



Attaining Euthyroidism - Seal the Loopholes

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To the Editor:

Notwithstanding rapid progression of sensitivity of thyroid function test (TFT) and attainment of serum euthyroid status in a very stringent range, many patients of thyroid disease continue to complain about somatic symptoms even after attaining euthyroid status biochemically.¹⁾ Here we focus on some additional points of consideration apart from achieving target serum thyroid hormone levels for wholesome thyroid-care.

Plenty of comorbidities often coexist with thyroid disorders like diabetes mellitus, hypertension, vitamin-D deficiency, dyslipidemia, obesity, polycystic ovarian syndrome, depression, hyponatremia and autoimmune diseases (AD).²⁾ The persistence of the nonspecific symptoms can be attributed to these chronic illnesses themselves and as adverse effects of various medications used as therapy for these diseases as well. Thus, detailed clinical profile for addressing other comorbidities is warranted in these scenarios. There is need for further research to decode the phenomenon of "tissue or cellular hypothyroidism" among treated hypothyroid patients even after attaining biochemical euthyroidism at serum level.²⁾ There is growing interest in applying FT4 level as a better clinical correlate than TSH.³⁾

Autoimmune thyroid disorders (AITD), having most prevalent association with other AD, may modify the course of disease presentation and thyroid-status.

This can be due to the immune-modifying effects of anti-thyroid antibodies, molecular mimicry between thyroid and other organ/disease-specific epitopes, and genetic variability.⁴⁾ Therefore, autoimmunity must be taken into consideration for those patients complaining about symptom-persistence. Differences in sensitivity of levothyroxine treatment among individuals and its failure to achieve physiological concentrations of serum and tissue T4, T3 levels should not be overlooked. Anti-thyroid peroxidase (TPO) being the commonest anti-thyroid autoantibody encountered in clinical practice has been substantially evaluated for various non-thyroidal manifestations in patients with thyroid diseases. Anti-TPO positive thyroid disorders generally are more refractory to conventional treatment. Many neuropsychiatric manifestations (like depression, isolated cognitive decline, movement disorders, seizures, etc.) have been associated with presence of anti-TPO antibody.⁵⁾ Steroid-responsive encephalopathy associated with autoimmune thyroiditis (SREAT), a rare clinical entity showing high titer of anti-TPO antibody can present with normal TFT.⁶⁾ Therefore, apart from routine TFT presence of anti-TPO also might be looked for to address future complications among biochemically euthyroid patients. Pregnant women can harbor anti-TPO antibody even while maintaining biochemical euthyroidism and this special group has been reported to suffer from adverse pregnancy outcomes.⁷⁾ But contradictory evidence persists and researchers have not suggested routine AITD screen among preg-

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Table 1. Clinical and biochemical considerations for wholesome thyroid care

Clinical parameters to evaluate	Biochemical parameters to evaluate
Blood pressure	Fasting and postprandial blood glucose, glycated hemoglobin
Persisting edema	Serum albumin
Pallor	Lipid profile
Symptoms of persisting body ache	Complete hemogram, iron profile, serum vitamin B ₁₂
Weight	Liver function test
Presence of goiter	Serum vitamin D ₃
Cognition and mood	Serum Na ⁺ , Ca ²⁺
Menstrual and obstetric history	Free T ₃ , Free T ₄ along with TSH
	Anti-thyroid antibody (anti-thyroid peroxidase, anti-thyroglobulin)
	Ultrasonography whole abdomen to look for polycystic ovarian disease, fatty liver
	Electrocardiogram

nant females to predict adverse outcome.⁸⁾ Whether inclusion of anti-TPO as part of routine TFT will lead to over-diagnosis or unnecessary economic burden needs further research at the community level.

Goiter is a relatively common association of euthyroid-status but there is scarcity of evidences regarding approach towards wholesome treatment in the patients with euthyroid goiter. The commonest cause of euthyroid diffuse goiter being iodine deficiency, treatment in form of monotherapy with iodide as well as combination therapy of levothyroxine and iodide have been proposed for pubertal age group and adults respectively.⁹⁾ On the other hand, euthyroid nodular goiter necessitates tailored approach as there are chances of developing autonomously functioning thyroid nodules which can increase the risk of hyperthyroidism even malignancy.⁹⁾ Nevertheless, a persistently enlarged thyroid even after attaining normal thyroxine level can negatively impact the appearance of a patient eventually leading to low self-esteem and increase psychological burden.¹⁰⁾

We celebrate the World Thyroid Day on May 25th and the International Thyroid Awareness Week from 25th to 31st May, 2020. In spite of arranging various awareness programs, unfortunately a significant proportion of patients even today are lost to follow up from endocrinologists after achieving biochemical euthyroidism. Social thyroid activists for generating awareness among general public regarding importance of regular follow up and thyroid-related consequences might be an apt solution to mitigate this public health

problem (Table 1).

Conflicts of Interest

No potential conflict of interest relevant to this article was reported.

Authors' Contribution

SC generated the idea. PB wrote the first draft which was critically reviewed and revised by SC.

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