Thyroid Disease in Kerala: New Data on Thyroid Autoimmunity

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ABSTRACT

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Hakaru Hashimoto described Autoimmune Thyroiditis in 1912. Then he termed it "struma lymphomatosa" and described the infiltration of lymphoid cells as well as the formation of lymphoid follicles with a germinal center.

Among endocrine diseases, thyroid diseases are arguably the commonest and Kerala is no exception. A house to house survey from Cochin, published by us and indexed in Medline in 2009 revealed that thyroid function abnormalities were present in 19.6% of the adult population (n=986). 1The study also revealed that this population was iodine sufficient (median urinary iodine excretion of 211.4 mcg/l). About 9.5 % of the population had anti- thyroid peroxidase antibodies (anti-TPO). Among those patients with hypothyroidism, the prevalence of anti-TPO positivity was about 46%.

The present study, led by Dr KP Paulose, is an invaluable piece of excellent research because it documents, for the first time, the immunological and biochemical correlates of Kerala-based subjects with a histological diagnosis of Autoimmune Thyroiditis/ Hashimoto's Thyroiditis.

This underscores the importance of both a careful clinical examination of the gland to look for nodularity, as well as an ultrasound (and a guided FNAC) in cases where the gland is nodular.

Keywords: Thyroid Disorders, Autoimmune Thyroiditis, Ultrasound, Antibodies

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Thyroid diseases are arguably the commonest among endocrine diseases, and Kerala is no exception. A house to house survey from Cochin, published by us and indexed in Medline in 2009 revealed that thyroid function abnormalities were present in 19.6% of the adult population (n=986).[1]

The study also revealed that this population was iodine sufficient (median urinary iodine excretion of 211.4 mcg/l). About 9.5% of the population had anti-thyroid peroxidase antibodies (anti-TPO). Among those patients with hypothyroidism, the prevalence of anti-TPO positivity was about 46%. These findings have been tabulated below.

The present study, led by Dr KP Paulose, is an invaluable piece of excellent research because it documents, for the first time, the immunological and biochemical correlates of Kerala-based subjects with a histological diagnosis of Autoimmune Thyroiditis/ Hashimoto's Thyroiditis.[2] The study results suggest that the prevalence of anti-TPO antibodies is quite high (88%), and that anti- thyroglobulin antibodies are less relevant. Very interestingly, the ultrasound examination suggests that not all these patients have classical features of thyroiditis on ultrasound. Antibody positive status was associated with hypothyroidism in a significant proportion of the patients.

These findings have a very high importance. The diagnosis of autoimmune thyroid disease can be made by the combination of hypothyroidism and a diffuse goiter, especially in the presence of anti-TPO antibodies. In classical cases, anti-thyroglobulin antibody is not essential. Importantly, the ultrasound in these cases may display considerable heterogeneity in the findings. Interestingly, the authors discovered 3 cases of papillary thyroid cancer among them.[2]

Table 1. Thyroid-related parameters and prevalence of common thyroid diseases in Cochin (n=986)[1]

Parameter	Measured Value /Percentage
Goiter	12.2%
Median Urinary iodine Excretion	211.4 mcg/l
Thyroid function abnormalities	19.6%
Subclinical Hypothyroidism	9.4%
Anti-TPO Positivity	9.5%
Anti-thyroglobulin	8.5%

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This underscores the importance of both a careful clinical examination of the gland to look for nodularity, as well as an ultrasound (and a guided FNAC) in cases where the gland is nodular. This is because (a) Papillary thyroid cancer was found in 3/100 patients in this study form Kerala and (b) papillary thyroid cancer has an excellent prognosis if detected and treated early. Indeed the presence of chronic lymphocytic thyroiditis in patients with papillary thyroid cancer is associated with an improved prognosis.[3] However chronic lymphocytic thyroiditis was not an independent prognostic factor.[3] Surprisingly, chronic lymphocytic thyroiditis has been reported in a surprisingly high proportion (30%) of patients with papillary thyroid cancer.[3]

Before this editorial ends, this article will briefly describe the genius who described autoimmune/ Hashimoto's thyroiditis.[4-6] Nearly a century has passed after Hakaru Hashimoto described Hashimoto's Disease of the thyroid from Japan in the year 1912. The disease continues to intrigue and fascinate researchers from all over the world. Hakaru Hashimoto was a surgeon. Hashimoto defined the disease after examining the goiters and tissue samples of 4 middle aged women. The goiters caught his attention because unlike classical colloid goiters, these goiters had extensive lymphocytes. Two of these women had hypothyroidism. Carefully, he ruled out other cause of goiters. After making sure that he had described a new entity, he termed it "struma lymphomatosa" and described the infiltration of lymphoid cells as well as the formation of lymphoid follicles with a germinal center. This entity had not been described before, but it was to be many years later, in the 1930s that his work was evaluated and recognized by English and American researchers several years after he published it. However, ultimately, the disease was named after him.

After training in Europe, Hakaru Hashimoto returned to Japan on the eve of the 1st World War and became the doctor in his home town, Igamachi. Hashimoto was well known for his commitment to patients, and would travel great distances in a rickshaw to visit patients.[6] He died in the year 1934. In order to honor his achievements, the Kyosho University has named a road as Hashimoto's Street. Unlike many researchers who publish their landmark papers when they are in the twilight of their career, Hashimoto was an unusual scientist, who made his greatest discovery early in his career, and thereafter left the academic world to serve patients in his home town. The Japan Thyroid Association has appropriately honored him by putting Hakaru Hashimoto's picture in its logo.[6] To the best of my knowledge; this is probably the first and only time that a doctor's picture has graced a medical association's emblem.

END NOTE

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