

**NHS Shropshire Clinical Commissioning Group Commissioning Policy:
Prescribing of liothyronine (tri-iodothyronine) either alone or in combination
with levothyroxine (e.g. Armour® thyroid) for the treatment of hypothyroidism.**

Policy statement:

NHS Shropshire Clinical Commissioning Group (CCG) does not routinely commission the prescribing of liothyronine for the treatment of hypothyroidism.

Treatment with liothyronine prescribed either alone or as part of a combination product (e.g. Armour® thyroid) will not normally be funded.

Background

The replacement therapy of choice for hypothyroidism is levothyroxine (T4). Levothyroxine is given once a day and is converted to triiodothyronine in peripheral tissues, providing stable and physiological quantities. Liothyronine (T3) has a much shorter half-life (1 day vs. 6 days) and steady state levels cannot be maintained with once daily dosing.¹ Before the 1970s, synthetic combinations of levothyroxine and liothyronine or desiccated animal thyroid containing varying amounts of thyroid hormones were used, but these have now been replaced with the use of levothyroxine monotherapy.¹

Armour® Thyroid tablets are made from desiccated porcine thyroid glands. The amount of hormone in the thyroid gland varies from animal to animal but Armour® Thyroid contains standard amounts of levothyroxine and liothyronine according to United States Pharmacopoeia (USP) standards and specifications. Armour® Thyroid is licensed in the US; there is no licensed product available in the UK although it can be ordered via importing companies.¹

Rationale for the Decision

A combination of levothyroxine and liothyronine, in both non- and physiological proportions, has not consistently been shown to be more beneficial than levothyroxine alone with respect to cognitive function, social functioning and wellbeing. The variation in hormonal content and large amounts of liothyronine may lead to increased serum concentrations of T3 and symptoms of thyrotoxicity, such as palpitations and tremor. Whilst it is possible that some patients might benefit from the use of combination treatment, the parameters identifying such a patient group have yet to be clearly identified. Furthermore the majority of the trials used non-physiological ratios of levothyroxine to liothyronine, which can lead to over-replacement.¹

In 2015 the British Thyroid Association (BTA), issued a position statement “*There is no convincing evidence to support routine use of thyroid extracts, L-T3 monotherapy, compounded thyroid hormones, iodine containing preparations, dietary supplementation and over the counter preparations in the management of hypothyroidism*”.²

Liothyronine has been listed by NHS England as a drug which should not be routinely prescribed in Primary Care, as there is insufficient evidence of either clinical or cost-effectiveness to support its use. NHS England advises that:

- Prescribers in Primary Care should not initiate liothyronine for any new patient.

- Individuals currently prescribed liothyronine should be reviewed by a consultant NHS endocrinologist with consideration given to switching to levothyroxine where clinically appropriate.³

The BTA advise that a small proportion of patients treated with levothyroxine continue to suffer with symptoms despite adequate biochemical correction. Where, in exceptional circumstances, individuals may have an on-going need for liothyronine, endocrinologists providing NHS services may prescribe liothyronine for individual patients for a carefully audited trial of at least 3 months duration. This will not be funded by the CCG as liothyronine is not a PbR excluded drug. If an on-going need for liothyronine is identified at the conclusion of the trial a funding request, with robust supporting clinical evidence, should be submitted to the CCG by a consultant NHS endocrinologist. If funding is approved, prescribing should be continued by the specialist service.

Liothyronine can be used for patients with thyroid cancer, in preparation for radioiodine ablation, iodine scanning or stimulated thyroglobulin test. In these situations patients should obtain their prescriptions from the centre undertaking the treatment and not from their GP.

NHS Shropshire does not support the routine prescribing of liothyronine and/or Armour® Thyroid for hypothyroidism.

This policy is based on the best available information at the time of writing.

References

¹ What is the rationale for using a combination of levothyroxine and liothyronine (such as Armour® Thyroid) to treat hypothyroidism. UK Medicines Information service November 2011

² http://www.british-thyroid-association.org/sandbox/bta2016/bta_statement_on_the_management_of_primary_hypothyroidism.pdf

³ <https://www.england.nhs.uk/wp-content/uploads/2017/11/items-which-should-not-be-routinely-prescribed-in-pc-ccg-guidance.pdf>