

Evaluation of Patients with Thyroid Diseases in Baquba City According to Thyroid Function Tests

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Abstract

Background: Thyroid gland is the largest endocrine gland which consists of right and left lobes connected by a narrow isthmus, the weight of this gland is 10-20g in normal adult. The function of thyroid gland is to secrete T₃, T₄ under control of TSH. Thyroid hormones help to regulate the body metabolism. Diseases of thyroid are common affecting 5% of population. The disease either changes in thyroid hormone secretion or structural changes such as in goiter with or without abnormal thyroid function.

Objective: To determine the common causes of thyroid diseases in Diyala province according to thyroid function tests.

Patients and Methods: A total number of 2973 patients presented with thyroid diseases at Baquba teaching hospital laboratory unit and private Ibn-alhaitham laboratory sending from specialized doctors, were included in this study 647 male and 2326 females.

Results: A total of 2973 patients were included in this study, 2326 (78.24%) were female, and 647 (21.76%) were males. According to thyroid diseases the results of percent work demonstrated that 2611 (87.82%) patients from total patients 2973 were euthyroid (normal thyroid function), 213 patients (7.16%) were hypothyroid and 149 patients (5.01%) were hyperthyroid. Statistical analysis revealed significant differences among them.

Conclusion: Thyroid disease is one of common endocrine diseases after diabetes mellitus, most thyroid diseases is euthyroid then hypothyroid followed by hyperthyroid. Thyroid diseases were more common in female than male.

Key words: Thyroid disease, thyroid hormones, Baquba city

Received: 20 April 2014

Accepted: 8 June 2014

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Introduction

The thyroid gland is butterfly-shaped and comprises two symmetrical lobes joined by central isthmus [1]. It is the largest endocrine organ in the body [2]. Its weight is 15-20g in adult [3]. It is made up of lobules, each comprising 20 to 40 spherical follicles which contain colloid [4]. The primary function of it is production of the hormones T₃, T₄, and calcitonin [5].

Production of these hormones is stimulated by TSH [6]. Iodide uptake is a critical first step in thyroid hormone synthesis [7].

Diseases of thyroid are common, affecting some 5% of the population, predominantly females [8].

There are many factors that affect and play a role in thyroid function. In developing countries many children are at high risk of

goiter and iron deficiency anemia .Because iron deficiency can have adverse effects on thyroid metabolism, iron deficiency may influence the response to supplemental iodine in areas of endemic goiter [9].

Iodine prophylaxis deficiency in areas of poor vitamin A status. Vitamin A supplements are effective in treating vitamin A deficiency in areas of mild iodine deficiency and have an additional benefit through suppression of pituitary TSH, vitamin A supplementation can decrease excess TSH stimulation of thyroid and thereby reduce the risk of goiter [10].

Iron supplementation in goitrous, iron deficient children improves their response to oral iodized oil -23.

Myxoedematous endemic cretinism is prevalent in African goiter endemics .Low Selenium and glutathione peroxidase serum levels have been found in African endemic area. Serum selenium is lower in the cretinism suggests selenium deficiency is a possible factor in the pathogenesis of myxoedematous endemic cretinism [11].

The importance of iodine and selenium in thyroid metabolism is well known. Copper and manganese level were found to be significantly higher in patient with multinodular goiter indicating links between these trace elements and thyroid function and possibly in development of goiter [12].

Aim of Study

The aim of study to determine the common causes of thyroid diseases in Baquba teaching Hospital and Ibn-Alhaithm lab during the period from first December 2008 to first November 2012.

Patients and Methods

The present study is retrospective study was conducted at Baquba teaching hospital, laboratory unit and Ibn-Alhaithm laboratory clinic to evaluate patient presented with goiter or patients had features of thyroid diseases according to thyroid function test (T3, T4 and TSH). During the period between December 2008 till November 2012.

After history taken and clinical examination Send those patients with goiters and thyroid disorders for thyroid function test were performed by ELISA (enzyme linked immunosorbant assay) technique for each one

Results

The study showed 647(21.76) were males and 2326(78.24) were females from a total of 2973 patients.

The TFT tests show:-euthyroid cases (normal thyroid function) 2611 patients (87.82%), 600 males and 2011 females as shown in table (1), 213cases (7.16%) with hypothyroid, 23 patients were males and 190 patients were females, 149 patients with hyperthyroid (5.01%), 24 patients were males and 125 were females.

Table (1): Distribution of cases according to Gender.

	No of Females	No of Males	Total No
No of patients	2326	647	2973
%	78.24%	21.76%	100%

Table (2): Distribution of patients according to according to the types of thyroid disease.

Types of thyroid disease	Males	Females	%
Euthyroid	600	2011*	87.82%
Hypothyroid	23	190*	7.16%
Hyperthyroid	24	125*	5.01%
Total	647	2326	100%

*Significant at $p < 0.05$

Discussion

Thyroid diseases a second common endocrine disease after D.M affect about 5% of population [8].

The present study showed that common types of goiter and thyroid gland disorders is euthyroid 87.82% of thyroid disorders, then followed by hypothyroid glands (7.16%). and hyperthyroid glands (5.01%).

Also in our study show the thyroid diseases more common in female (78.72%) than male (21.76%).

Our study agreement with a study done by Nicholas *et al* in london (2006) who showed the goitre, commonly occur without abnormal thyroid function (euthyroid) and it common affecting 5% of population [9].

Also our study agreement with another study done in Indian by Ambika *et al* (2011), who showed that about 12% of adults have a palpable goiter [13], the prevalence of hypothyroidism was 3.9%. The prevalence of subclinical hypothyroidism was also high in this study, the value being 9.4%. In women, the prevalence was higher, at 11.4%, when compared with men, in whom the prevalence was 6.2%.

The prevalence of hyperthyroidism has been studied in several countries. In an epidemiological study from Cochín, subclinical and overt hyperthyroidism were present in 1.6% and 1.3% of subjects participating in a community survey.

Another study done by David *et al* in British, also agree with our study that showed the most common thyroid disease in the community is

simple (diffuse) physiological goiter (euthyroid) [15].

The incidence of hypothyroidism more common than hyperthyroidism. These studies agree with my study.

A study done by Barton in Pakistan, who showed the hyperthyroidism more common than hypothyroidism. This study not agree with my study [14].

In my study show the incidence of thyroid diseases more common in females than males. Which is agree with all above studies

This simple difference in the ratios between our study and other studies and the rest of the same studies because of differences in the nature and type of eating and environmental factors, geographic Post an hereditary factors

Conclusion

Thyroid diseases common in Diyala province, the common type of thyroid diseases is euthyroid gland then hypothyroid and hyperthyroid. Thyroid diseases more common in females.

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