|| ISSN(online): 2589-8698 || ISSN(print): 2589-868X ||
International Journal of Medical and Biomedical Studies
Available Online at www.ijmbs.info
NLM (National Library of Medicine ID: 101738825)
Index Copernicus Value 2019: 79.34
Original Research Article
Volume 5, Issue 1; January: 2021; Page No. 326-328

TO STUDY LEVEL OF ANTITHYROGLOBULIN ANTIBODIES IN CASE OF AUTOIMMUNE THYROIDITIS

Dr. Bajaj (Assoc. Prof.), Dr. Shyam Sunder Bajaj[1] (Assoc. Prof.)

Dept. of Pathology, Amaltas Institute of Medical Sciences, Dewas (M.P.)[1]

Article Info: Received 04 December 2020; Accepted 28 December 2020
DOI: https://doi.org/10.32553/ijmbs.v5i1.1774
Corresponding author: Dr. Shyam Sunder Bajaj
Conflict of interest: No conflict of interest.

Abstract

Background & Method: The present study titled "To study level of Antithyroglobulin Antibodies in case of Autoimmune Thyroiditis" was conducted among the patients at Amaltas Institute of Medical Sciences. Dewas Patients coming to any clinical department with thyroid swelling during the study period were randomly selected for the study. After complete history and thorough clinical examination, FNAC was being performed with a 22 gauge needle in 10 ml syringe with or without USG guidance as per requirement.

Result: In the present study, all the cases presented with a neck swelling. 71 (71%) out of the 100 cases had painful swelling while 29 (29%) presented with painless swelling. The levels of antithyroglobulin antibodies were found to be above 100 IU/ml in all the cases studied. 35 cases had levels between 100-500, 58 between 501-1000 and 7 above 1000 IU/ml.

Conclusion: The cytomorphological details in cases of autoimmune thyroiditis, to study the level of antithyroglobulin antibodies and to correlate the cytological findings with clinical presentation and antithyroglobulin antibodies. The present study could not prove any statistical significance of the association of antithyroglobulin antibodies, yet the levels of these antibodies are essential as a part of thyroid work up of clinically diagnosed patients.

Keywords: Antithyroglobulin, Antibodies & Thyroiditis.
Study Designed: Observational Study

Introduction

The thyroid gland is a butterfly-shaped organ that sits at the front of the neck. It is composed of two lobes, left and right, connected by a narrow isthmus [(1)]. The thyroid weighs 25 grams in adults, with each lobe being about 5 cm long, 3 cm wide and 2 cm thick, and the isthmus about 1.25 cm in height and width[(2)]. The gland is usually larger in women, and increases in size in pregnancy[(3)].

The thyroid sits near the front of the neck, lying against and around the front of the larynx and trachea. The thyroid cartilage and cricoid cartilage lie just above the gland, below the Adam's apple. The isthmus extends from the second to third rings of the trachea, with the uppermost part of the lobes extending to the thyroid cartilage, and the lowermost around the fourth to sixth tracheal rings[(4)]. The thyroid gland is covered by a thin fibrous capsule, which has an inner and an outer layer. The outer layer is continuous with the pretracheal fascia, attaching the gland to the cricoid and thyroid cartilages, via a thickening of the fascia to form the posterior suspensory ligament of thyroid gland also known as Berry's ligament. This causes the thyroid to move up and down with swallowing. The inner layer extrudes into the gland and forms the septae that divides the thyroid tissue into microscopic lobules. Typically four parathyroid glands, two on each side, lie on each side between the two layers of the capsule, at the back of the thyroid lobes[(5)].

Material & Method

The present study titled "To study level of Antithyroglobulin Antibodies in case of Autoimmune Thyroiditis" was conducted among the patients at Amaltas Institute of Medical Sciences, Dewas (M.P.) from April 2017 to March 2018 among 100 admitted patients.

Data collection:

All cases undergoing FNAC for thyroid swelling during study period were included in the study. The data was collected as per the pre-designed proforma including the general profile, clinical examination, laboratory investigations, USG findings and FNAC observations.

Methodology:

Patients coming to any clinical department with thyroid swelling during the study period were randomly selected for the study. After complete history and thorough clinical examination, FNAC was being performed with a 22 gauge needle in 10 ml syringe with or without USG guidance as per requirement.

Multiple smears were prepared, air-dried and fixed in ethanol for staining by May-Grunwald-Giemsa stain and Papanicolaou staining method. A detailed examination of the cytologic smears was done and features like cellularity, amount and nature of colloid, Hurthle cell change, anisonucleosis of follicular cells, spectrum of reactive lymphoid cells and other inflammatory cells like

eosinophils , macrophages, giant cells and epithelioid cells were noted. Thyroid function tests were done using COBAS E analyser. Cytologic grading of thyroiditis was done according to the Bhatia et al grading.

Inclusion Criteria:

All the patients with palpable thyroid swelling undergoing FNAC procedure at Amaltas Institute of Medical Sciences, Dewas.

Exclusion Criteria:

Already diagnosed by FNAC as thyroid swelling other than thyroiditis.

Results

Table 1: distribution of participants according to type of swelling (*n=100*)

Sex	Number of Patients	Percentage (%)
Painful Swelling	71	71.0
Painless Swelling	29	29.0
Total	**100**	**100.0**

Table 2: distribution of participants according antithyroglobulin antibody levels (*n=100*)

ATG Levels	Number of Patients	Percentage (%)
<100 IU/ml	0	0.0
100-500 IU/ml	35	35.0
501-1000 IU/ml	58	58.0
>1000 IU/ml	7	7.0
Total	**100**	**100.0**

Table 3: correlation between age and diagnosis (*n=100*)

Age Group	Granulomatous Thyroiditis	Lymphocytic Thyroiditis	Hashimoto's Thyroiditis	Total
0-20 years	1	3	1	5
21-40 years	16	24	15	55
41-60 years	9	13	9	31
>60 years	5	2	2	9
Total	**31**	**42**	**27**	**100**
Chi square= 3.5239 ; p-value= 0.7407 (insignificant)				

Discussion

The total number of patients studied was 100. The minimum and maximum age of participants was 16 years and 72 years respectively[(6)]. The mean age was observed to be 39.10 years with a standard deviation of 14.193 years. The age range in various studies was similarly too big, e.g.

Table 4: Mean Age

Author	Minimum Age (years)	Maximum Age (years)	Mean Age (years)
Bijwe et al [(103)]	7	63	36.44
Anila et al [(101)]	10	68	43.19
Akamizu [(104)]	11	76	37.59
Manji et al [(105)]	9	89	41.38

In the present study, the correlation of age with the various types of thyroiditis was found to be statistically insignificant[(7)]. It was seen that the maximum number of cases among all the three types of thyroiditis studied were in the age group of 21-40 years. The number of cases was the least in the age group of 0-20 years followed by those above 60 years. The p-value was found to be 0.7407, which was of no statistical significance[(8)]. The age correlation was found to be significant in a few studies done in other parts of the world[(9)].

In the present study, all the cases presented with a neck swelling. 71 (71%) out of the 100 cases had painful swelling while 29 (29%) presented with painless swelling. The levels of antithyroglobulin antibodies were found to be above 100 IU/ml in all the cases studied. 35 cases had levels between 100-500, 58 between 501-1000 and 7 above 1000 IU/ml.

Conclusion

The cytomorphological details in cases of autoimmune thyroiditis, to study the level of antithyroglobulin antibodies and to correlate the cytological findings with clinical presentation and antithyroglobulin antibodies. The present study could not prove any statistical significance of the association of antithyroglobulin antibodies, yet the levels of these antibodies are essential as a part of thyroid work up of clinically diagnosed patients.

References

1. Dayan, Dayan, Colin M; Dayan, Colin M.; Gilbert H. Daniels (1996). "Chronic Autoimmune Thyroiditis". The New England Journal of Medicine. 335(2): 99–107.
2. Fehrenbach; Herring (2012). Illustrated Anatomy of the Head and Neck. Elsevier. p. 158.
3. Niazi, Asfandyar Khan; Kalra, Sanjay; Irfan, Awais; Islam, Aliya (2016-11-13). "Thyroidology over the ages". Indian Journal of Endocrinology and Metabolism. 15 (Suppl2): S121–S126.
4. His, W. (1895). Die anatomische Nomenclatur. Nomina Anatomica. Der von der Anatomischen Gesellschaft auf ihrer IX. Versammlung in Basel angenommenen Namen. Leipzig: Verlag Veit & Comp.
5. Magner, James (2014). "Historical Note: Many Steps Led to the 'Discovery' of Thyroid-Stimulating Hormone". European Thyroid Journal. 3: 95–100.

6. Büyükgebiz, Atilla (15 November 2012). "Newborn Screening for Congenital Hypothyroidism". Journal of Clinical Research in Pediatric Endocrinology. 4 (4).
7. Harris, Randall E. (2015-05-07). Global Epidemiology of Cancer. Jones & Bartlett Publishers. p. 268.
8. Boron WF, Boulapep EL. (2012). Medical Physiology (2nd ed.). Philadelphia: Saunders. p. 1052.
9. Boron WF, Boulpaep E (2003). "Chapter 48: "synthesis of thyroid hormones"". Medical Physiology: A Cellular And Molecular Approaoch. Elsevier/Saunders. p. 1300.