Timing of Levothyroxine in the Treatment of Primary Hypothyroidism

Abstract

Aim: Timing of levothyroxine (L-thyroxine) administration seems beneficial for early obtaining thyroid state. The present study aimed at investigating the best time of L-thyroxine administration that can achieve earlier normalization of thyroid stimulating hormone (TSH) and free thyroxine (FT4) levels in patients with primary hypothyroidism.

Study Design: Eighty two patients with primary hypothyroidism were recruited between November 2012 and July 2013 during their consultation to Al-Faiha Specialized Diabetes, Endocrine and Metabolism Center, Basrah, Iraq. The patients were divided into two equal groups; group A were receiving L-thyroxine daily, one hour before breakfast, group B: the dose of L-thyroxine was given at the evening. TSH, FT4, Body mass index (BMI), blood pressure, lipid profile were measured before, 30, 60 and 90 days after treatment with L-thyroxine.

Results: The mean reduction in TSH from baseline for the evening treatment was 13.6±22.2 mIU/ml which was slightly and insignificantly higher than the value of the morning treatment (11.3±22.5 mIU/ml), P = .63, df = 80, 95% CI: -12.17, 7.5). The mean increase in FT4 from baseline for the evening treatment was

5.7±4.9 pmol/l which was lower than 7.6±6 pmol/l in the morning treatment, (P = .12, df = 80, 95% CI: - 0.5, 4.3). There was no effect of treatment timing on lipid profile, blood pressure, and BMI.

Conclusions: There were no differences between the morning and evening treatment with L-thyroxine on early normalization of TSH and FT4.