

Hashimoto's Thyroiditis – the Need for a Specific Therapy

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Hashimoto's thyroiditis (HT) is one of the most common autoimmune disorders and is the most prevalent cause of subclinical or overt hypothyroidism in areas with sufficient iodine intake [1]. Over the last three decades, its incidence has increased substantially, regardless whether it was defined by laboratory, clinical and ultrasonographic features [2] or histological characteristics [3]. Moreover, various characteristics of HT have changed over the decades. Affected patients had become younger and the incidence of clinically diagnosed HT in males had increased [2].

Apart from its substantial impact on thyroid function, HT also influences general health independent from hypo- or hyperthyroidism [4]. It is associated with decreased quality of life levels [5] as well as a wide range of organ-specific and non-organ-specific autoimmune disorders, as well as other diseases, including neuropsychological/psychiatric deficits, disorders of the gut, fibromyalgia, and reproductive health issues, among many others [4].

Thus, one of the main questions is whether HT patients who suffer from impairment in quality of life and HT-related symptoms can find medical help. Evidence suggests that both levothyroxine replacement and selenium supplementation are associated with reduce in concentrations of thyroid peroxidase antibodies [6,7]. However, no improvements in thyroid function have been observed with these approaches. Thyroidectomy, on the other hand, will only lead to a relief of mechanical symptoms including a feeling of compression, voice problems and tightness in the neck [8,9]. Keeping in mind that the association between HT and other autoimmune diseases likely derives from a polyclonal autoimmune response against organ-specific autoantigens [10], thyroidectomy will not lead to improvements in a majority of associated conditions and, thus, will only have minor impact on overall quality of life [4].

Notably in HT patients, low-level laser therapy of the thymus, thyroid, and supraclavicular fossa induces systemic immunomodulation [11]. A recent randomized, placebo-controlled trial on the efficacy of low-level laser therapy in patients with HT-induced hypothyroidism demonstrated that thyroid function was improved and thyroid peroxidase antibody levels were reduced [12]. This effect was also evident at the last follow-up examination nine months after treatment.

HT is considered a multifactorial disease. Recently, Effraimidis et al. [13] proposed a model for the natural history of autoimmune thyroid disease suggesting that a particular genetic background allows development of autoantibodies against thyroid peroxidase. Then, environmental exposure plays a significant role whether the patient will become hyper- or hypothyroid; for example, a high iodine intake and refraining from smoking will favor development toward hypothyroidism [13]. Together with possible influences of radiation [14], the sex hormones [15], and fetal microchimerism [16] the development is based on a variety of factors. Thus, it seems unlikely that primary prevention will be possible. Moreover, HT is a gender-specific disease with a current female-to-male ratio of about 7:1 [17] and, in addition with the above-mentioned associated conditions, it influences female and reproductive health substantially [4].

These considerations and the rising incidence of HT suggest that a specific therapy is needed. Unfortunately, with selenium and levothyroxine supplementation, thyroidectomy and laser therapy only a few therapeutic approaches have been developed and investigated. Hopefully, clinicians and researchers will realize that HT can substantially and directly influence health and health-related quality of life in many patients and will become eager to develop new specific treatment options.

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