



CODEN [USA]: IAJPBB

ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES<http://doi.org/10.5281/zenodo.3668927>Available online at: <http://www.iajps.com>

Research Article

THE ROLE OF THYROID STIMULATING ANTIBODIES OF GRAVE'S DISEASE IN DIFFERENTIATED THYROID CANCERSumayya Shabbir¹, Ajmal Farooq², Muhammad Idrees Shabbir³, Ayesha Sikandar⁴,
Saima Riaz⁵, Zahid Hussain Shah⁶¹ Senior Registrar Mayo Hospital, Lahore² Associate professor PGMI/AMC/Lahore³ Postgraduate Resident LGH, Lahore⁴ Postgraduate Resident National Hospital, Lahore⁵ Senior Registrar Avicenna Medical College, Lahore⁶ Assistant Professor King Edward Medical University, Lahore**Article Received:** November 2019 **Accepted:** January 2020 **Published:** February 2020**Abstract:**

Many previous researches have indicated increased aggressiveness of thyroid cancer in patients suffering from Grave's disease. The thyroid stimulating antibodies are considered as the main reason for aggravating aggressiveness of thyroid malignancy (Belfiore, Garofalo & Giuffrida 1990). It has also been noted that thyroid nodules are found three times more in patients of Grave's disease as compared to the general population.

300 patients of Grave's disease visiting different hospitals were selected for the present study. These patients were assessed on terms of having cancer. Out of 300 Grave's disease patients, differentiated thyroid cancer was found to be present in 233 patients. Ultrasonography is useful in detecting cancers in thyroid gland during initial examination. Thus, it is possible and important to identify cancer at early stages of Grave's disease. The patients with Grave's disease may show additional multifocality, distant metastasis and lymph node metastasis. The same has been found in present study. The autoimmune process of Grave's disease is considered to influence evolution of thyroid cancer through changes in host immune responses. The surgery and antithyroid drug therapy can help in regaining immunological potency in patients with grave's disease. It is suggested that patients with Grave's disease should undergo thorough thyroid gland examination by ultrasonography. It can be concluded that the thyroid stimulating antibodies of Grave's disease are associated with occurrence of cancer in individuals.

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Please cite this article in press Sumayya Shabbir et al., *The Role Of Thyroid Stimulating Antibodies Of Grave's Disease In Differentiated Thyroid Cancer.*, Indo Am. J. P. Sci, 2020; 07(02).

INTRODUCTION:

Many previous researches have indicated increased aggressiveness of thyroid cancer in patients suffering from Grave's disease. The thyroid stimulating antibodies are considered as the main reason for aggravating aggressiveness of thyroid malignancy (Belfiore, Garofalo & Giuffrida 1990). It has also been noted that thyroid nodules are found three times more in patients of Grave's disease as compared to the general population. The presence of thyroid nodules is indicative of thyroid cancer. In general population, rate of malignancy associated with thyroid nodules is 5%, whereas, patients with Grave's disease depicts range of 2.3% to 45.8% (Menon et al. 2018).

The thyroid -stimulating hormone (TSH) is crucial in normal functioning and thyroid growth. It also takes part in cell differentiation, iodide uptake, triiodothyronine secretion and organogenesis (Filetti, Belfiore & Amir 1988). However, thyroid stimulating antibodies in Grave's disease are considered to initiate growth of thyroid cancer. Many researchers have linked high levels of thyroid stimulating antibodies with the occurrence of thyroid cancers (Medas et al. 2018).

Ultrasonography is helpful in early detection of thyroid nodules. In many previous studies, thyroid

cancer has been manifested as incidental findings with Grave's disease (Tam 2014). The aim of the present study is to evaluate link between thyroid stimulating antibodies of Grave's disease with thyroid cancer.

METHODOLOGY:

300 patients of Grave's disease visiting different hospitals were selected for the present study. These patients were assessed on terms of having cancer. Moreover the circulating thyroid stimulating antibodies were measured for all the patients. Chi square test was used to evaluate link of thyroid stimulating antibodies with occurrence of cancer.

The diagnosis of Grave's disease included history and signs of hyperthyroidism along with enhanced thyroid uptake and absence of nodules at scintiscan. The thyroid stimulating antibodies were measured in accordance with Belfiore et a (1990) and Filetti et a (1988).

RESULTS:

Out of 300 Grave's disease patients, differentiated thyroid cancer was found to be present in 233 patients. The characteristics of participants are shown in the Table 1, whereas, characteristics of cancer patients are shown in Table 2.

Table 1:Characteristics of participants

Characteristics	Patients (n=300)
Age (years)	50.3 ± 4.77
Gender (M/F)	180/120

Table 2:Characteristics of cancer patients

Characteristics	Patients (n=233)
Disease period (years)	4.5 ± 1.22
Cancer period (years)	2.34 ± 0.89

The thyroid stimulating antibodies in Graves patients were found to be 458 percent of basal values, whereas, in patients having cancer along with Graves disease it was found to be 583 percent of basal values. The p value of 0.0001 of chi test indicated strong associated between occurrences of cancer with high values of thyroid stimulating antibodies of Grave's disease.

DISCUSSION:

Ultrasonography is useful in detecting cancers in thyroid gland during initial examination. Thus, it is possible and important to identify cancer at early stages of Grave's disease. The patients with Grave's disease may show additional multifocality, distant metastasis and lymph node metastasis. The same has been found in present study. The autoimmune process of Grave's disease is considered to influence evolution of thyroid cancer through changes in host immune responses. The surgery and antithyroid drug therapy can help in regaining immunological potency in patients with grave's disease. It is suggested that patients with Grave's disease should undergo thorough thyroid gland examination by ultrasonography.

CONCLUSION:

It can be concluded that the thyroid stimulating antibodies of Grave's disease are associated with occurrence of cancer in individuals.

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