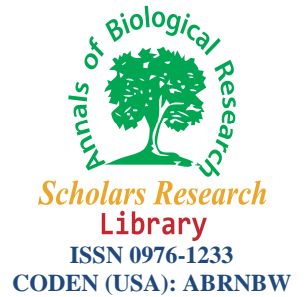




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## Clinical, serological and cytological correlation in cases of Autoimmune thyroiditis-A one year experience in a tertiary hospital

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### ABSTRACT

This study was undertaken to find out frequency of autoimmune thyroiditis, determine the age and sex incidence, mode of presentation and to know the status of thyroid hormones, auto antibodies and cytological features in the patients of Autoimmune thyroiditis. This is a retrospective study and was carried out between march 2013 and feb 2014. In this one year period 44 cases were studied- auto antibodies levels ,thyroid profile and FNAC was done and diagnosis of Autoimmune thyroiditis was made. Out of total 44 cases, autoantibody levels were raised in 31 cases, cytological diagnosis of autoimmune thyroiditis was made in 29 cases. Clinical presentation as diffuse goiter was seen in 19 cases, female preponderance in 43 cases and maximum patients were from 21-30years age group. Out of total 44 cases studied 20 were euthyroid, 21 were hypothyroid and 3 cases showed increased thyroxine levels. Based on our results the study suggests a high prevalence of Autoimmune thyroiditis especially among females and affected patients are from younger age group 21-30 years and are mostly hypothyroid or euthyroid.

**Key words:** thyroid, thyroid antibodies , FNAC, Thyroid hormones T3,T4,TSH.

### INTRODUCTION

Hashimoto in 1912 described four women in whom thyroid gland was enlarged and appeared to have been transformed into lymphoid tissue[1]. Presence of antibodies was reported 40 years later in patients with this disorder[2]. Autoimmune thyroiditis is most common cause of goiter and hypothyroidism [3]. It is an autoimmune disease and the most common inflammatory condition of the thyroid gland [4]. It is a disease in which the body interprets the thyroid glands and its hormone products-T3,T4 and TSH as threats ,therefore producing special antibodies .Thyroid autoantibodies appear mostly with presence of lymphocytes in that targeted organ. Lymphocytes produce antibodies targeting 3 different thyroid proteins-

Thyroid peroxidase antibodies[TPO Abs], Thyroglobulin antibodies[TgAbs], and Thyroid stimulating hormone receptors antibodies[TRAbs]. Specialists clinically separate autoimmune thyroiditis into two categories. if goiter is present-Hashimoto's thyroiditis and if goiter is not present-atrophic thyroiditis [5]. Autoimmune thyroiditis is considered a histologic diagnosis that can be subdivided into-lymphocytic thyroiditis if only lymphocytic infiltration is present and Hashimoto's thyroiditis if eosinophilic change and atrophy in thyroidal cells and fibrosis also seen [6]. Diagnostic features of Autoimmune thyroiditis on cytology as well as histology includes-dense thyroidal accumulation of lymphocytes, plasma cells and occasional multinucleate giant cells [7].

## MATERIALS AND METHODS

This study was carried out on a total of 44 cases presenting with thyroid disease. Blood was collected in two different vacutainers from BD [BECTONDICKINSON] for hormone estimation and serology under aseptic precautions. Thyroid hormones were estimated using standard kits provided by Biomereux France; on minividas instrument.

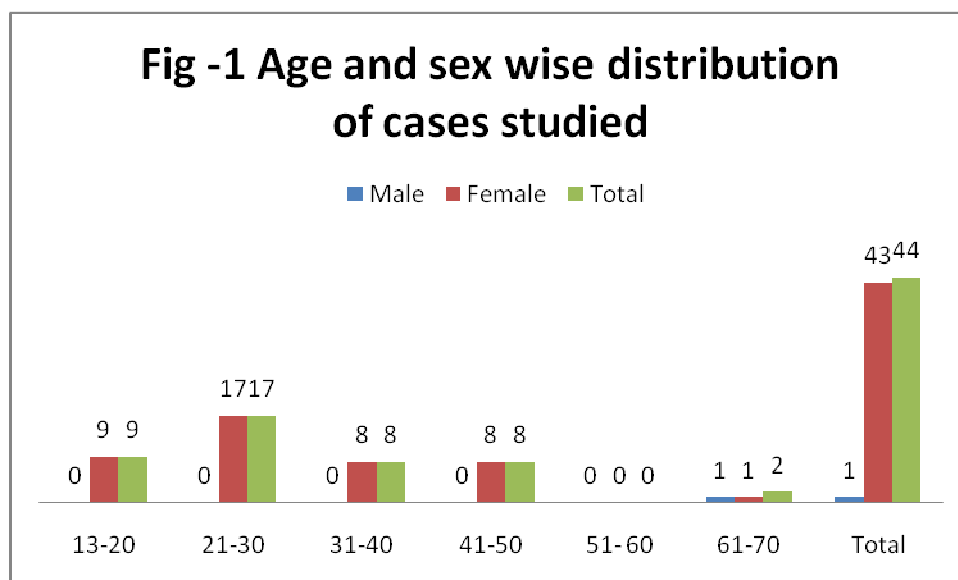
Antithyroid antibodies were estimated using elisa technique provided by Omega diagnostics UK. Test were run as per the manufacturer instructions and based on the principle of indirect elisa. FNA cytology was performed using standard precautions and FNA smears were stained and reviewed according to standard cytological features described in literature [8,9]. And results were tabulated in correlation with thyroid hormone levels, antithyroid antibodies and FNAC findings as below.

Ethics- written consent was taken from patients and study was duly approved by the hospital ethical committee.

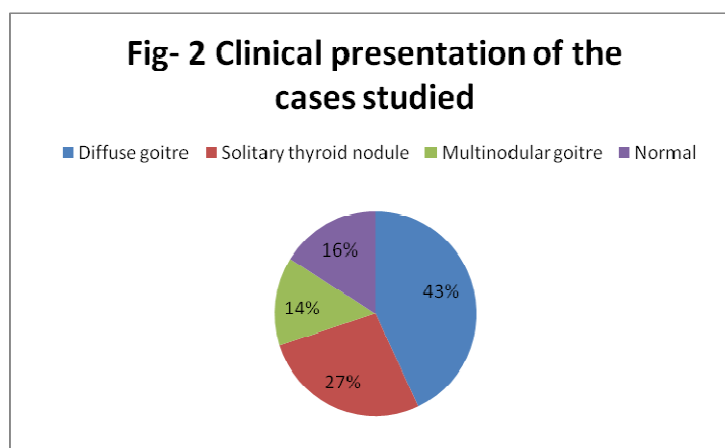
## RESULTS

Statistical analysis was done as percentage.

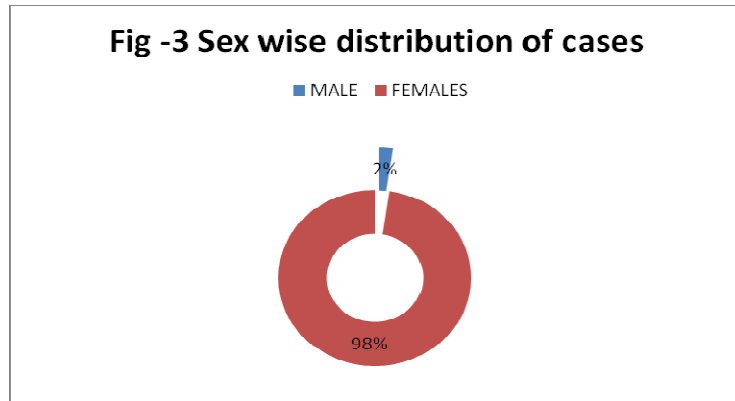
A total of 44 cases were studied over a period of one year. Females outnumbered male. Most affected age group noticed was 21-30 years followed by 31-40 yrs. Fig .1



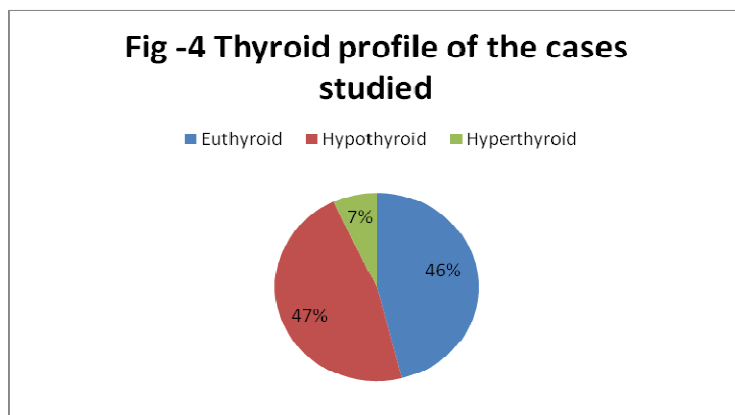
Clinically most of the cases presented as diffuse goitre followed by solitary nodule and multinodular goitre fig-2.



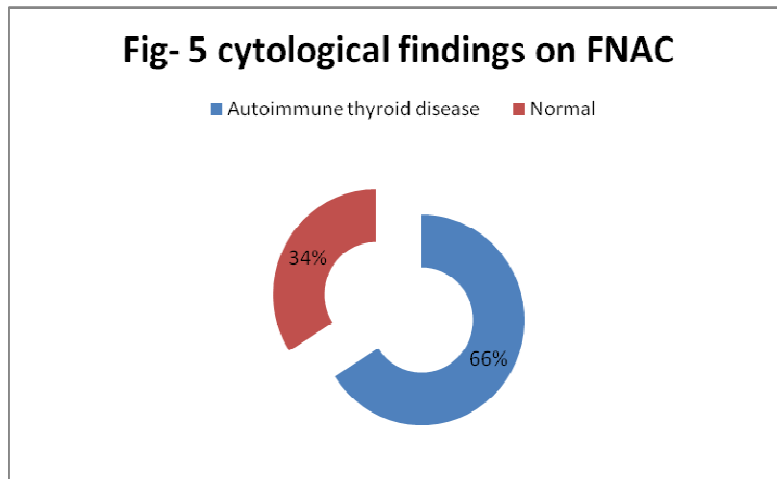
Female predominance was noted. F:M ratio being 43:1. Fig -3.

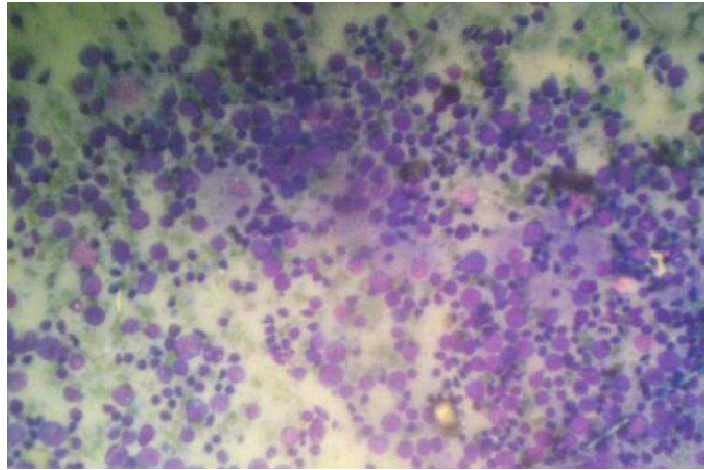


Thyroid profiles of the cases showed of the total 44 cases 20 were euthyroid , 21 were hypothyroid and 3 showed increased thyroxine levels fig -4.

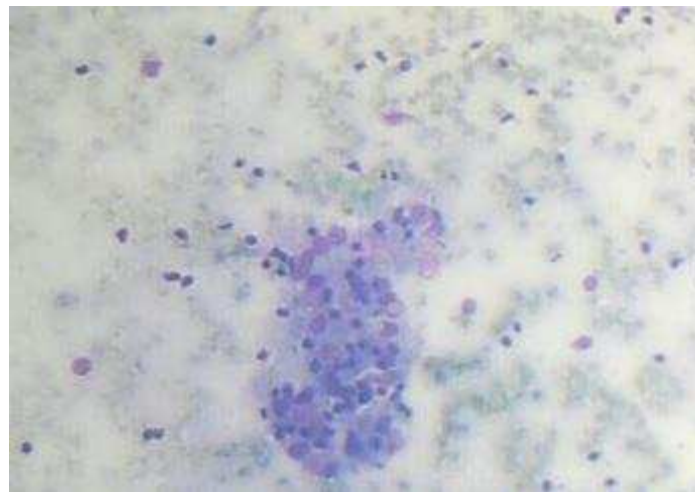


Cytological diagnosis of autoimmune thyroiditis was made in 29 cases . lymphocytic infiltration was seen along with plasma cells and few giant cells. fig -5



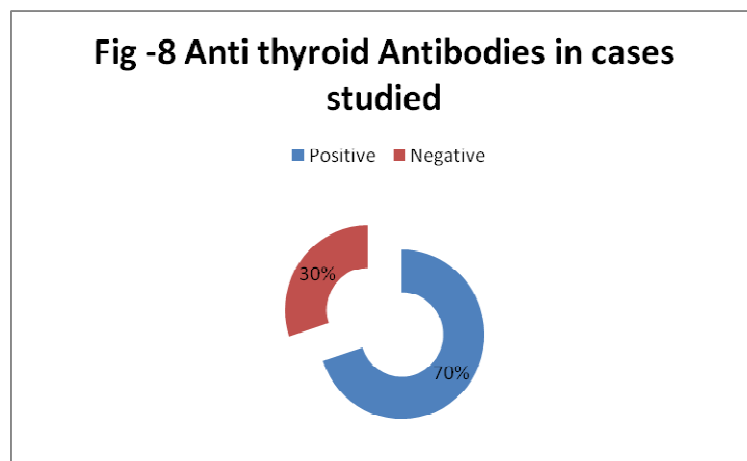


**Figure 6: Cellular smears showing mixed population of lymphoid cells, lymphohistiocytic aggregates and cohesive groups of follicular cells(100X)**



**Figure 7: Follicular epithelial cells with oncocytic features(100 X)**

Serological test for autoimmune thyroid disease with increased anti thyroid peroxidase antibodies and anti thyroglobulin were seen either alone or together in 31 cases. Fig -8



**DISCUSSION**

Autoimmune thyroiditis is a common chronic disorder of thyroid. Classically, the disease occurs as a painless, diffuse enlargement of thyroid gland in a young or middle aged woman.

It is often associated with hypothyroidism. The increasing use of needle biopsy [FNAC] and serological tests for antibodies have led to much more frequent recognition of this disease.

This may be the reason for increase in frequency [10]. In our study, most of the case who presented with autoimmune thyroiditis were young and belonged to the age group of 21-30 years and were predominantly females and very few cases were seen in >50 years of age. Similar findings were observed by Staii et al (2010), who reported most of the patients with autoimmune thyroiditis were predominantly premenopausal women [11] and Kapila et al (1995) reported maximum number of cases of autoimmune thyroiditis in age group of 16-35 years. [12]. In our study the most common mode of presentation was diffuse goiter followed by solitary thyroid nodule and multinodular goiter. Kapila et al (1995) also reported diffuse goiter to be the dominant clinical presentation in autoimmune thyroiditis followed by solitary nodule and multinodular goiter [12]. In our study thyroid profile of cases studied showed more of hypothyroid case 21, followed by euthyroid [20], only 3 cases showed increase in thyroxine levels. Kapila et al reported that majority of cases as euthyroid at presentation [12]. Similarly euthyroid state was also the commonest presentation in a study of southern Jordan reported by Esbeih A T et al [17].

### CONCLUSION

In the present study the number of cases studied is less but the findings are significant as the autoimmune thyroid disease is more common in females and that too predominantly in the younger age. Further we have seen a significant correlation between autoantibodies levels and cytological findings on FNAC. Conflict of interest - none

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