

Management of subclinical hypothyroidism

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The term subclinical hypothyroidism is used for patients who have mildly increased levels of serum thyrotropin hormone (TSH) but normal thyroid hormone (thyroxine and triiodothyronine) levels (1).

An increase in serum TSH concentration is an early and sensitive indicator of decreased thyroid reserve. However, it should be kept in mind that interpretation of thyroid function tests in the pediatric age range is more difficult than in adults. Although normal ranges have been defined for all age groups from birth to maturity, significant discrepancies still persist between different laboratories. It is therefore important that each laboratory determines its own normal values and the results must always be interpreted cautiously (2).

It is clear that thyroxine therapy is indicated in overt hypothyroidism and uniform agreement exists that it is also indicated for patients whose TSH levels are permanently increased above 10 mIU/L. The grey zone to treat or not to treat considers patients with TSH levels between 5 – 10 mIU/L. Therapy for these milder forms is controversial. In clinical practice some doctors treat all such patients while others choose to reassess the thyroid function in 3-6 months to find out if the thyroid abnormality is transient. Subclinical hypothyroidism is one spectrum of autoimmune thyroiditis, the clinical course is variable and spontaneous remission may occur in adolescence (3).

Adults with subclinical hypothyroidism, especially with thyroid antibodies have been shown to result in overt hypothyroidism with a rate of 5-20 % per year. In the contrary, a very low risk for overt hypothyroidism has been shown in children and adolescent during a 5 year follow up but it has to be kept in mind that only few follow-up studies have been done in children and adolescent (4-6).

Children and adolescents with type 1 diabetes, with juvenile arthritis and with epilepsy with valproate or carbamazepine are in risk for subclinical hypothyroidism and their thyroid function should be followed regularly (7-9). Early detection of subclinical hypothyroidism with treatment of thyroxine has shown to improve growth and metabolic control in type 1 diabetics (10,7). Increased TSH-levels with mildly increased thyroid hormone levels have also been found in up to 15 % of obese children and adolescents (11). There is, however, no need to treat these patients, hyperthyrotropinemia is reversible after weight loss (12).

It has been suggested recently that subclinical hypothyroidism is a cardiovascular risk factor in adults and physiological thyroxine replacement has a beneficial effect on low density lipoprotein cholesterol levels (13). No such data exists in children and adolescents. Further studies are needed on this topic.

When making the decision on thyroxine therapy in subclinical hypothyroidism it is important to keep in mind that subclinical hypothyroidism may have adverse effects on growth and development but it may be also be a benign and remitting process in many children and adolescents. Children and

adolescents with subclinical hypothyroidism need follow up and the decision on starting thyroxine therapy are individual. The controversy surrounding therapy is not resolved, yet.

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