



## Role of Thyroid Dysfunction in Patients with Menstrual Disorders in A Tertiary Care Centre of Thoothukudi

### KEYWORDS

menstrual disorders , thyroid dysfunction, subclinical hypothyroidism, thyroid autoimmunity.

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**ABSTRACT** The aim of the study was to study the prevalence of thyroid dysfunction and its correlation with menstrual disorders. This study was conducted in the Department of Obstetrics and gynaecology, Thoothukudi Medical College, Thoothukudi. A total of 200 women between 15 and 45 years who attended gynaec OPD. were included for this cross sectional study. The study group comprised 100 women with menstrual complaints. The control group included 100 women without menstrual problems. Thyroid function tests and endometrial sampling were done in all patients. On endometrial sampling hypothyroid patients mainly had proliferative endometrium (48%) whereas hyperthyroid women had atrophic endometrium (33.3%). Thyroid dysfunction is an important causative factor for menstrual dysfunction. Assessment of thyroid function should be done in all patients with menstrual abnormalities to avoid unnecessary interventions like curettage and hysterectomy.

### Introduction

Menstrual disorders pose a huge burden on Gynaecology OPD, accounting for approximately 25% of attendance<sup>1</sup>. Thyroid hormone plays an important role in normal reproductive physiology through direct effects on the ovaries and indirectly by interacting with sex hormone binding globulin. Thyroid dysfunction can lead to menstrual irregularities and infertility<sup>2</sup>. In India thyroid disorders are the most common endocrine diseases<sup>3</sup>. Onset of thyroid disorders increases with age, and it is measured as 26% of premenopausal women and menopausal women are diagnosed with thyroid disease<sup>4</sup>. Thyroid disorders are more common in women than in men and in older adults when compared with younger age groups<sup>5</sup>. Hypothyroidism is associated with wide spectrum of reproductive disorders ranging from abnormal sexual development, menstrual irregularities, and infertility<sup>6</sup>. Subclinical hypothyroidism has been associated with occult menorrhagia before becoming symptomatic<sup>7</sup>. The prevalence of subclinical hypothyroidism is as high as 9.5% in women<sup>8</sup>.

Hyperthyroidism occurring before puberty has been reported to delay the onset of menses<sup>9</sup>. In women of fertile age group, oligomenorrhoea and amenorrhoea are the commonest abnormalities associated with hyperthyroidism<sup>9</sup>. Timely detection of thyroid disorder in patients presenting with menstrual disorders and their management can prevent surgical interventions like curettage and hysterectomy.

### Materials and methods

The present study was conducted in the department of Obstetrics and Gynaecology, government thoothukudi medical college thoothukudi during the period of July 2015 to June 2016, in 200 women of reproductive age group from 15 to 45 years were selected. Study group comprised of 100 women with menstrual disorders like menorrhagia, oligomenorrhoea, polymenorrhoea, metrorrhagia, and amenorrhoea. Another 100 women as control group with no menstrual problems but with other gynaec complaints. Patients with organic pelvic pathology were excluded from

the study. After taking detailed history regarding age, parity, through menstrual history, general examination, abdominal and pelvic examination were carried out in the study group. They underwent quantitative determination of T3, T4, TSH, trans abdominal scan and hysteroscopy wherever indicated.

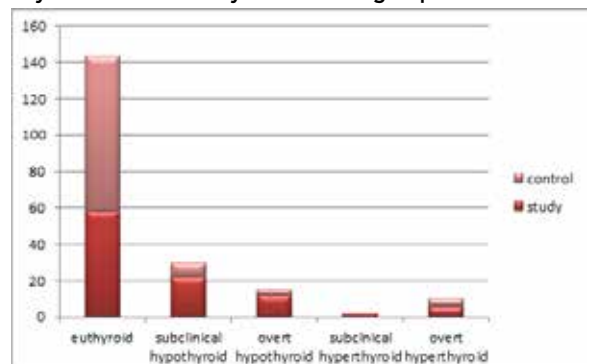
### Results

The study and control groups were comparable in respect of age, religion and socioeconomic status.

Out of all the types of menstrual irregularities, 55 patients presented with menorrhagia, 15 of them had hypo/oligomenorrhoea, 17 women had polymenorrhoea, 12 had metrorrhagia and 1 had amenorrhoea.

85% of women were found to be euthyroid in the control group, while in the study group 58% were euthyroid and rest 42% were associated with some or other forms of thyroid dysfunction.

**Fig- 1**  
Thyroid status in study and control group

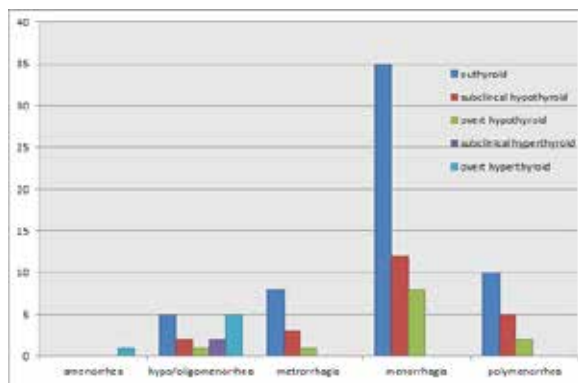


Thyroid dysfunctions were also found in 15% of cases of control group. Hypothyroidism was the commonest ab-

normality as seen in 34% of cases in the study group, out of which 22% had subclinical hypothyroidism, while in the control group, hypothyroid was present in 11% of patients. 8% of women in study group were hyperthyroid (2% were subclinical hyperthyroid and 6% were overt hyperthyroid), while it was 4% in the control group. The difference was statistically significant.

Among the patients with hypo/oligomenorrhoea

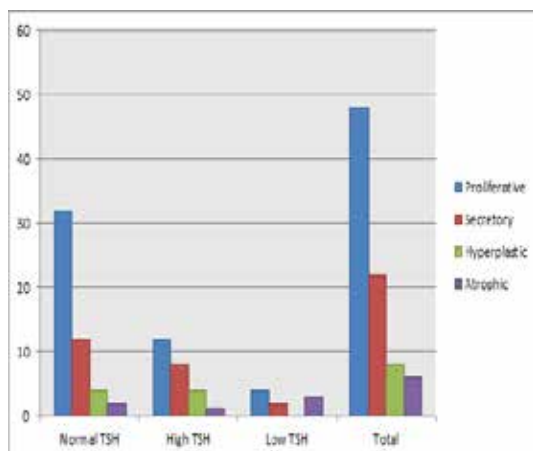
**Fig 2**  
Correlation of thyroid dysfunction with menstrual disorders



2 (13.3%) patients had subclinical hypothyroidism, 1 (6.6%) patient had overt hypothyroidism, 2 (13.3%) patients had subclinical hyperthyroidism and 5 (33.3%) patients had overt hyperthyroidism. Among the patients with metrorrhagia, 3 (25%) patients had subclinical hypothyroidism. Among the patients with menorrhagia, 12 (21.8%) patients had subclinical hypothyroidism and 8 (14.5%) had overt hypothyroidism. Among the patients with polymenorrhoea, 5 (29.4%) patients had subclinical hypothyroidism and 2 (11.7%) had overt hypothyroidism.

Among the patients with high TSH level

**Fig 3**  
Correlation of histopathological finding with TSH level



12 (48%) patients had proliferative endometrium, 8 (32%) patients had secretory endometrium, 4 (16%) patients had hyperplastic endometrium, and 1 (0.04%) had atrophic endometrium. Among the patients with low TSH level, 4 (44.4%) patients had proliferative and 2 (22.2%) patients had secretory endometrium, and 3 (33.3%) patients had atrophic endometrium.

So, we can see that atrophic endometrium is the commonest histopathological finding in women with hyperthyroidism and proliferative endometrium with hypothyroidism.

## Discussion

Thyroid disorders in general and hypothyroidism in particular are the common causes of menstrual disturbances in women. Menarche, pubertal growth and development, menstrual cycles, fertility and fetal development, post-partum period, reproductive years, and post-menopausal years are profoundly influenced by the thyroid status of women. It is recognized universally that menstrual disturbances may precede thyroid dysfunction.

Menorrhagia was the most common complaint among the patients with menstrual disorders, and most of the patients in other groups presented with white discharge in our study. Similar were observations of Pahwa<sup>11</sup> and padmaleela<sup>12</sup>, where menorrhagia was the most common complaint.

In our study, the prevalence of hypothyroidism and hyperthyroidism in patients with menstrual disorders is almost two times higher than in the control population. In study by kaur<sup>10</sup>, out of 100 patients studied 14 had hypothyroidism. In the study by sharma<sup>7</sup>, prevalence of hypothyroidism was detected in 20% of patients of DUB, and hyperthyroidism in 14%. In the study by pahwa<sup>11</sup>, 22% cases of hypothyroidism and 76% of euthyroidism were reported, whereas padmaleela<sup>12</sup> observed thyroid disorders in 26.5% of patients of DUB. The prevalence of hyperthyroidism was 8.4% among the DUB patients as assessed by the findings of their thyroid function tests. Gowri<sup>13</sup> found 17.6% women with hypothyroidism, 2.7% with subclinical hypothyroidism, and 4.7% with hyperthyroidism which is similar to our study.

In our study, of total 34 hypothyroid patients, most of the patients had menorrhagia followed by polymenorrhoea, hypo/oligomenorrhoea and metrorrhagia. Kaur<sup>10</sup> observed that among 14 hypothyroid patients 9 had menorrhagia, 3 had oligomenorrhoea and 2 had metrorrhagia. Pahwa<sup>11</sup> found a total of 22 hypothyroid patients, in which 16 had menorrhagia and 4 had polymenorrhoea. In the study by padmaleela<sup>12</sup>, the commonest menstrual complaint was menorrhagia followed by polymenorrhoea and 20% had hypo/oligomenorrhoea in hypothyroid patients, which goes with our study. Among five hyperthyroid patients, the commonest complaint was hypo/oligomenorrhoea followed by amenorrhoea. In the study by kaur<sup>10</sup>, the patient with hyperthyroidism was found to have hypomenorrhoea. Pahwa<sup>11</sup> found that of two hyperthyroid patients both had menorrhagia. In the study by padmaleela<sup>12</sup>, among the hyperthyroid patients, 42.8% had menorrhagia, 28.6% had polymenorrhoea, and 14.3% had hypo/oligomenorrhoea.

In the study group, we found proliferative endometrium in most of the patients on endometrial sampling followed by secretory endometrium in hypothyroid patients. In hyperthyroid patients, maximum number of patients had atrophic endometrium. In the study by kaur<sup>10</sup>, 9 hypothyroid patients had proliferative endometrium, 3 had endometrial hyperplasia, and the rest 2 had secretory endometrium. Sharma<sup>7</sup> found 36.36% proliferative, 36.36% secretory and 27.27% atrophic in hypothyroid patients. In hyperthyroid patients they found 42.84% proliferative, 28.56% secretory and 14.28% hyperplastic endometrium on his histopathological examination. In the study by padmaleela<sup>12</sup>, the most common finding in histopathological examination was proliferative endometrium both in hypothyroid and hyperthyroid cases. Cystic glandular

hyperplasia was found only in 13.3% and secretory endometrium in 26.7% of the hypothyroid patients.

## CONCLUSIONS

From our study it may be concluded that there is a strong correlation of thyroid dysfunction with menstrual disorders. In the patients with menstrual dysfunction, if thyroid disorders are timely diagnosed and treated, the menstrual irregularities settle, and unnecessary intervention like hormonal treatment and surgery can be avoided. The menstrual abnormalities most commonly seen are menorrhagia followed by hypo/oligomenorrhea and polymenorrhea. Since thyroid dysfunction is an important treatable cause of menstrual disorder, estimation of thyroid status should be a part of investigations being done in patients with menstrual disorders. The prevalence of subclinical hypothyroidism in patients with menstrual disorders emphasizes the need to detect hypothyroidism at this stage, so that treatment can be initiated and progression to overt disease be slowed down as a part of management of menstrual disorders.

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