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Original Research Article

Evaluation of thyroid disorders in abnormal uterine bleeding

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ABSTRACT

Background: Abnormal uterine bleeding (AUB) is a common clinical presentation in gynecology. Alteration in thyroid hormones level has been associated with menstrual disturbances. This study is aimed to know the prevalence of thyroid disorders amongst AUB patients and also the different patterns of menstrual abnormalities associated with thyroid disorders.

Methods: 100 Patient of clinically diagnosed AUB were taken from gynecology OPD. All the patients from 19 to 45 age groups presenting with menstrual disturbances were tested for thyroid function by measuring ST₃, ST₄, and S.TSH.

Results: Out of 100 women of AUB, majority were in the age group of 31-40 years (38%), 54% were multiparous and 44% presented with menorrhagia. 65% were euthyroid, 17% had subclinical hypothyroidism, 15% had overt hypothyroidism and 3% were diagnosed as hyperthyroid. Subclinical hypothyroidism, overt hypothyroidism and hyperthyroidism were detected mostly in the age group of 31-40 years. The commonest bleeding abnormalities in hypothyroid patient were menorrhagia and polymenorrhoea. While most of the hyperthyroid cases were oligomenorrhagic.

Conclusions: The study concludes that biochemical evaluation of thyroid function is an easy, reliable method and should be made mandatory in all cases of AUB.

Keywords: Abnormal uterine bleeding, Thyroid disorders

INTRODUCTION

AUB is defined as any variation from normal menstrual cycle and includes changes in regularity and frequency of menses, in duration of flow or in amount of blood loss.

Abnormal uterine bleeding affects 10-30 percent of reproductive aged women and upto 50 percent of perimenopausal women.¹

Abnormal uterine bleeding is defined as a state of abnormal uterine bleeding without any clinically detectable organic pelvic pathology-tumour, inflammation or pregnancy.² The endometrial

abnormalities may be due to incoordination in the hypothalamo-pituitary-ovarian axis. It is thus prevalent in extremes of reproductive period-adolescence and premenopause or following childbirth and abortion.²

The menstrual cycle is a complex interaction between the reproductive system and the endocrine (hormone-producing glands) system.

Menstrual irregularity is a symptom of a problem between the two systems (reproductive and endocrine). Thyroid disorders can affect the menstrual cycle resulting in different types of irregularities.

Term used to describe AUB³

- Oligomenorrhoea: bleeding occurs at interval of >35 days.
- Polymenorrhoea: bleeding occurs at interval of <21 days.
- Menorrhagia: bleeding occurs at normal interval but with a heavy flow (≥ 80 ml) or duration of >7 days.
- Meno- metrorrhagia: bleeding occurs at irregular/ non-cyclic interval with heavy flow (≥ 80 ml) or duration of >7 days.
- Metrorrhagia: irregular bleeding that occurs between ovulatory cycles inter menstrual bleeding.
- Amenorrhoea: bleeding is absent for 6 months or more in non-menopausal women.

In the early stages of thyroid disease (thyrotoxicosis and myxoedema), menorrhagia or polymenorrhoea is a common complaint. Later, amenorrhoea develops, especially in thyrotoxicosis.⁴

With hyperthyroidism, hypomenorrhoea and amenorrhoea are more frequent complaints and menorrhagia is noted in only approximately 5 percent. With severe overt hypothyroidism, women commonly present with anovulation, amenorrhoea and anovulatory DUB.⁵

Objective of present study was to evaluate and detect the thyroid dysfunction in patients with abnormal uterine bleeding, to evaluate the age group in which thyroid dysfunction is more common and to assess the menstrual abnormality in women with thyroid disorder.

METHODS

It is a cross-sectional, prospective observational study, conducted on 100 women coming to Out-patient department with complaint of AUB.

Inclusion criteria

Females in age group of 15-45 years with complaint of abnormal uterine bleeding.

Exclusion criteria

Known cases of thyroid disease, hyperprolactinemia and coagulopathy and also the patients on anticoagulant drugs.

A detailed history of all the patients included in the study was taken. The detailed gynaecological history and also the detailed present and past menstrual history was taken from the patients. A detailed examination including general and gynaecological examination was done by which the obvious pelvic pathologies were ruled out. All patients were advised for routine investigations like CBC, Blood sugar, Urine routine and BT, CT and also the thyroid profile which included T3, T4 and TSH.

Ultrasound of the pelvis was also done to rule out any pelvic pathology as the cause of menstrual irregularities.

After the reports of thyroid, the patients were diagnosed as euthyroids, subclinical hypothyroids, hypothyroids or hyperthyroids. Data was collected and mentioned in percentages and statistical analysis done if required.

RESULTS

The maximum no. of patients of AUB in our study were of 31-40 years of age (38%), followed by 21-30 yrs of age (31%) (Table 1).

Table 1: Age wise distribution of AUB cases.

| Age group (in years) | No. of patients | Percentage |
|----------------------|-----------------|------------|
| <20 | 21 | 21 |
| 21-30 | 31 | 31 |
| 31-40 | 38 | 38 |
| >40 | 10 | 10 |

The mean age was 29.5 years. Majority of patients were multiparous with parity more than or equal to 2(54%), while 20% were unmarried and 6% nulliparous (Table 2).

Table 2: Parity of AUB patients.

| Parity | No. of patients | Percentage |
|---------------|-----------------|------------|
| Unmarried | 20 | 20 |
| Nullipara | 6 | 6 |
| Primipara | 20 | 20 |
| Para2 | 34 | 34 |
| Para ≥ 3 | 20 | 20 |

The major menstrual complaint of AUB patients was menorrhagia (44%), 20% presented with oligomenorrhoea, 16% had polymenorrhoea, and 4% had amenorrhoea (Table 3).

Table 3: Bleeding pattern in AUB patients.

| Bleeding pattern | No. of patients | Percentage |
|--------------------|-----------------|------------|
| Menorrhagia | 44 | 44 |
| Metrorrhagia | 10 | 10 |
| Meno- metrorrhagia | 6 | 6 |
| Polymenorrhoea | 16 | 16 |
| Oligomenorrhoea | 20 | 20 |
| Amenorrhoea | 4 | 4 |

65% of the patients with AUB were euthyroid, 17% had subclinical hypothyroidism and 15% were diagnosed to be hypothyroid. 3% patients had hyperthyroidism (Table 4).

Subclinical hypothyroidism and hyperthyroidism were detected mostly in the age group of 31-40 years, 28.9% and 6.5% respectively. 30% patients of AUB in age group of 41-45 years were hypothyroid (Table 5).

Table 4: Thyroid dysfunction in AUB patients.

| | Euthyroid | Hypothyroid | Subclinical hypothyroidism | Hyperthyroidism |
|-----------------|-----------|-------------|----------------------------|-----------------|
| No. of patients | 65 | 15 | 17 | 3 |

Table 5: Thyroid dysfunction in different age group of AUB patients.

| Age | No. of cases | Euthyroid | Hypothyroid | Sub clinical hypothyroid | Hyperthyroid | Total thyroid dysfunction | % of thyroid dysfunction |
|-------|--------------|------------|-------------|--------------------------|--------------|---------------------------|--------------------------|
| <20 | 21 | 15 (71.5%) | 4 (19%) | 2(9.5%) | - | 6 | 28 |
| 21-30 | 31 | 25 (80.1%) | 3 (9.6%) | 2(6.4%) | 1(3.2%) | 6 | 19 |
| 31-40 | 38 | 20 (52.5%) | 5 (13.1%) | 11(28.9%) | 2(6.5%) | 18 | 47 |
| 41-45 | 10 | 5 (50%) | 3(30%) | 2(20%) | - | 5 | 50 |

In patients presenting with menorrhagia, 72% were euthyroid, 16% had subclinical hypothyroidism and 11.3% were diagnosed as hypothyroids. In patients who presented with oligomenorrhoea, 40% were

euthyroid, 25% had subclinical hypothyroidism and 25% had overt hypothyroidism and 10% were diagnosed as hyperthyroid. Patients presenting with polymenorrhoea, 18.7% had subclinical hypothyroidism and 18.7% had overt hypothyroidism (Table 5).

Table 6: Distribution of different AUB pattern in relation to thyroid dysfunction.

| Bleeding pattern | No. of patient | Euthyroid | Hypothyroid | Subclinical hypothyroid | Hyperthyroid |
|-------------------|----------------|------------|-------------|-------------------------|--------------|
| Menorrhagia | 44 | 32 (72.7%) | 5 (11.3%) | 7 (16%) | |
| Polymenorrhoea | 16 | 10 (62.6%) | 3 (18.7%) | 3 (18.7%) | |
| Metrorrhagia | 10 | 7 (70%) | 1 (10%) | 2 (20%) | |
| Meno-metrorrhagia | 6 | 5 (84%) | 1 (16%) | | |
| Oligomenorrhoea | 20 | 8 (40%) | 5 (25%) | 5 (25%) | 2 (10%) |
| Amenorrhoea | 4 | 3 (75%) | | | 1 (25%) |

In present study, patients with hypothyroidism (subclinical and overt) presented mainly with menorrhagia (12 out of 32 patients i.e. 37.5%). The second most common menstrual abnormality was oligomenorrhoea in hypothyroids (10 out of 32 i.e. 31.2%). Other menstrual irregularities with which the patient presented were polymenorrhoea (6 out of 32 i.e. 18.7%) and metrorrhagia (3 out of 32 i.e. 9.4%). Patients who were hyperthyroid presented with oligomenorrhoea and amenorrhoea (Table 6).

DISCUSSION

The majority of patients of AUB (38%) were in the age group of 31-40 years in our study. Pilli et al had 58% cases in age group of 21-30 years.⁵ Surendra Kumar Jinger et al in their study of 100 women with AUB had 49% in 20-30 yr age group.⁶

Pilli et al reported that AUB is seen in 87% multipara, 7% primipara and 6% nulliparous.⁵ In present study also majority of patients were multiparous (54%). Menorrhagia is the main complaint in the patients of abnormal uterine bleeding (44%) which was also seen in

the studies by Pilli et al in 34%, in the study by Pahwa S et al study it was in 50% patients and in Deshmukh et al study 40% had menorrhagia.^{5,7,8}

Oligomenorrhoea is the next common menstrual disorder followed by polymenorrhoea and metrorrhagia.

35 patients out of 100 patients, showed thyroid dysfunction (35%). In the study of Pahwa S et al 24% had thyroid dysfunction.⁷ In the study by Marimuthu K et al, out of 250 cases of AUB, 68 (27.2%) cases had thyroid dysfunction.⁹ Jinger SK et al found 47% patients having thyroid dysfunction in their study and 53% euthyroid.⁶

The main thyroid dysfunction noted was hypothyroidism including subclinical (17%) and overt hypothyroidism (15%) in our study. Similarly, in the study by Marimuthu K et al 15.6% were hypothyroid, 3.2% had subclinical hypothyroidism and 7.2% were hyperthyroid.⁹ Pahwa S et al observed in their study that 22% of cases were found to be hypothyroid, 2% hyperthyroid and 76% were euthyroid.⁷

Sampath S et al had done their study on clinic-biochemical spectrum of hypothyroidism and found a mean age of 36.2 years among 944 women referred for thyroid testing. In this study, they found that the mean age of females with subclinical hypothyroidism was 5.4 years less than those with overt hypothyroidism.¹⁰

37.5% of cases of hypothyroid (both subclinical and overt) in our study, were exhibiting menorrhagia. The similar results were seen in 57.13% patients in the study by Nair RV et al and in 46.15% patients in the study by Bharucha M et al.^{11,12}

Douglas et al observed that 22.3% of cases with menorrhagia had subclinical hypothyroidism.¹³ In present study also 16% cases with menorrhagia had subclinical hypothyroidism and 11.3% were diagnosed to have overt hypothyroidism.

The main symptom in patients diagnosed to have hyperthyroidism was oligomenorrhoea (66.6%) in our study which was comparable to 63.6% patients in the study by Singh L et al.¹⁴ Chandel P et al also confirmed that hypothyroidism causes menorrhagia and hyperthyroidism reduces menstruation.¹⁵

CONCLUSION

With the advent of modern hormonal assay techniques, precise estimation of thyroid hormone in serum is possible in a rapid and reliable manner. Hence investigating a patient with AUB, evaluation of thyroid function forms an essential component. AUB patients in the age group of 31-40 years mostly suffered from thyroid disorders and thus must be evaluated for it. This can avoid unnecessary hormonal treatment and surgical intervention.

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