

## Immune-Modulators and Thyroid Function in Oncological Patients with Hashimoto's Thyroiditis

Matozza Francesco<sup>1</sup>, Artero Guillermo H<sup>2</sup>, Artero Guillermo<sup>2</sup>, Levy Daniel<sup>4</sup> and Carvallo Héctor<sup>5</sup>

<sup>1</sup>Service du Neuroradiologie, Hopital Henri-Mondor, Creteil, France.

<sup>2</sup>Farmacéutico, Biopharmacie, France.

<sup>3</sup>Former Chief, Dept. Oncology, Htal. Rivadavia, Argentina.

<sup>4</sup>Endocrinologist, Member of S.A.E.M., Prof. Internal Medicine, Argentina.

### \*Correspondence:

Hector Carvallo, Endocrinologist, Member of S.A.E.M., Prof. Internal Medicine, Argentina.

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### ABSTRACT

Hashimoto's thyroiditis (HT) is a form of chronic lymphocytic thyroiditis, of autoimmune origin and multiple physiopathogenic pathways, which may or may not be associated with other autoantibody diseases, both endocrinological (P.A.S.) and non-endocrinological (M.A.S.). Likewise, HT can coincide -in the same patient- with very varied oncological pathologies, with which it can interact in a usually negative way. In this article, the benefit achieved in cancer patients who also had HT is evaluated through the use of immune-modulators.

### Keywords

Hashimoto, Oncology, Immune-modulators.

### Introduction

Hashimoto's thyroiditis (HT) is the most common cause of hypothyroidism worldwide (0.3-1.5 cases per 1,000 individuals per year) [1]. It is 7 times more frequent in the female sex. It is considered a disease of autoimmune origin, although a large number of dissimilar factors affect its physiopathogenesis [2,3]. Likewise, an increased incidence of cancer has been observed and confirmed in patients with autoimmune diseases [4].

### Laboratory Findings at HT (Figure 1)

1- Subclinical hypothyroidism (SCH)  
Normal T3 and T4 Increased TSH Increased ATG (anti thyroglobulin)

2- Clinical hypothyroidism (CH)  
Decreased T3 and T4 Increased TSH  
Increased anti-thyroid peroxidase (anti-TPO)

Increased antithyroglobulin (anti-Tg)

	Subclinic	Clinic
TSH	N	↑
FT4	N	↓↓
FT3	N	↓↓
TPO	↑↑	↑↑
TG	↑↑	↑↑
Cholesterol	↑	↑↑

Figure 1: HT Laboratory Findings.

### Objectives

We proceeded to demonstrate the beneficial effect of immune-modulators in patients with Hashimoto's Thyroiditis, who had different types of oncological pathologies.

## Patients and Methods

161 patients with Hashimoto's thyroiditis and different types of tumors were retrospectively evaluated in a multicenter study (Figure 2). Their age ranged from 40 to 70 years; 90% female. 98 patients received cancer treatment plus immune-modulators and levothyroxine for 8 months. 63 patients received only cancer treatment and levothyroxine as a control group, during the same period (Figure 3).

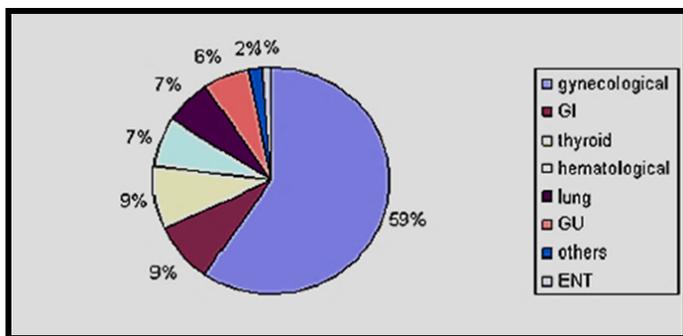


Figure 2: Types of tumors in the subjects that were controlled.

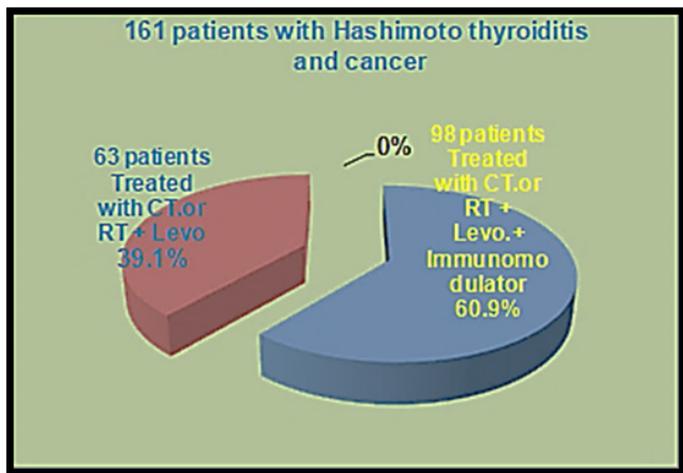


Figure 3: Distribution of patients with and without immune-modulators.

## Immune-Modulator

The immune-modulator, which was used, is composed of Zinc, Selenium, Magnesium and Astragalus extract (Astragalus membranaceus) [5,6]. The constituents of this last compound are: glycosides, polysaccharides, isoflavone-type flavonoids, sucrose, phytosterols, such as beta-phytosterol. Astragalus has immune stimulating properties; it increases immune response, increases the activity of T lymphocytes and the absolute number of lymphocytes, stimulates the natural production of interferon and enhances its activity (Figure 4 and 5).



Figures 4 & 5: A. membranaceus flowers and roots

Simultaneously, it decreases immune hyperactivity in patients with systemic lupus erythematosus and myasthenia gravis. Selenium decreases antiperoxidase levels in patients with Hashimoto's thyroiditis [7].

## Method

T3, T4, TSH, TPO and TG antibodies were measured before, during, and up to 8 months after treatment with immune-modulators. The immune-modulators were administered orally, sublingually, at a dose of 4 ml per day.

## Results

87 patients (78.5%) treated with Immunomodulators showed an increase in T3, T4 and a decrease in TSH, TPO and TG antibodies, two months after starting treatment. 8 (8.16%) patients showed no changes in thyroid function. 3 patients (3.06%) abandoned the treatment. Objectively, an increase in white blood cells, red blood cells, improvement of dry skin, asthenia, depression and intolerance to cold were observed. Subjectively, we observed a better quality of life in these patients treated with Immune-modulators (Figure 6).

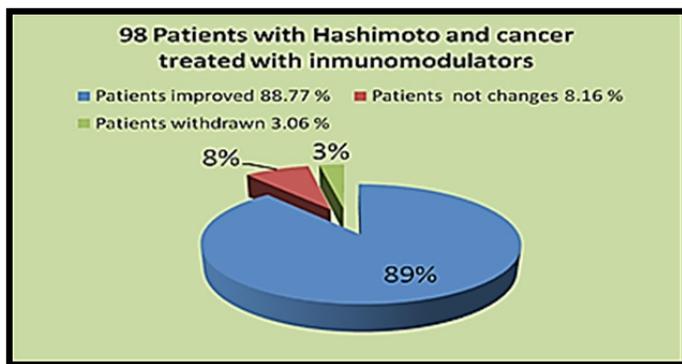


Figure 6: Results.

The control group did not show changes in thyroid function or variations in antibody levels (Figure 7).

	Hashimoto		AFTER IMMUNOMODULATOR	
	Subclinic	Clinic	Subclinic	Clinic
TSH	N	↑	N	↓
FT4	N	↓↓	N	↑↑
FT3	N	↓↓	N	↑↑
TPO	↑↑	↑↑	↓↓	↓↓
TG	↑↑	↑↑	↓↓	↓↓

Figure 7: Subjects' lab findings during study.

## Conclusions

Immune-modulators are well tolerated and have no side effects.

They improve thyroid function in patients with Hashimoto's thyroiditis.

In cancer patients, immune-modulators also improve red blood cells, white blood cells, regulate platelets and improve the disease-free period.

As secondary findings, we may say that women with Hashimoto's thyroiditis should have gynecological and imaging examinations (mammography, breast ultrasound, transvaginal ultrasound, and PAP) more frequently, since they are more likely to develop benign or malignant gynecological lesions.

On the other hand, in patients with uterine fibroids, ovarian cysts, and / or mammary dysplasia, thyroid function (T3, T4, TSH, APTO, and ATG) should be studied routinely to rule out Hashimoto's disease.

Immune-modulators are the best allies of cancer patients during and after chemo or radiotherapy treatment.

They stimulate the immune system and improve the quality of life of these patients. In patients with coexisting Hashimoto's thyroiditis, immune-modulators show a marked clinical and laboratory improvement, with a marked reduction in supplementary hormone therapy.

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