

COMPARISON BETWEEN WEEKLY VS DAILY DOSING L-THYROXINE FOR THE TREATMENT OF HYPOTHYROIDISM IN RAMADAN - A PILOT RANDOMIZED CONTROLLED TRIAL

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**ABSTRACT**

**INTRODUCTION:** Hypothyroid patients find it difficult to take L-thyroxine on empty stomach during *Sahur*.

**OBJECTIVE:** To compare the efficacy, safety and patient's preference of weekly vs daily dosing of L-thyroxine in Ramadan.

**METHOD:** This is a pilot randomized controlled trial among hypothyroid patients during Ramadan 2017-2018. Patients were randomized into weekly and daily arm. Weekly arm took 7x their usual L-thyroxine dose at least 30 minutes pre-*sahur* once a week while daily arm took their usual daily dose at least 2 hours after the last meal before bed. Thyroid hormones, cardiac parameters, cognitive and psychological function were assessed.

**RESULTS:** Eighteen patients were randomized into weekly and daily arm. Majority (66.7%) were hypothyroid secondary to radioiodine therapy. At the end of study, there were no significant change in thyroid hormones level for weekly arm (intervention arm) but significant increment of TSH was observed in daily arm [TSH w0 1.8(0.23,5.57) vs w4 3.65(0.45,16.1); p=0.011]. In terms of toxicity, there were no hyperthyroid or cardiac toxicity observed despite the significant increment of fT4 within 24 hours of weekly dosing [fT4 w0 13.21(8.19,14.63) vs w2 17.43(12.38,22.55); p=0.011]. All patients were euthyroid with no side effects. Majority (83.3%) preferred weekly dosing during Ramadan.

**CONCLUSION:** Weekly levothyroxine dosing during Ramadan appeared to be safe, efficient and the most preferred dosing method.

**KEYWORDS:** L-thyroxine, weekly dosing, Ramadan

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