Serum TSH testing is necessary for primary hypothyroidism case finding

Hypothyroidism is the most common functional disorder of the thyroid gland. Pathology of the thyroid gland (primary hypothyroidism) accounts for over 99.5% of cases of thyroid gland failure and < 0.5% result from disorders of the pituitary gland or hypothalamus (central hypothyroidism). Overt primary hypothyroidism refers to cases in which the serum thyrotopin (TSH) concentration is elevated and the serum free thyroxine (T4) level is below the reference range, while subclinical hypothyroidism is defined as an elevated serum TSH value associated with a serum free T4 that is still within the reference range.

The incidence of overt hypothyroidism has been estimated to be 4.1 cases per 1000 women per year and 0.6 cases per 1000 men per year.1 The prevalence has been reported to be approximately 1-2% in women and 0.1% in men in large population studies.2-4 The prevalence of subclinical hypothyroidism is far higher, having been reported to be about 4-10% in multiple populations5-8 and as high as 18% in the elderly.9-11

Symptoms and signs are often present in patients with overt hypothyroidism,9 although they tend to be nonspecific findings that can also be observed in other conditions. Clinical manifestations of subclinical hypothyroidism occur less frequently, are often subtle and are similarly nonspecific.

The very interesting study published in this issue by Indra, et al.10 prospectively evaluated the diagnostic accuracy of clinical features traditionally considered to be characteristic of hypothyroidism. They found that no single finding or combination of findings accurately predicted the presence of hypothyroidism and concluded that biochemical testing must be relied upon to make this diagnosis.

The identification of patients with hypothyroidism is an important individual and public health issue. Symptoms, nonspecific as they may be, usually improve when hypothyroid patients are given thyroid hormone replacement therapy. Furthermore, overt and even subclinical hypothyroidism have been reported to be associated with disordered myocardial function11-12 and with an increased risk of cardiovascular disease.13-14 Because primary thyroid gland disease is present in the overwhelming majority of individuals with hypothyroidism, measurement of the serum TSH level is the diagnostic test of choice for identifying this condition.

Population screening for hypothyroidism is currently a contentious issue. The American Thyroid Association steadfastly recommends screening asymptomatic individuals during their routine physical examination starting at age 35 years and every 5 years thereafter.15 At the other end of the spectrum, recent publications from an expert consensus panel16 and from the American College of Physicians17 have reported that there is insufficient evidence to recommend routine screening for this disease in asymptomatic people. Nonetheless, they advise aggressive case finding (TSH testing) in patients with clinical signs or symptoms that could be attributable to thyroid disease and in high risk populations. Screening is a broad population policy issue. Case finding, in contrast, is the more common situation in which a provider caring for a patient believes that testing for thyroid disease is indicated for any reason. Where individual patients are concerned, the experience of the provider must always supercede public policy recommendations by detached panels and organizations. Measurement of the serum TSH concentration is a simple and accurate method of confirming the presence of hypothyroidism and, as pointed out by Indra, et al, is the only accurate means to diagnose this condition.

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References