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Prevalence of thyroid disorder in male and female in Ranchi

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Abstract

Thyroid disorder is the second most endocrine disorder in India after Diabetes Mellitus. According to recent report 300 million people suffering from thyroid disorder across the world among them about 42 million are Indian people. There are various factors which affects the prevalence of thyroid disorder such as age, sex, genetic makeup, geographical structure, dietary pattern, and lifestyle and iodine intake. Jharkhand is still now an iodine deficient state, but here no more study done regarding the prevalence of thyroid disorder. Proportion of thyroid disorder is more common in females than male it was seen in various research study done in different states of the India so keep in mind above point a community based study done In Ranchi district of jharkhand.in this study we found that the prevalence of Hypothyroidism, subclinical hypothyroidism, hyperthyroidism and euthyroidism in both sexes are 5.5%, 11.5%, 1% and 81.5% respectively. Separately in female hypothyroidism, subclinical hypothyroidism, hyperthyroidism and euthyroidism are 4.5%, 8.5%, 1% and 35.5%, where as in male this rate is 2.5%, 3.5%, 0% and 44%. Weight gain, diarrhea, constipation, hair loss, irregular periods and miscarriage sign symptoms and complications seen in this study.

Keywords: Hyperthyroidism, subclinical hypothyroidism, hyperthyroidism, euthyroidism

Introduction

Thyroid disorder are the commonest endocrine problem across the world. Globally the proportion of thyroid disorders such as hypothyroid and subclinical hypothyroid is about 4-5% and 4-15% respectively. The most common cause of hypothyroid and goiter is deficiency of iodine. According to Patro *et al.* Jharkhand to be an iodine deficient area low intake of iodine is associated with higher prevalence of hyperthyroidism and high intake leads to higher prevalence of hypothyroidism. Since 1983 Indian government adopted a universal salt Iodination programmer which was very fruitful but still now hypothyroidism and subclinical hypothyroidism is a significant burden here. There are so many research data available in different parts of the country which shows that prevalence of thyroid disorder is more common in females than males. The incidence is 10 to 15% more in females as compare to males [6]. Hypothyroidism is 10 times more common in females than males. Subclinical hypothyroidism is a common disorder with a prevalence of about 7 to 8% in women (most frequently in females over 50 years), and about 3% in men [10]. Hypercholestremia, weight gain, depression, missed periods, increased risk of miscarriage, fatigue are the complications related to hypothyroidism whereas weight loss, palpitation, myopathy, diarrhea, associated with hyperthyroidism. Euthyroidism is proper functional state of thyroid gland. In Jharkhand still no sufficient data is available regarding thyroid disorder this point of view this study has been made.

Materials and Methods

Patient and study design: A community based retrospective study from Nov 2018 to 2022 August. Total 200 blood samples collected from the community respondent out of which 100 male and 100 females between the age group of 20 years to 40 years, in the Ranchi district of Jharkhand.

Sampling Technique: To collect the data Quota sampling technique is adopted.

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Blood Sample collection: Blood sample collected in empty stomach, from antecubital vein of the respondents with the help of professional phlebotomist and tested in laboratory.

Thyroid profile test done in lab I.e. T.S.H, T₃ and T₄.

Demographic information: Collected through schedule/ interview method.

Table 1: Proportion of Thyroid Disorder in total sample according to Gender

Thyroid Status	Total No. N=200	%	Female N=100	%	Male N=100	%
Hypothyroidism	11	5.5%	9	4.5%	5	2.5%
Subclinical Hypothyroidism	23	11.5%	17	8.5%	7	3.5%
Hyperthyroidism	2	1%	2	1%	0	0%
Sub hyperthyroidism	1	0.5%	1	0.5%	0	0
Euthyroidism	163	81.5%	71	35.5%	88	44%

Result and Discussion

In this study we found that thyroid disorder is more prevalent in female than in male. Table no 1 shows that the prevalence of hypothyroidism, subclinical hypothyroidism and euthyroidism in both sexes are 5.5%, 11.5%, and 81.5% respectively. Separately the prevalence of hypothyroidism is 4.5%, subclinical hypothyroidism 8.5%, hyperthyroidism 1% and euthyroidism is 35.5% in females, whereas in males this proportion is hypothyroidism 2.5%, subclinical hypothyroidism 3.5%, hyperthyroidism 0% and Euthyroidism 44% respectively. According to research data of Takashi, *et al.* hypothyroidism ratio in male: female is 1:6, which is lower than present study, in present study Male: Female ratio of hypothyroidism is 1:1.8 and present subclinical hypothyroidism ratio in Male: Female 1:2.4.

disorder, therefore present study done in Ranchi district of Jharkhand. Where we found that prevalence of thyroid disorder is more common in Jharkhand both male and female similar other state of India. Prevalence of hypothyroidism, subclinical hypothyroidism, and hyperthyroidism are more prevalent but in spite of male proportion of hypothyroidism and Subclinical hypothyroidism is more in female i.e. 1:2 and 1:3 respectively. Lack of awareness in the respondents is seen during study which is a significant burden for the community so need a proper awareness to prevent further complications associate with these disorder.

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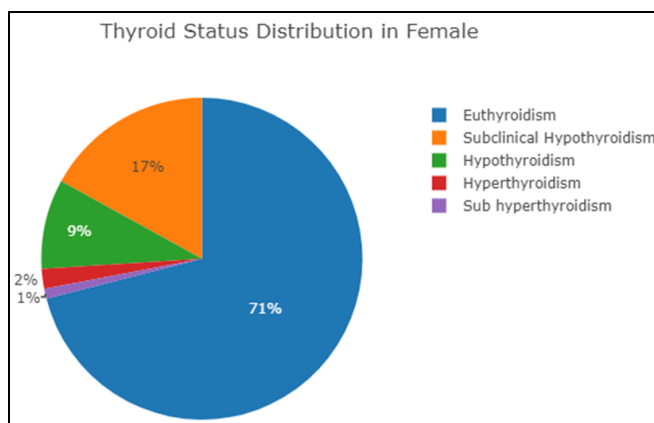


Fig 1: Graphical presentation of prevalence of thyroid disorder in Female

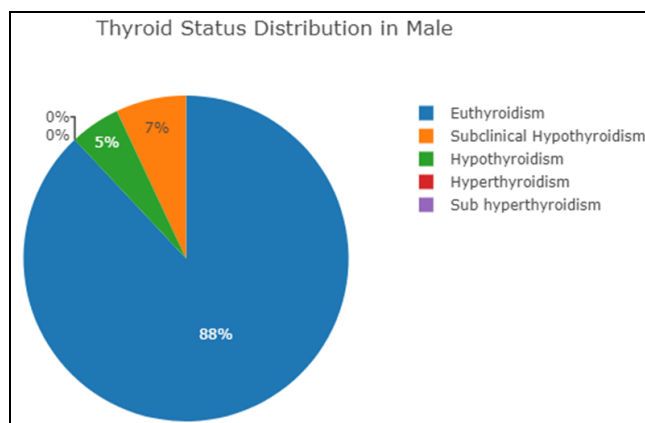


Fig 2: Graphical presentation of prevalence of thyroid disorder in Male

Conclusion

Jharkhand is an iodine deficient state but still there is not sufficient data available regarding prevalence of thyroid

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