

**REPLACEMENT THERAPY OF PRIMARY HYPOTHYROIDISM:
MONOTHERAPY WITH L-THYROXINE AND COMBINATION THERAPY OF L-
THYROXINE AND TRIIODOTHYRONINE**

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ABSTRACT . The prevalence of overt hypothyroidism in the general population is 0.2 - 2%, but in certain groups of the population, in particular, among the elderly, it reaches 15%, so hypothyroidism is one of the most common endocrine diseases. Overt hypothyroidism is an absolute indication for replacement therapy with thyroid hormones. Currently, L-thyroxine monotherapy is mainly used for replacement therapy of hypothyroidism, although studies that would directly compare it with L-T4 + LT3 combination therapy have been virtually non-existent to date. In recent years, reports have begun to appear in the literature on some advantages of L-T3 + L-T4 combination therapy for hypothyroidism. A number of studies indicate positive dynamics of psychological indicators against the background of L-T4 + L-T3 combination therapy compared to L-T4 monotherapy. On the other hand, some studies have not confirmed the advantages of combination therapy compared to L-T4 monotherapy. Thus, to date, there is no clear data on the possible advantages and disadvantages of combination therapy L-T4 + L-T3 compared to L-T4 monotherapy. It should be noted that, despite the simplicity and convenience of L-T4 monotherapy, some patients, for various reasons, are in a state of chronic decompensation of hypothyroidism, or, despite maintaining a normal TSH level, present complaints characteristic of hypothyroidism, which to some extent may be evidence of the imperfection of this replacement therapy.

Scientific novelty

1. For the first time, a comparative study of two options

of replacement therapy for primary hypothyroidism was conducted: L-T4 monotherapy

and L-T4+L-T3 combination therapy using physiological doses of L-T3 using a crossover design and randomization when forming groups.

2. It was shown that despite adequate L-T4 therapy, atherogenic dyslipidemia often persists in

patients and positive dynamics of the lipid spectrum was demonstrated when patients were transferred to L-T4+L-T3 combination therapy.

3. The feasibility of assessing peripheral

markers of thyroid hormone effects, in particular, lipid spectrum parameters for a comprehensive assessment of hypothyroidism compensation was demonstrated.

4. When assessing the dynamics of bone metabolism markers against the background of combination therapy for hypothyroidism, a more pronounced

activation of bone resorption was revealed compared to bone formation.

5. The absence of a negative effect of physiological doses of L-T3 preparations on the state of the cardiovascular system during

combined replacement therapy for hypothyroidism has been proven.

6. In some patients with persistent symptoms against the background of adequate L-T4 monotherapy, positive dynamics of the psychoemotional state was noted when switching to combination therapy.

Practical significance

1. It has been demonstrated that despite the simplicity and convenience of L-T4 replacement monotherapy, many patients continue to have decompensated hypothyroidism, and in some patients, despite adequately

selected L-T4 monotherapy, a number of manifestations of hypothyroidism, such as atherogenic dyslipidemia, persist.

2. The feasibility of monitoring such peripheral markers of the effects of thyroid hormones as lipid spectrum indicators for a comprehensive assessment of the adequacy of replacement therapy for

hypothyroidism has been shown. 3. A group of patients with hypothyroidism for whom switching to LT4+L-T3 combination therapy would be most appropriate has been identified.

4. The safety of physiological doses of L-T3 in terms of their effect on the cardiovascular system in young patients has been demonstrated.

5. In the presence of osteoporosis risk factors in patients, the need to assess bone mineral density before prescribing the L-T4+L-T3 combination has been substantiated.

6. A scheme for selecting replacement therapy for primary hypothyroidism has been proposed, taking into account the assessment of peripheral markers of thyroid hormone effects.

CONCLUSIONS

1. L-T4 replacement monotherapy, which achieves normalization of TSH levels, is accompanied by the circulation of a non-physiologically high fT4 level, while an increase in

the L-T4 dose, leading to a decrease in TSH levels to a low-normal level, does not ensure the maintenance of a GGZ level similar to that in healthy people.

2. A single dose of L-T3 preparations in the morning does not allow adequately modeling the production of triiodothyronine by the thyroid gland due to the short half-life of L-T3 preparations.

3. Against the background of L-T4 replacement monotherapy, atherogenic dyslipidemia persists in some patients with hypothyroidism, which is eliminated by prescribing combination therapy with L-T4 and L-T3 preparations. 4. Prescribing combination therapy L-T4+L-T3 is accompanied by a somewhat greater activation of bone resorption compared to L-T4 monotherapy, which may be accompanied by a decrease in bone mineral density. 5. In some patients with hypothyroidism, despite adequate L-T4 monotherapy according to hormonal study data, a number of symptoms persist that can be relieved by switching to combination therapy L-T4+L-T3.

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