Research Paper

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Prevalence of Thyroid disorder in Males at Chitradurga District

Medical Science

KEYWORDS : T3, T4, TSH, Hypothyroidism, Hyperthyroidism, Nepal

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ABSTRACT

Background: Thyroid disorders are the most common endocrine disorders. Thyroid disorder may occur at any stage of life. They are more commonly encountered in the mid age and adulthood and affect women mostly.

Objectives: The objective of this study was to find out the prevalence of thyroid dysfunction among the male patients who attended the Basaveshwar Medical College & Hospital, Chitradurga, Karnataka.

Materials and Methods: A hospital based study was undertaken to evaluate the prevalence of thyroid dysfunction in male. The thyroid function tests, which included T3, T4 and TSH were done by using Chemiluminence assay Descriptive statistics and testing of the hypothesis were used for the analysis by using the EPI INFO and the SPSS version 16 softwares.

Results: The prevalence of thyroid dysfunction was 42.4%. Hypothyroidism and subclinical hypothyroidism was seen in 87.5% as compared to hyperthyroidism (12.5%). A higher prevalence of the thyroid dysfunction was observed in the subjects of age group above 60 years.

Conclusion: People of advanced ages were more vulnerable to thyroid dysfunction in the population. Hypothyroidism and subclinical hypothyroidism were preponderant, followed by subclinical hyperthyroidism.

INTRODUCTION

Thyroid dysfunction is a major public health problem among the Indian population [1]. It has been estimated that 0.2% of the deaths in India result from endocrine disorders, among which Iodine deficiency has been a major cause [2]. According to the WHO, greater than 190 million suffer from iodine deficiency disorders [3]. The thyroid disorders may be due to congenital factors, a genetic predisposition, inadequate levels of dietary iodine intake, pregnancy, radiotherapy, viral infections, surgery, underlying diseases such as infiltrative disorders, or even autoimmunity [4-6]. The objective of this study was to assess the prevalence of thyroid dysfunction in the male population

MATERIAL AND METHODS

The Study Design

This was a hospital based study which was conducted in the Department of Pathology, Basaveshwar Medical College & Hospital. In this prospective study, the male subjects who visited Basaveshwar Medical College & Hospital, from January 2013 to June 2013 were enrolled. All these patients were subjected for the thyroid function test, {i.e. Tri-iodothyronine (T3), Thyroxine (T4) and the thyroid stimulation hormone (TSH)}.

Collection of the Blood Samples

2.0 ml of venous blood was collected from the subjects who attended hospital. The blood which was collected in a plain vial was allowed to clot and it was centrifuged at 3000 rpm for 15 minutes. The separated serum was stored at -20^{o}C for the performance of hormone assays.

Assay of the Thyroid Function Panel

The thyroid function test panels (T3, T4 and TSH) were assayed by the electro Chemiluminence method (Cobas e 411) by using a standard kit.

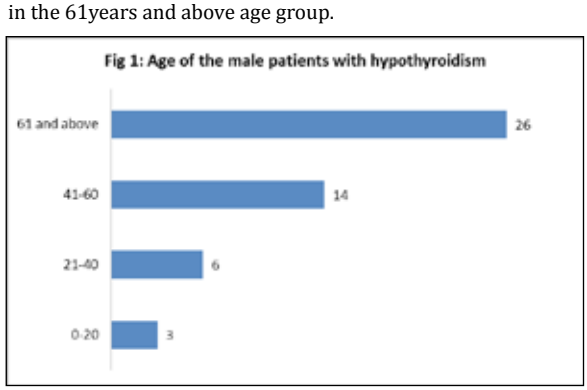
STATISTICAL ANALYSIS

The data were entered and analyzed by the Software Package for Social Sciences, version 16 (SPSS 16).

RESULTS

The subjects were classified according to their thyroid status as hypothyroidism and hyperthyroidism by taking the reference of the normal thyroid function test. Among the 132 subjects, 42.4% (n = 56) had thyroid dysfunction. Among the deformity subjects, 49 (87.5%) were total hypothyroid and 07 (12.5%) were total hyperthyroid. A high proportion of the subjects were suffering from hypothyroidism and sub-clinical hypothyroidism.

[Fig-1] represents the distribution of hypothyroidism with the various age groups. Among the different age groups, the highest number of subjects lay between the age group of 61-above years. A high degree of total hypothyroidism was also observed in the 61years and above age group.



DISCUSSION

The estimates of the prevalence of thyroid dysfunction depend upon the methodological factors, the classifications of hypothyroidism, and the composition of the community, which are examined by age, ethnicity, and gender, making comparisons between the studies of limited value. The prevalence and the pattern of hypothyroidism depend on ethnic, geographic, and environmental factors, which include the iodine intake status. This study was carried out to evaluate the incidence of thyroid dysfunction among the male patients visiting medicine outpatient department. The prevalences dysfunction of thyroid was 42.4% among the male patients which is very high when compared to other studies across the world. The prevalence of hypothyroidism in various studies from around the world shows a considerable variation and its current prevalence ranges from as low as 1% to as high as 20% among male patients [7]. This high prevalence in our study could be due to small sample size. The prevalence of hyperthyroidism and hypothyroidism were 12.5% and 87.5% respectively. The prevalence of hypothyroidism was higher than that of hyperthyroidism in this study. Hypothyroidism is generally associated with iodine deficiency and Chitradurga district is an endemic area of iodine deficiency and this may be exacerbated due to the geographical structure and the food habits.

Furthermore, hypothyroidism is the most common thyroid disorder in the adult population and it is more common in older population. 46.4% of male patients were of the age group more than 60 years [8]. However, the thyroid dysfunction in elderly

individuals often goes unnoticed, and the methods for an accurate detection may be controversial [9]. Hypothyroidism is usually autoimmune in origin, presenting as either primary atrophic hypothyroidism or Hashimoto's thyroiditis and rarely, can pituitary or hypothalamic disorders result in secondary hypothyroidism [8]. By contrast hyperthyroidism is much less common as compared to hypothyroidism. Graves' disease is the most common cause and it primarily affects young adults. Toxic, multi-nodular goitres tend to affect the older age groups [8]. 18 individuals of age group greater than 60 years had multi nodular goitre.

CONCLUSION

As the present study was a hospital based study, it may not represent the whole population. But, it has identified the burden of thyroid dysfunction in the male population and this can be used as a baseline data for future studies. The present study has revealed the high prevalence of thyroid dysfunction; typically, hypothyroidism and subclinical hypothyroidism were higher. Moreover, the diseases were preponderant in the elderly men.

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