



## MENSTRUAL ABNORMALITIES IN THYROID DISEASE IN INDIAN POPULATION

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### ABSTRACT

**Objective:** To determine whether there is Statistical difference in Gynaecological symptom of Patients who have thyroid stimulating hormone greater and less than 2.5 mIU. **Method.** Four hundred patients with menstrual symptoms in reproductive age group who presented in Gynecological O.P.D were evaluated for their thyroid function. Those patients whose TSH was greater than 2.5 were made a single group. Their symptoms were compared with those which had TSH less than 2.5. It was found out there is statistical significant difference in symptoms of both age group. Requirement of T SH has been changed for first trimester of pregnancy. This cutoff has been reduced to 2.5mIU. This change has been necessitated to improve pregnancy outcomes. The target organ is the Uterus and ovaries. A study was carried out to see the prevalence of Subclinical hypothyroidism in Gynecological population with TSH > 2.5. This was compared with Gynecological group whose TSH was less than 2.5 mIU. The presence of Abnormal Uterine Bleeding and their statistical significance was compared in this group.

**KEYWORDS:** Gynaecological symptom, TSH.

### MATERIAL AND METHODS

Total of 400 patients in reproductive age group with Abnormal Uterine bleeding who presented to Gynae O.P.D were evaluated. Their age, parity, contraceptive history and detailed menstrual history was taken. They were clinically examined to rule out any gross pathology. They were investigated for Hgm, Bt, CT and Thyroid function test. These patients were grossly divided into four groups. Those with TSH between 0.4 to 2.5 as Euthyroid. Those with TSH greater than 2.5 to 10 but T3

and T4 levels within normal limits as Subclinical Hypothyroidism. Patients whose TSH was greater than 2.5 and whose T3 or T4 levels were also decreased were classified as clinical Hypothyroidism. Those patients whose T.S.H was less than 0.4 and high T3, T4 levels more than normal limits.

### RESULTS

The symptoms of four groups were analyzed with regard to age, parity. There was no statically significance.

Table. 1: Age wise comparison of Euthyroid patients with Thyroid dysfunction patients (Calculate Horizontal P Values).

| Age group (in yrs)      | Euthyroid<br>n(%) | Subclinical<br>Hypothyroid n( %) | Clinical Hypothyroid<br>n( %) | Hyperthyroid<br>n( %) | Total Thyroid<br>Dysfunction | Total cases<br>n (%) | P value = 0.15<br>Chi square value = 9.44 |
|-------------------------|-------------------|----------------------------------|-------------------------------|-----------------------|------------------------------|----------------------|-------------------------------------------|
| 15-24                   | 60(21.5)          | 21(20.2)                         | 2(16)                         | 1                     | 20(15.8)                     | 76                   |                                           |
| 25-34                   | 104(38.3)         | 41 (39.2)                        | 5 (24)                        | 5                     | 46 (36.1)                    | 149                  |                                           |
| 35-50                   | 109(40.1)         | 42 (40.5)                        | 7 (60)                        | 3                     | 61 (48.1)                    | 175                  |                                           |
| <b>P Value</b>          |                   | <b>0.97</b>                      | <b>0.17</b>                   | <b>0.04</b>           |                              |                      |                                           |
| <b>Chi-square value</b> |                   | <b>0.056</b>                     | <b>3.56</b>                   | <b>6.3</b>            |                              |                      |                                           |

Table. 2: Association of menstrual disorders with thyroid function.

| Menstrual complaint | Euthyroid        | Subclinical<br>Hypothyroid | Clinical<br>Hypothyroid | Hyperthyroid   | P value = <0.0001(Highly<br>significant)<br>Chi square = 45.0388 |
|---------------------|------------------|----------------------------|-------------------------|----------------|------------------------------------------------------------------|
| Menorrhagia         | 130(47.3)        | 59 (56.9)                  | 5 (36)                  | 0 (0)          |                                                                  |
| Hypomenorrhoea      | 35 (12.6)        | 8 (7.6)                    | 3 (24)                  | 6 (68.9)       |                                                                  |
| Oligomenorrhoea     | 17 (6.6)         | 11 (10.1)                  | 2 (8)                   | 3 (31.1)       |                                                                  |
| Polymenorrhoea      | 23 (10.8)        | 18 (17.7)                  | 4(28)                   | 0 (0)          |                                                                  |
| Metrorrhagia        | 68 (22.8)        | 8 (7.6)                    | 0 (0)                   | 0 (0)          |                                                                  |
| <b>Total</b>        | <b>273 (100)</b> | <b>104 (100)</b>           | <b>14 (100)</b>         | <b>9 (100)</b> |                                                                  |

**Table. 3: Distribution according to thyroid function among patients presenting with Menorrhagia.**

| Thyroid Function        | Present n (%)    | Absent |
|-------------------------|------------------|--------|
| Euthyroid               | 130 (47.3)       | 143    |
| Subclinical Hypothyroid | 59 (56.9)        | 44     |
| Clinical Hypothyroid    | 5 (36)           | 9      |
| Hyperthyroid            | 0 (0)            | 9      |
| <b>Total</b>            | <b>194 (100)</b> | 205    |

P value 0.0177 Chi square test 10.1027 P<.05  
Highly significant.

## DISCUSSION

Thyroid hormone is one of Important Hormone responsible for the proper function of Uterus and Ovaries. It has been found that absence of thyroid hormone reduces the Endometrial volume and Uterine Muscle mass<sup>[1]</sup>. On the base of published studies, mostly from western countries, either the guidelines sponsored by the American Thyroid Association or by the American Endocrine Society suggested the following reference range: first trimester, 0.1 to 2.5 mU/l; second trimester, 0.2 to 3.0 mU/l; third trimester, 0.3 to 3.0-3.5 mU/l. By lowering the Threshold of TSH in those desiring pregnancy and in First Trimester, It has been observed that Incidence of fetal wastage is less and pregnancy outcomes are better.<sup>[2,3-4]</sup>

Taking the thesis that mild deficiency of Thyroid hormone can effect the function of endometrium, we carried out a observational study. In this study Subclinical Hypothyroidism was diagnosed when the TSH was greater than 2.5mIU. In this we simply observed menstrual complaints in these patients. These complaints were compared to those with TSH less than 2.5(Euthyroid), Clinically Hypothyroid, and Hyperthyroid patients.

In this study 273 patients were Euthyroid and 127 (31%)patients had Thyroid disorder. 104(26%) patients were classified into sub clinical Hypothyroidism. This is more than in other studies. It is more because the threshold for classifying Subclinical Hypothyroidism has been lowered to 2.5 from 4.5. The incidence of subclinical Hypothyroidism in Indian Population has been reported to be between 8.2% and 19%.<sup>[5-6]</sup> The prevalence of Thyroid disease varies with region. It is around 4% in China and 13.4% in Northern Spain. The Incidence of Overt Hypothyroidism and Hyperthyroidism is same in our study as is in other Indian studies.<sup>[7-8]</sup>

There were 130(47.3) patients of Menorrhagia in Euthyroid group verses 59(56.9%).This difference is statistically significant. As shown in table 2 the difference in Hypomenorrhea, Poymenorrhea, Oligomenorrhea and Metrorragia is statistically different in both groups. Women in 35-50 years age group had maximum thyroid dysfunction i.e. 64 out of 133 cases

(48.1%) while women in 15-24 years age group had minimum i.e. 21 cases (15.8%) of thyroid dysfunction. Thus according to this study thyroid dysfunction becomes more common as the age advances. However it was not statistically significant.<sup>[9]</sup>

In a study of 189 hypothyroid women to find out their menstrual pattern and fertility status. As many as 91 patients (71.09%) had subclinical hypothyroidism; 46.87% had normal menstrual pattern.<sup>[10-11]</sup> Our study also shows a similar pattern. Menstrual aberrations included mainly, Oligomenorrhoea, Hypomenorrhoea, Menorrhagia and secondary Amenorrhoea. Oligomenorrhoea was the commonest menstrual abnormality found mainly in early age group women. Menorrhagia was commoner in later age group.<sup>[12]</sup> In this study author has commented that "as majority of cases are subclinical, it is essential to evaluate thyroid function in all women with intractable menstrual disorders, infertility and recurrent pregnancy loss.

Abnormal uterine bleeding is a common gynecologic disorder that can affect any woman during her reproductive years. Etiology of DUB is very diverse. Thyroid disorders in general and hypothyroidism in particular is one of the common causes of excessive menstrual blood loss and menstrual irregularities. It is recognized universally that menstrual disturbances may accompany and even may precede thyroid dysfunction. Furthermore Menorrhagia may be the only presenting complaint in hypothyroid women. Hence in investigating a patient with Menorrhagia and/or menstrual irregularities, evaluation of thyroid functional status forms an essential component.<sup>[9]</sup>

From the above study we can safely conclude that menstrual complaints are different in Euthyroid group and those with Subclinical Hypothyroidism. Since Abnormal Uterine bleeding contributes to significant proportion in Gynecological patients, it opens up the possibility of medical intervention in more patients to correct this Disease.

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