

Comments on The Role of FT3 Measurement in Thyroid Disease and The Comorbidity of Addison's Disease in Hashimoto's Thyroiditis

In Response to the BTF letter dated 14 November 2013, Reference PE1463/AA

by

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1. We ask for the inclusion of tests for Free T3 (FT3) and Reverse T3 (RT3) thyroid hormones, as these are the strongest indicators of cellular thyroid levels.

BTF response: The BTF informs enquirers that these tests are not useful in the diagnosis of hypothyroidism. Our medical advisors inform us there is no reliable scientific evidence to the contrary.

Comment: Restricting the answer to the diagnostic situation is inappropriate. While it is well-known and true that FT3 is of little additional value in the diagnosis of thyroid disorders and is of course particularly misleading in untreated hypothyroid subjects, it may be a useful parameter in the treatment situation. This has been documented by earlier studies , as found in the clinical trial of the first direct FT3 immunoassay in 1983, and confirmed by more recent analyses (1, 2).

2. We ask for medical professionals to acknowledge that adrenal insufficiency DOES exist and to incorporate The Adrenal Stress Index Test within NHS thyroid testing procedures.

BTF response: Adrenal insufficiency/Addison's Disease does exist but it is extremely rare. We inform patients that adrenal testing is not justified as a routine test for thyroid disorders, although patients with ongoing symptoms should be encouraged to discuss these with their doctor.

Comment: The prevalence of adrenal insufficiency (Addison's disease) as a comorbidity in patients with autoimmune thyroid disorders (Hashimoto's disease) was 1.2% in a large English study involving more than 3,000 patients. (3).

The term extremely rare does not appear to adequately reflect this situation with a 1% probability.

In fact, screening programs are in place for other diseases that occur in a much lower frequency in the population.

In our judgment, the condition should be taken very seriously based on the following considerations,

- a 1% probability of comorbidity
- grave consequences including a possible lethality of the unrecognised condition
- the variety of symptoms the disease can cause for the patient which are frequently misinterpreted
- a potential deterioration of the adrenal failure upon starting the patient on levothyroxine
- the very low costs of testing for this disorder (far below many other established screening programs)
- and the low cost highly efficient treatment that is available (cortisol replacement)

The coexistence of Addison's disease with thyroid autoimmune disorders is a manifestation of the polyglandular autoimmune syndrome. This disease is entirely different from "adrenal fatigue" or chronic fatigue syndrome (CFS). For the patient, it is critical to distinguish the entities and diagnose and classify them correctly.

On a more general note, the lack of guidance the statement provides doesn't seem to aid patients with that specific problem. While it is always appropriate to encourage people to discuss symptoms with their doctor, this general advice may not suffice for a condition that can threaten the patient's life. Severe Addison's disease should be regarded as a medical emergency like a heart attack. The question is would one give the same advice to a heart attack patient. If not, one should refrain from doing so in an endocrine emergency.

1. Woeber KA 2002 Levothyroxine therapy and serum free thyroxine and free triiodothyronine concentrations. *The Journal of Clinical Endocrinology & Metabolism* 25 106–109.
2. Hoermann R, Midgley JEM, Larisch R & Dietrich JW 2013 Is Pituitary Thyrotropin an Adequate Measure Of Thyroid Hormone-Controlled Homeostasis During Thyroxine Treatment? *European Journal of Endocrinology* 168 271–280. (doi:10.1530/EJE-12-0819)
3. Boelaert K, Newby PR, Simmonds MJ, Holder RL, Carr-Smith JD, Heward JM, Manji N, Allahabadia A, Armitage M, Chatterjee KV et al. 2010 Prevalence and relative risk of other autoimmune diseases in subjects with autoimmune thyroid disease. *The American Journal of Medicine* 123 183.e1–.e9. (doi:10.1016/j.amjmed.2009.06.030)