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Original Research Article

To correlate cytological finding with clinical presentation and antithyroglobulin antibodies

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ABSTRACT

Background & Methods : 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.

Result: In our study we found, correlation between antithyroglobulin antibody levels, 100-500 IU/ml (53), 501-1000 IU/ml (87) & >1000 IU/ml (10). Chi square = 8.2068; p-value= 0.7120 (insignificant). Correlation between T3 levels, Normal (18), Low (24) and High (108). Chi square = 12.3129; p-value= 0.3580 (insignificant). Correlation between T4 levels, Normal (00), Low (24) and High (108). Chi square = 19.9758; p-value= 0.00012 (significant). Correlation between T4 levels, Normal (00), Low (24) and High (108). Chi square = 79.0167; p-value<0.00001 (significant).

Study Designed: Prospective Observational Study.

Conclusion: Antithyroglobulin antibodies may be insignificant statistically, yet they should always be tested for, in order to establish a better understanding of the cases. The ATG levels should be kept in mind before prescribing a treatment regime for such cases. This not only leads the pathologists to continuously seek for better than the present investigations but also leads clinicians to decide a dynamic management regime. Though there is a defined protocol for thyroid work up of clinically diagnosed patients, newer and more sensitive test need to be devised.

1. Introduction

The thyroid is provided with blood vessel blood from the predominant thyroid course, a part of the outside carotid conduit, and the mediocre thyroid supply route, a part of the thyrocervical trunk, and in some cases by an anatomical variation the thyroid ima vein, which has a variable origin.[1] The unrivaled thyroid conduit parts into foremost and back branches providing the thyroid, and the substandard thyroid corridor parts into prevalent and sub-par branches.[2] The unrivaled and substandard thyroid supply routes consolidate behind the external piece of the thyroid lobes.[3] The venous blood is depleted by means of predominant and center thyroid veins, which channel to the inward jugular vein, and through the substandard thyroid veins. The sub-par thyroid veins begin in an organization of veins and channel into the left and right brachiocephalic veins. The two supply routes and veins structure a plexus between the two layers of the case of the thyroid organ.

Iodine is fundamental for the creation of the thyroid chemicals. Iodine (I0) goes in the blood as iodide (I−), which is taken up into the follicular cells by a sodium-iodide symporter.[4] This is a particle channel on the cell layer which in a similar activity transports two sodium particles and an iodide particle into the cell. Iodide at that point goes from inside the cell into the follicular space, through the activity of pendrin, an iodide-chloride antiporter. In the follicular space, the iodide is then oxidized to iodine.[5] This makes it more receptive, and the iodine is appended to the dynamic tyrosine units in thyroglobulin by the chemical thyroid peroxidase. This structures the antecedents of thyroid chemicals monoiodotyrosine (MIT),

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Table 1: Correlation betweenantithyroglobulin antibody levels and diagnosis (n=150)

ATG	Granulomatous Thyroiditis	Lymphocytic Thyroiditis	Hashimoto's Thyroiditis	Total
<100 IU/ml	00	00	00	00
100-500 IU/ml	19	25	09	53
501-1000 IU/ml	26	37	24	87
>1000 IU/ml	03	00	7	10
Total	48	62	40	150

In our study we found, correlation between antithyroglobulin antibody levels, 100-500 IU/ml (53), 501-1000 IU/ml (87) & >1000 IU/ml (10). Chi square = 8.2068; p-value= 0.7120 (insignificant)

Table 2: Correlation betweenT3 levels and diagnosis (n=150)

T3 Levels	Granulomatous Thyroiditis	Lymphocytic Thyroiditis	Hashimoto's Thyroiditis	Total
Normal	00	00	18	18
Low	02	00	22	24
High	45	63	00	108
Total	47	63	40	150

In our study we found, correlation between T3 levels, Normal (18), Low (24) and High (108). Chi square = 12.3129; p-value= 0.3580 (insignificant)

Table 3: Correlation betweenT4 levels and diagnosis (n=150)

T4 Levels	Granulomatous Thyroiditis	Lymphocytic Thyroiditis	Hashimoto's Thyroiditis	Total
Normal	00	00	00	00
Low	02	00	40	42
High	45	63	00	108
Total	47	63	40	150

In our study we found, correlation between T4 levels, Normal (00), Low (24) and High (108). Chi square = 19.9758; p-value= 0.00012 (significant)

Table 4: Correlation betweentsh levels and diagnosis (n=150)

TSH Levels	Granulomatous Thyroiditis	Lymphocytic Thyroiditis	Hashimoto's Thyroiditis	Total
Normal	02	00	00	02
Low	43	63	00	106
High	02	00	40	42
Total	47	63	40	150

In our study we found, correlation between T4 levels, Normal (00), Low (24) and High (108). Chi square = 79.0167; p-value<0.00001 (significant).

and diiodotyrosine (DIT).

Thyroid autoantibodies show up for the most part with the presence of lymphocytes in the focused on organ. Lymphocytes produce antibodies focusing on three diverse thyroid proteins: Thyroid peroxidase Antibodies (TPOAb), Thyroglobulin Antibodies (TgAb), and Thyroid animating chemical receptor Antibodies (TRAb). A few patients who are solid might be positive for more than one of these antibodies.[6] Specialists who go to such patients will in all probability do routine subsequent meet-ups on the patient's wellbeing since, despite the fact that it is profoundly impossible that they will introduce any thyroid issues, there is as yet an opportunity that they will build up some sort of brokenness with time.[7]

The side effects may differ contingent upon the thyroid capacity, for example hyperthyroidism or hypothyroidism. Hyperthyroidism can cause perspiring, fast pulse, tension, quakes, weariness, trouble dozing, unexpected weight reduction, and distending eyes. Hypothyroidism can cause weight acquire, exhaustion, dry skin, balding, narrow mindedness to cold, and stoppage. The impacts of this illness might be lasting however can once in a while be transient. Manifestations may travel every which way relying upon whether the individual gets treatment, and whether the treatment takes effect.[8]

2. Materials and Methods

The present study is conducted from 2013 to 2016 among 150 admitted patients.

All cases going through FNAC for thyroid growing during study period were remembered for the examination. The information was gathered according to the pre-planned

proforma including the overall profile, clinical assessment, research center examinations, USG discoveries and FNAC perceptions.

Patients going to any clinical office with thyroid expanding during the investigation time frame were arbitrarily chosen for the examination. After complete history and careful clinical assessment, FNAC was being performed with a 22 measure needle in 10 ml needle with or without USG direction according to prerequisite.

2.1. Inclusion criteria

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

2.2. Exclusion criteria

Already diagnosed by FNAC as thyroid swelling other than thyroiditis.

3. Result and Discussion

The case with normal TSH levels belonged to Granulomatous Thyroiditis group. 43 cases of Granulomatous Thyroiditis and all 63 cases of Lymphocytic Thyroiditis had low TSH levels. All 40 cases of Thyroiditis and 1 case of Granulomatous Thyroiditis had High TSH levels. This correlation was found to be statistically significant.

The T4 levels were high in 45 (out of 47) cases of Granulomatous Thyroiditis and all 63 cases of Lymphocytic Thyroiditis while the levels were low in all 40 cases of Hashimoto's Thyroidits.

The correlation of T3 levels was, however, found to be statistically insignificant in the present study. Most of the studies found this correlation to be insignificant. The studies with a positive correlation were those done by Brent et al,[8] Vahid et al[9] and Basbug et al.[10]

Frequency of immune system thyroiditis was 13.4%. More patients were females (96.7%), 53.3% of cases were found in the age of 21-40 years. 80.6% patients had a diffusely developed thyroid organ clinically. 92.7% patients showed grade I/II goiter. USG likewise showed a diffuse extension in 85.3% cases. 150 patients with immune system thyroiditis, (73.3%) patients were euthyroid whereas 32 (21.3%) patients were hypothyroid at the hour of FNAC.[11] 08(5.3%) patients found to be hyperthyroidism & 08% patients showed subclinical hypothyroidism. Pervasiveness of euthyroid immune system thyroiditis showed up high in our examination. Among the cytomorphological highlights, presence of lymphocytes was reliably found in all instances of constant lymphocytic thyroiditis/blended thyroiditis.[12]

4. Conclusion

Antithyroglobulin antibodies may be insignificant statistically, yet they should always be tested for, in order to establish a better understanding of the cases. The ATG levels should be kept in mind before prescribing a treatment regime for such cases. This not only leads the pathologists to continuously seek for better than the present investigations but also leads clinicians to decide a dynamic management regime. Though there is a defined protocol for thyroid work up of clinically diagnosed patients, newer and more sensitive test need to be devised.

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6. Conflict of Interest

The authors declare they have no conflict of interest.

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