

# Study of Thyroid Dysfunction in Premenopausal Women with Abnormal Uterine Bleeding

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**Abstract:** ***Objective:**To evaluate incidence of thyroid dysfunction in abnormal uterine bleeding and to assess the menstrual patterns in women with thyroid disorders. **Material & Methods:** Present prospective study was conducted on 113 patients who presented with abnormal uterine bleeding at Kamineni Institute of Medical Sciences, Narketpally. **Results & Discussion:** Among 113 women, 43 had hypothyroidism, 9 patient had hyperthyroidism rest 61 were euthyroid. Of 43 hypothyroid patients, 27(62.3%) had menorrhagia, 4 had oligomenorrhea and 9 patient with hyperthyroidism was found to have oligomenorrhea & Hypomenorrhoea. Woman with hypothyroidism, commonly presents with anovulation and unopposed oestrogen activity causes endometrial hyperplasia which may outgrow the blood supply and may cause local areas of necrosis that breaks down and produces bleeding. **Conclusion:** The menstrual irregularities are significantly more frequent in patients with thyroid dysfunction and menorrhagia was the commonest menstrual abnormality. The study concludes that biochemical evaluation of thyroid function should be made mandatory in all cases of AUB.*

**Keywords:** Abnormal uterine bleeding (AUB), Endometrial hyperplasia, Menorrhagia, Thyroid dysfunction.

## 1. Introduction

Abnormal uterine bleeding is a common but complicated clinical presentation. It is one of the most frequently encountered conditions in gynecology and is defined as abnormal bleeding from the uterus. It occurs in 9-14% of women between menarche and menopause, significantly impacting quality of life and imposing financial burden.[1] Thyroid dysfunction causes a broad spectrum of reproductive disorders ranging from abnormal sexual development to menstrual irregularities, infertility and premature menopause.[2]

Thyroid disorders are 10 times more common in women, these high prevalence of thyroid disorders in women is possibly due to autoimmune nature of thyroid disorders.[3] At extremes of the reproductive years, irregular cycles resulting from anovulation can occur. Following menarche, the immature hypothalamic-pituitary-ovarian axis may result in anovulatory cycles for two to three years.[4,5]

Up to eight years before menopause, women may again have intermittent anovulatory cycles.[4,5] During the rest of the reproductive years, however, recurrent irregular cycles may be caused by anovulation and are considered abnormal.[6] It is recognized universally that menstrual disturbances may accompany clinical alterations in thyroid function, and every clinician has encountered altered menstrual patterns among women suffering from hypothyroidism and hyperthyroidism. Hyperthyroidism reduces menstruation and hypothyroidism causes menorrhagia. Hyperthyroidism in contrast is associated with a menorrhagia and oligomenorrhoea and the decrease in flow is proportional to the severity of the thyrotoxicosis. Hence present study was undertaken to evaluate the thyroid function in patients having abnormal menstrual bleeding.

## 2. Material & Methods

Present study was conducted in Kamineni Institute of Medical Sciences, Narketpally, Nalgonda Dist, Telangana, India from July 2014 to June 2015. It was a prospective study conducted on 113 premenopausal women who were presented with abnormal uterine bleeding to the outpatient department.

### Inclusion Criteria

- All premenopausal women with AUB.

### Exclusion Criteria:

- Refusal for participation in study
- Women who are on drugs (like antiepileptic, antipsychotic etc) or hormone therapy.

All patients were informed in detail about aim, objectives of study and written consent was taken. A detailed gynaecology history was obtained regarding age, bleeding pattern, onset, duration, quantity of bleeding and complaints related to thyroid dysfunction were noted in detail. A thorough clinical examination including general physical examination, neck examination, systemic and gynecologic examinations were done. All the recruited patients were subjected to routine investigations like hemoglobin, ESR, LFT, RBS, complete urine examination, bleeding time, clotting time, chest x-ray, ultrasound abdomen and pelvis, pap smear, endometrial biopsy. Then all patients were subjected to T3, T4 and TSH. T3 and T4 were assayed by competitive chemiluminescent immunoassay. TSH was estimated by ultra sensitive fully automated chemiluminescent immunoassay. With the introduction of Serum Free T4 and TSH radioimmunoassay has increased the sensitivity and specificity of thyroid function testing. The Serum TSH assay has been shown to be a sensitive indicator of diminished thyroid function reserve since TSH levels become elevated before circulating Thyroxine levels fall below the normal range.[7] Patients

with TSH level >7 IU/ml were considered to have hypothyroidism and those with <0.4 IU/ml were considered to have hyperthyroidism. Data collected and analyzed.

### 3. Results & Discussion Authors

Thyroid disorders are more common in women with menstrual irregularities as compared to general population. Both hypothyroidism and hyperthyroidism may result in menstrual disturbances.

**Table 1:** Distribution of patients according to Thyroid status

S.No	Thyroid status	Number of patients (n=113)	Percentage (%)
1	Euthyroid	61	53.98%
2	Hypothyroid	43	38.05%
3	Hyperthyroid	09	7.97%

Among 113 women, 43 had hypothyroidism, 9 patient had hyperthyroidism rest 61 were euthyroid. (Table 1), which was similar to study done by Scott and Mussey [8], Joschi et al. [9], Kaur T et al [10] & N Bhavani et al [11]. One of the explanations is activity of thyroid is closely linked with the process of ovarian maturation. The thyroid gland is itself dependent on direct and indirect stimulation from the ovary to discharge its own function.

**Table 2:** Pattern of Abnormal uterine bleeding in Thyroid dysfunction.

S.No	Pattern of Bleeding	Hypothyroid (n=43)	Hyperthyroid (n=9)
1	Menorrhagia	27	0
2	Polymenorrhoea	7	0
3	Acyclic	4	0
4	Oligomenorrhoea	4	5
5	Hypomenorrhoea	0	4
6	Metrorrhagia	1	0

Of 43 hypothyroid patients, 27 (62.3%) had menorrhagia, 4 had oligomenorrhoea and 9 patient with hyperthyroidism was found to have oligomenorrhoea & Hypomenorrhoea (Table 2) which was similar to study done by Scott and Mussey [8], Kaur T et al [10] & N Bhavani et al [11], Doifode & Fernandez et al [14].

Thyroid disorders are more common in women with menstrual irregularities ranging from menorrhagia to oligomenorrhoea as compared to general population. Woman with hypothyroidism, commonly presents with anovulation and unopposed oestrogen activity causes endometrial hyperplasia which may outgrow the blood supply and may cause local areas of necrosis that breaks down and produces bleeding. In hypothyroid patients the menstrual abnormality is much more severe and anovulatory cycles are common. Menorrhagia and polymenorrhoea are more common but amenorrhoea is rare. Patients originally requiring treatment for menorrhagia has not been carefully elicited [12]. Majority of subclinical hypothyroid cases easily pass unrecognised and the prevalence of hypothyroidism is as high as 9.5% in women [13]. Doifode & Fernandez et al recommended hypothyroidism is frequent enough to warrant consideration

in most older woman, justifying screening even in asymptomatic older women. [14]

Our study showed menstrual irregularities to be significantly more frequent in patient with thyroid dysfunction concluding that systematic study of thyroid function in dysfunctional uterine bleeding is warranted. Goldsmith demonstrated a 70% occurrence of ovulatory failure in patients with hypothyroidism while 20% had normal ovulation. 72.2% of patients with thyrotoxicosis had ovulatory cycles. [15] Hypo- or Hyperthyroidism and hyperprolactinemia also may cause anovulation by interfering with the hypothalamic-pituitary-ovarian axis. [16] Hypothyroid patients had proliferative endometrium & endometrial hyperplasia. About 14% of premenopausal women with recurrent anovulatory cycles develop endometrial cancer or its precursor, hyperplasia with atypia. Ten to 20 percent of endometrial cancers are diagnosed in premenopausal women. [17]

### 4. Conclusion

The menstrual irregularities are significantly more in patients with thyroid dysfunction and may precede thyroid dysfunction. Thyroid dysfunction should be considered as an important etiological factor for menstrual abnormality. Biochemical estimation of T3, T4, TSH should be made mandatory in Abnormal uterine bleeding especially in nonstructural causes and also in those presenting with fatigue, obesity, Lethargy.

### 5. Future Scope

As there is high incidence of thyroid dysfunction in our area, this evaluation of thyroid in abnormal uterine bleeding would also avoid unnecessary surgeries and exposure to hormones and early diagnosis will help in early intervention and good outcome.

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