

EVALUATION OF RELATION BETWEEN THYROID DISORDER AND ABNORMAL UTERINE BLEEDING

Obstetrics & Gynaecology

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ABSTRACT

INTRODUCTION Abnormal uterine bleeding (AUB) is a common complaint encountered in gynaecology OPD. Any uterine bleeding outside the normal volume, duration, regularity or frequency is considered abnormal uterine bleeding (AUB). AUB occurs in 9-14% of women from menarche to menopause affecting quality of life imposing financial burden. **AIM AND OBJECTIVES** To study the association of thyroid dysfunction in patients with AUB **METHOD** It is a prospective study which includes 100 cases with history of heavy menstrual bleeding, intermenstrual bleeding or irregular menstrual bleeding attending OPD under Obstetrics and Gynaecology department, JK Lon Mother & Child Hospital, Government Medical Colleges and associated groups of hospital from March 2020- Feb 2021 taken in the study **RESULTS** Majority of the patients were more than and equal to 40 yrs of age (69%). Majority of the patients were multiparous (76%). Most common menstrual disorder was menorrhagia (52%). 26% patients were hypothyroid. There was statistical significance between AUB and hypothyroidism. **CONCLUSION** Thyroid function test should be performed in all patients with menstrual irregularities (AUB) to avoid unnecessary interventions like hormonal therapy and hysterectomy. Correction of thyroid abnormalities also relieves AUB especially with non-structural causes of AUB.

KEYWORDS

Page Abnormal Uterine Bleeding, Menorrhagia, Oligomenorrhoea, Hypothyroidism, Euthyroid

INTRODUCTION

Abnormal uterine bleeding (AUB) is a common complaint encountered in gynaecology OPD. Any uterine bleeding outside the normal volume, duration, regularity or frequency is considered abnormal uterine bleeding (AUB)¹.

NORMAL MENSTRUATION ¹	
CYCLE INTERVAL	28 days (21-35 days)
MENSTRUAL FLOW	4-5 days
MENSTRUAL BLOOD LOSS	35 ml (20-80 ml)

AUB occurs in 9-14% of women from menarche to menopause affecting quality of life imposing financial burden². It is estimated that 30% of women experience menorrhagia annually. This debilitating condition is clinically important. Mahoney and colleagues report it as the indication for two thirds of hysterectomies and nearly 25% of gynaecologic operations. Thus, the impact of this condition on the public health and health care costs is significant³. Menstrual irregularity is a symptom of a problem between the two systems (reproductive and endocrine). Incoordination in the hypothalamo-pituitary-ovarian axis may cause endometrial abnormalities. It is thus prevalent in extremes of reproductive period – adolescence and premenopause or following childbirth and abortion. Endocrinological dysfunctions including thyroid disorders plays major role in its etiopathogenesis⁴.

Mechanisms behind menstrual irregularities due to thyroid disorder are multiple. Some of these are like alterations in TSH response, altered LH response and conversion of androgens to estrogen peripherally, TRH causing increased prolactin levels, altered SHBG and effect on the coagulation factors⁵.

AIM AND OBJECTIVES

1. To study the association of thyroid dysfunction in patients with AUB
2. To find out the incidence/prevalence of thyroid disorder in AUB patient.
3. To study the menstrual pattern in thyroid disorders.

MATERIAL & METHOD

It is a prospective study which includes 100 cases with history of heavy menstrual bleeding, intermenstrual bleeding or irregular menstrual bleeding attending OPD under Obstetrics and Gynaecology department, JK Lon Mother & Child Hospital, Government Medical Colleges and associated groups of hospital from March 2020- Feb 2021.

METHOD OF DATA COLLECTION

Patients having abnormal uterine bleeding were counselled for undertaking the thyroid function test. Detailed menstrual history including length of the cycle, duration of the flow and number of pads usage were elicited and history regarding symptoms of hypothyroidism and hyperthyroidism were also elicited. General examination including anaemia, height (cm), weight (Kg) of the patient, thyroid enlargement were assessed. Systemic examinations were carried out.

Body mass index was calculated using height and weight. To rule out other causes of abnormal uterine bleeding abdominal examination, speculum and pelvic examination done. Investigations like complete blood test, renal function test, liver function test, bleeding time, clotting time, urine routine, USG pelvis done. Thyroid function test – Serum TSH, free T3 and free T4 were done. 5ml of blood (fasting sample) was taken in dry glass container without any anticoagulant. Technique used was Chemiluminescence immunoassay (CLIA) by Liaison Diasorin machine.

PHYSIOLOGICAL RANGE:

TSH- 0.3 TO 5 mIU/mL

Inclusion Criteria -

All females in 15 to 55 years of age group with abnormal uterine bleeding and those giving informed consent were included as subjects in proposed study, including patients on hormonal therapy for thyroid disorders.

Exclusion Criteria

1. Age greater than 55 years.
2. Postmenopausal bleeding.
3. Abortion history within 3 months.
4. History of childbirth within 1 year.
5. IUCD or OCP users.
6. Patient with known liver disorders or coagulopathy.
7. Diagnosed cases of uterine fibroid, polyps, ovarian cyst, endometriosis, polycystic ovarian disease, malignancy, cervical tumours.

RESULTS AND ANALYSIS

Table 1: Age-wise distribution of AUB patients

Age group	Number (%)
<24 yr	11 (11 %)

24-31 yr	13 (13 %)
32-39 yr	7 (7 %)
>=40 yr	69 (69 %)
Total	100 (100 %)

Table 1 shows the age-wise distribution of AUB patients. Majority of patients were aged equal to and more than 40 years. 11% and 13% females were less than 24 years and 24-31 years age group respectively. Only 7% patients were in age group 32-40 years.

Figure1: Age-wise distribution of AUB patients

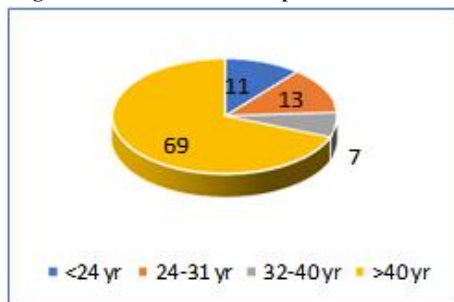


Table 2: Parity-wise distribution of AUB cases

Parity	Number (%)
Nulliparous	17 (17 %)
Primiparous	7 (7 %)
P2	28 (28 %)
P3	27 (27 %)
≥ P4	21 (21 %)
Total	100 (100 %)

Table 2 depicts the parity of AUB patients. Only 7% patients were primiparous, and 17% were nulliparous. Second and third para females had the highest percentage (i.e. 28% and 27% respectively). 21% females were fourth parity or more.

Figure 2: Parity-wise distribution of AUB cases

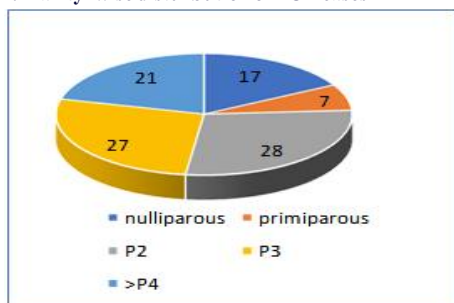


Table 3: Bleeding pattern among AUB patients

Bleeding pattern	Number (%)
Menorrhagia	52 (52%)
Oligomenorrhoea	18 (18%)
Polymenorrhoea	30 (30%)
Total	100 (100%)

Table 3 shows the bleeding pattern among AUB patients. Maximum patients complained of **Menorrhagia** (52%) followed by **Polymenorrhoea** (30%). Only 18% complained of **oligomenorrhoea**.

Figure3: Bleeding pattern among AUB patients

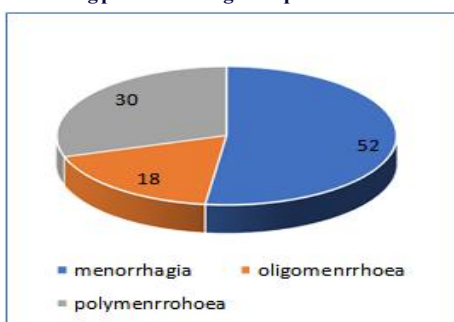


Table 4: Prevalence of thyroid disorder in AUB patients

	Number	%
Hyperthyroid	0	0%
Hypothyroid	26	26%
Euthyroid	74	74%
Total	100	100%

Table 4 shows prevalence of thyroid disorder in AUB patients. 26% of AUB patients were hypothyroid out of the total and 74% were euthyroid. There was no AUB case having hyperthyroidism. Only 13 patients out of 26 hypothyroid patients showed symptoms other than menstrual disturbances.

Figure 4: Prevalence of thyroid disorder in AUB patients

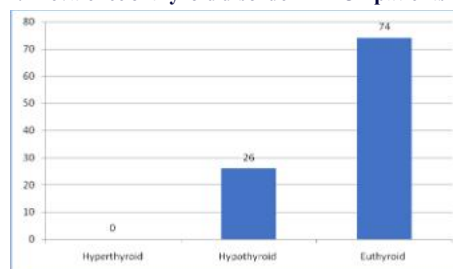


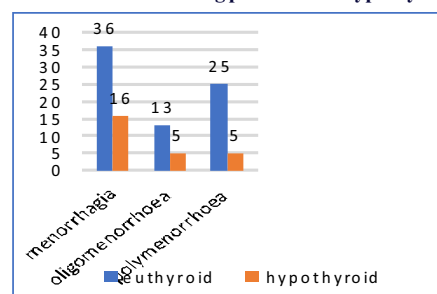
Table 5: Association of bleeding pattern with hypothyroidism

	Euthyroid	Hypothyroid	Total
Menorrhagia	32	20	52
Oligomenorrhoea	15	3	18
Polymenorrhoea	27	3	30
Total	74	26	100

Chi square=9.004, df=2, p value=0.011

Table 5. shows association of bleeding pattern with hypothyroidism. 20 hypothyroid patients presented with menorrhagia and 3 patients with Oligomenorrhoea and Polymenorrhoea each. 32 euthyroid patients presented mainly with the complaints of menorrhagia and 27 patients with Polymenorrhoea. Oligomenorrhoea was presented by 15 euthyroid patients. There is statistically significant variation in bleeding pattern of euthyroid and hypothyroid females (p value=0.011).

Figure 5: Association of bleeding pattern with hypothyroidism



DISCUSSION

Thyroid conditions can have an impact on your menstrual cycles. Symptoms may range from Heavy (menorrhagia) and frequent periods (polymenorrhoea) to irregular infrequent (oligomenorrhoea) and absent (amenorrhoea) cycles. Most common being hypothyroidism and most common complain being menorrhagia.

AGE DISTURBUTION

In this study majority of the patients fall in ≥40 yrs of age group and constitutes 69% of the population. In studies like Rani GU et al(2026), Bedi M et al(2020), Ezhil R et al(2018), Mishra S et al (2018) majority patients fall in 40-45 yrs (43.39%), 41-50 yrs(67%), >40 yrs(77%) and 35-45 yrs(44.2%) respectively, which is comparable to our study.

In contrast to our study ,according to Dhanpal M et al (2016) majority of patients fall in 25-31 yrs of age (41.2%), in Bilwal BK et al (2019) 31-40 yrs (38%), in Sharma P et al(2018) 31-40 yrs (38%), in Pujari P et al(2021) 31-40 yrs (39.8%), in Kattel P et al (2017) 31-40 yrs (41%), in Tara et al(2019) 30-39 yrs (34 %), in Nekkanti D et al(2023) 31-40 yrs(53.23%).

PARITY DISTURBUTION

In this study, majority patients are multiparous which constitutes (76%). Majority of the patients are multiparous category in Sharma P et al (2018) (54%), Sharan M et al (2021) (62%), Pujari P et al (2021) (60%), Nair RV et al (2015) (63.33%), Rani GU et al (2026) (66%) which is comparable to our study.

TYPE OF AUB

Most common bleeding pattern in AUB in our study is menorrhagia, which constitute 52%. Commonest complain in Mishra S et al (2018) (41.4%), Sangita AN et al (2015) (50%), Bilwal BK et al (2019) (44%), Sharma P et al (2018) (44%), Avasthi S et al (2018) (48%), Kolli SN et al (2020) (46%), Kattel P et al (2017) (36.7%), Sharan M et al (2021) (57.89%) and Malika S et al (2021) (58%), Nekkanti D et al (2023) (37.9%) is menorrhagia which is comparable to our study.

THYROID DISORDERS

Most common thyroid disorder in our study is hypothyroidism which is 26%. This is comparable to Bilwal BK et al (2019) and Ezhil R et al (2018) in which hypothyroid patients constitutes 24% and 20.5% respectively. In contrast Sharma P et al (2018) 15%, Kolli SN et al (2020) 17.88%, Sharan M et al (2021) 17% patients were hypothyroid. In this study 74% were euthyroid which is comparable to Ezhil R et al (2018) (79.5%), Sharan M et al (2021) (81%) and Sudha et al (2018) (62%), Avasthi S et al (2018) 52%, Nekkanti D et al (2023) 67.74%, Rani GU et al (2026) 60% in which above mentioned patients were euthyroid.

In this study, there was no case of hyperthyroidism. In contrast, studies like Bilwal BK et al (2019), Ezhil R et al (2018), Kolli SN et al (2020), Sharan M et al (2021), sudha et al (2018) Nekkanti D et al (2023) had 3%, 1.5%, 2.42%, 2%, 2%, 5.65% cases of hyperthyroidism respectively.

ASSOCIATION BETWEEN THYROID DISORDER AND AUB

In our study majority of the hypothyroid patients (20 patients) complained of menorrhagia followed by (3 patients) Oligomenorrhea and (3 patients) Polymenorrhea almost equally. There is statistically significant variation in bleeding pattern of euthyroid and hypothyroid females (P value=0.011).

This study is comparable to following studies-

In Bedi M et al (2020) out of 116 cases presenting with heavy menstrual bleeding, 79 were hypothyroid, 5 were hyperthyroid, and 32 were euthyroid. Also, out of the 37 cases presenting with light menstrual bleeding, 16 cases were hypothyroid closely 13 cases followed by hyperthyroid cases. These results were statistically significant (P value<0.01).

In Sangita AN et al (2016), among the patients with hypo/oligomenorrhea, one case had subclinical hypothyroidism, one case had overt hypothyroidism, one case had subclinical hyperthyroidism and three cases had overt hyperthyroidism. Among the patients with menorrhagia, six cases had subclinical hypothyroidism and four cases had overt hypothyroidism. Among the patients with polymenorrhea, two cases had subclinical hypothyroidism and 2 had overt hypothyroidism. This difference was statistically significant (P value=0.027). Like our study (P value=0.011), Desmukh et al (2015) (P value=<0.001) also had reported statistically significant association between menorrhagia and hypothyroidism

CONCLUSION

Thyroid dysfunction is associated with menstrual disturbances (abnormal uterine bleeding). Commonest menstrual pattern among case of AUB is menorrhagia. Prevalence of hypothyroidism was more common than hyperthyroidism in AUB cases. Thyroid function test should be performed in all patients with menstrual irregularities (AUB) to avoid unnecessary interventions like hormonal therapy and hysterectomy. Correction of thyroid abnormalities also relieves AUB especially with non-structural causes of AUB.

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