



## Magnitude of Subclinical Hypothyroidism

R. P. Kudiyar, MD, DM

The increasing prevalence of hypothyroidism has brought into light the various problems encountered in the epidemiological studies of thyroid disorders namely those of definition e.g. overt hypothyroidism and sub-clinical hypothyroidism, selection criteria of population studied, the influence of age, sex environmental factors and the different techniques used in the estimation of thyroid hormones (1).

Despite this heterogeneity, the term sub-clinical hypothyroidism is defined as an asymptomatic state in which a reduction in thyroid activity has been compensated for by an increased TSH output to maintain a euthyroid state. Others prefer to use the term compensated hypothyroidism for this condition, some aspects of sub-clinical hypothyroidism have previously been described by Bastenie and his colleagues who have defined this state in terms of circulatory thyroid antibodies and by Fowler and his colleagues who have based their definition largely on elevated serum cholesterol concentration. It is certainly true that many subjects with sub-clinical hypothyroidism have circulating thyroid antibodies or an elevated serum cholesterol concentration or both these phenomenon. But neither of these findings is diagnostic of sub-clinical hypothyroidism. The diagnosis is best made by demonstrating the elevated basal serum TSH level and a prolonged or exaggerated rise in serum TSH

following administration of TRH in an asymptomatic patient.

### Prevalence

The prevalence of sub-clinical hypothyroidism varies from 5 to 13.2% depending upon the population studied. Women are affected twice more than men (2). The original Wickham survey have documented a continuing risk of developing thyroid failure in euthyroid persons with positive thyroid antibodies. This survey has brought out the annual risk of developing hypothyroidism of 5%. However, many others though short term follow up studies, reveal an annual hypothyroidism development rate of 7.3% increasing to 10% per annum in those who initially had serum TSH value more than 19 m u/l (3).

In yet another study of 437 healthy women aged 40-60 years who initially had normal TSH, 24% of anti-microsomal antibody positive women developed an elevated TSH one decade later compared to only 3% thyroid microsomal antibody (TMA) negative group. Serum TSH values in the upper normal range had some predictive values in this group of normal women (4).

The commonest cause of primary thyroid failure is Hashimoto's thyroiditis (54%) and other frequent causes of hypothyroidism include post thyroidectomy/post radioiodine (39%). The remaining being contributed by drugs, pit-hypothyroidism, iodine deficiency general resistance to thyroid hormones, neo-natal hypothyroidism (5).



Sub-clinical hypothyroidism though by definition should be an asymptomatic state but it is not so, a high index of suspicion is important to reach at the diagnosis and in a group of 50 patients (age group 11-45 years) attending the Endocrinology OPD of Medical College Jammu, we found a plethora of symptoms including weight gain (60%), firm bilobar mild to moderate thyromegaly (40%) lithargy and calf cramps (100%), variation in mensuration (40%), depression (25%), increased hair loss (25%), dryness and roughening of skin (25%) and change in voice (10%).

In all symptomatic patients, treatment in the form T4 therapy proved to be extremely effective and patients responded positively to the subjective improvement in symptomatology except for one patient who did not show expected improvement in the myopathy.

Although T4 therapy was considered to be the hallmark of thyroid replacement in hypothyroidism till very recently, but Robertas Burnevicius Group from North Carolina published their data showing that most patients feel better with addition of T3 where the dramatic improvement was observed in mental functioning (6). Patients performed better on a variety of standard neurophysiological tasks on T4 and T3. The researchers recommend that ideal thyroid hormone replacement

programme for someone without a thyroid gland or whose thyroid gland is nearly non-functioning would be 10µgm of T3 daily in sustained released form along with enough thyroxine to ensure euhyroidism. Some patients on thyroid hormone replacement having TSH level in the normal range and are still having a range of thyroid related symptoms are currently known as undertreated hypothyroids. Such patients can still be benefitted by bringing down TSH values to low normal range with the addition of T3 to T4 in the drug replacement schedule.

#### References

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