opiates	Stressful life events Poor sleep pattern Work-related exhaustion Alcohol excess	Obstructive sleep apnoea Viral and postviral syndromes Chronic fatigue syndrome Carbon monoxide poisoning Depression and anxiety Polymyalgia rheumatic Fibromyalgia

The manufacturer's summary of product characteristics (SPC) and the most current edition of the British National Formulary should be consulted for full information on contraindications, warnings, side effects and drug interactions.

References

1. Summary of product characteristics for Liothyronine
2. British National Formulary January 2018.
3. Wiersinga W, M, Duntas L, Fadeyev V, Nygaard B, Vanderpump M, P, J, 2012 ETA Guidelines: The Use of L-T4 + L-T3 in the Treatment of Hypothyroidism. Eur Thyroid J 2012;1:55-71
4. Okosieme, Gilbert J, Abraham P, et al. Management of primary hypothyroidism: statement by the British Thyroid Association Executive Committee. Clin Endocrinol (Oxf). 2016;84):799-808.