PROGRESSION TO OVERT HYPERTHYROIDISM IS ONLY 1% PER YEAR WHEN TSH IS BETWEEN 0.1 AND 0.4 MIU/L

Rosario PW. **Natural history of subclinical hyperthyroidism in elderly patients with TSH between 0.1 and 0.4 mIU/I: a prospective study**. Clin Endocrinol (Oxf) 2010;72:685-8.

BACKGROUND

Subclinical hyperthyroidism has a prevalence of about 0.5 to 1% in the elderly. The objective of this study was to determine the natural history of the condition when the thyrotropin (TSH) level is between 0.1 and 0.4 mIU/L.

METHODS

The author performed a prospective study of women over 60 years of age screened for thyroid dysfunction between the years 2003 and 2008. Patients with TSH between 0.1 and 0.4 mIU/L had repeat measurements of TSH, free thyroxine and triiodothyronine (T_3) after 12 weeks. Those with exogenous thyrotoxicosis or taking drugs that could influence thyroid function were excluded, as were those with atrial fibrillation or heart disease. Patients who met the TSH criterion on the repeat measurement with normal thyroid hormone levels also had a radioiodine scan and ultrasound scan to determine the cause of the subclinical hyperthyroidism. They were then followed at intervals of 3 to 6 months with repeated thyroid-function tests.

One hundred two women met the criteria for the study; their ages varied from 60 to 78 years. Nodular disease was found in 91 patients and Graves' disease in 11. Follow-up ranged from 12 to 70 months (median, 41). Twenty-four patients (23.5%) had persistent normalization of serum TSH. Three had overt hyperthyroidism (3%) and 4 had a decrease of serum TSH to <0.1 mIU/L with increasing but still normal serum T₃; these patients were treated. The remainder of the patients (70%) persisted with TSH in the 0.1 to 0.4 mIU/L range, but four had atrial fibrillation or heart disease during follow-up and were treated. The only predictor of development of overt hyperthyroidism was a serum TSH <0.2 mIU/L.

Clinical

THYROIDOLOGY

CONCLUSIONS

In older women with TSH between 0.1 and 0.4 mIU/L, progression to clinical hyperthyroidism occurs in approximately 1% per year. TSH may normalize in about one fourth, but most have persistence of subclinical hyperthyroidism, with serum TSH remaining in the same range.

This important prospective study shows that when serum TSH is between 0.1 and 0.4 mIU/L, progression to overt hyperthyroidism is only 1% per year. Those who have progression are likely to have serum TSH <0.2 mIU/L, thus getting close to the <0.1 mIU/L group, who have a much higher rate of progression to overt hyperthyroidism, 5 to 8% per year as reported in the Schouten et al. New Zealand study summarized in another article in this issue (1). Based on data recently reported from Scotland, the milder subclinical hyperthyroidism is 3.6-fold more common than the worrisome condition in which serum TSH is <0.1 mIU/L (2). It is pertinent that about 90% of the patients with this milder subclinical hyperthyroidism had nodular goiter, which is a less common cause of overt hyperthyroidism than Graves' disease in our older population. Occasionally, the nodular goiter may require intervention because of compressive symptoms, but the current study is reassuring in that only a very small proportion of those with "mild" subclinical hyperthyroidism progress to the overt condition. Sensitive serum TSH measurements now enable us to split hairs in prognosticating about our patients with suppressed serum TSH.

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References

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- 2. Vadiveloo T, Donnan PT, Cochrane L, Leese GP. The Thyroid Epidemiology, Audit, and Research Study (TEARS): the natural history of endogenous subclinical hyperthyroidism. J Clin Endocrinol Metab 2011;96:E1-E8.

