

THYROID

No fasting required for liquid levothyroxine

Newly published results challenge the recommendation that treatment for primary hypothyroidism should be taken in a fasting state, demonstrating that a liquid formulation can be taken with breakfast without losing effectiveness.

Standard treatment of hypothyroidism with levothyroxine tablets is straightforward, but compliance is limited by the difficulty that many people experience in postponing their breakfasts for 30–60 min after taking the medication. Previous observations suggested that liquid and gel levothyroxine formulations might not require fasting. This suggestion has now been tested in a double-blind, placebo controlled, randomized, crossover study in

which 77 treatment-naive patients with hypothyroidism each completed two 6-week regimens. In one, liquid levothyroxine was taken in a glass of water 30 min before breakfast, after an overnight fast, and placebo was taken at breakfast, mixed with the patient's choice of hot or cold beverage. In the other regimen, the order of levothyroxine and placebo was reversed. After each 6-week period, levels of TSH and free T_4 and T_3 were measured.

Euthyroidism (TSH between 0.2 mIU/l and 4.2 mIU/l) was achieved in similar numbers of patients following each regimen (84% with fasting levothyroxine, 87% with levothyroxine at breakfast). With dose adjustment, euthyroidism

was eventually achieved in all patients. The median daily levothyroxine dose was 75 µg. Levels of TSH, T_4 and T_3 were not affected by drug regimen, breakfast composition (liquid only or food and liquid), concomitant drug treatment, age, sex or body weight.

These results demonstrate the potential to improve adherence to levothyroxine treatment by removing the stipulation for fasting, as all patients declared that they would prefer to take the medication at breakfast.

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ORIGINAL ARTICLE Cappelli, C. *et al.* A double-blind placebo-controlled trial of liquid thyroxine ingested at breakfast: results of the TICO study. *Thyroid* <http://dx.doi.org/10.1089/thy.2015.0422>