

Ramadan Fasting and Thyroid Function

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Dear Editor,

By paying attention to Islamic recommendations, people can live safely and have a healthy lifestyle. Nutritional approaches play a key role in pursuing a safe and healthy lifestyle. According to the Hadith of the fifth Shia Imam (peace be upon him), fasting is one of the five pillars of Islam and an Islamic obligation. Fasting is a divine moral imperative with numerous remedial effects (1). Abnormal levels of thyroid hormones may be associated with severe health problems in the human body, while the normal range of these hormones is an indicator of proper thyroid function. The present letter aimed to investigate the effects of Ramadan fasting on the thyroid hormone levels.

Studies have demonstrated that fasting in the holy month of Ramadan causes no changes in the level of thyroxine (T4) (2-5), which has also been confirmed for the level of triiodothyronine (T3) (2, 4, 5) despite the notable increase in serum T4 during Ramadan (6). Furthermore, some studies in this regard have been performed based on the changes of T3 and T4 levels within the normal range (7, 8). Fasting in Ramadan causes no alterations in the levels of thyroid-stimulating hormone (TSH), free T3, and free T4; any changes in these parameters occurs within the normal limits (2-4, 9, 10). Moreover, Ramadan fasting is associated with no health risks in fasting

pregnant women in terms of thyroid hormones, as well as the pituitary-thyroid axis or hypothalamic-pituitary-thyroid axis (9, 11). According to the literature, TSH response to thyrotropin-releasing hormone (TRH) remains unchanged in fasting individuals (2). It is noteworthy that patients with hypothyroidism, who fast during Ramadan, may suffer from thyroid hormone alterations, which has been reported in severe hyperthyroidism (12, 13). Nevertheless, fasting is considered safe for the individuals with mild-to-moderate hyperthyroidism (13, 14). In this regard, Hadjzadeh et al. claimed that thyroid hormone alterations may occur in the patients with hypothyroidism who fast during Ramadan. Therefore, it is advisable to increase the levothyroxine dose to the recommended amount of 25-50 µg/day in these individuals, particularly in the elderly and women, from the beginning of Ramadan until 15-20 days after the end of this month (15).

Considering the mentioned findings, it could be stated that Ramadan fasting has no undesirable effects on thyroid hormones. However, in the case of patients with thyroid diseases (e.g., hyperthyroidism and hypothyroidism), who intend to fast during Ramadan, consultation with an endocrinologist is recommended before and during this month. Of note, multiple studies are required in order to obtain comprehensive outcomes in this regard.

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