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Original Research Article

Thyroid abnormality in abnormal uterine bleeding: an observational study from Medical College in Western UP, India

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ABSTRACT

Background: Abnormal Uterine Bleeding (AUB) is one of the commonest gynecological complain in reproductive age group. Menstrual abnormalities are commonly seen when there is any alteration in thyroid function. Objective of present study was to investigate the prevalence of AUB and to determine the menstrual pattern in cases with thyroid dysfunction.
Methods: The present cross sectional observational study was conducted Teerthankar Mahaveer Medical College and Research Center Moradabad. Total 400 cases presenting with AUB were included in the study. Routine blood test, ultrasonography and thyroid function tests were done in these cases.
Results: Among all the cases presenting with menstrual abnormalities 26% had hypothyroidism and 9% have hyperthyroidism and rest had euthyroid status. Menorrhagia (45.2%) and polymenorrhoea (37.5%) were commonest menstrual abnormality seen in cases with hypothyroidism. Most cases with hyperthyroidism presented with hypomenorrhoea (27.8%).
Conclusions: Thyroid function abnormality is common in cases presenting with AUB and it gets relieved in correcting hormonal imbalance.

Keywords: Abnormal uterine bleeding, Hyperthyroidism, Hypothyroidism

INTRODUCTION

Menstrual disorders pose a huge burden on gynaecological OPD accounting for approximately 20% of attendance.[1] Thyroid dysfunction can lead to menstrual irregularities and infertility.[2] Thyroid dysfunction causes broad spectrum of reproductive disorders from abnormal sexual development, menstrual irregularities, infertility to premature menopause.[3] In women with hypothyroidism, TRH induced hyperprolactinemia alter the GnRH pulsatile secretion leading to defective or delay in LH response leading to luteal phase defect and anovulation. Apart from effect on ovulation, hypothyroidism also causes menorrhagia by altering coagulation factors i.e., decrease in factors VII, VIII, IX, XI.[4] SHBG production increases in hyperthyroidism. Hyperthyroxinemia increases the gonadotrophin response to GnRH and baseline gonadotrophin concentrations are also frequently elevated. The decrease in menstrual flow may also relate to effects on hemostatic factors, including the synthesis of factor VII. Despite these metabolic changes, hyperthyroid women usually maintain ovulation, according to endometrial biopsies.[4]

In India thyroid disorders are among the most common endocrine diseases.[5] Onset of thyroid disorders increases with age and it is estimated that 26% of premenopausal women are diagnosed with thyroid disorders.[6] Thyroid disorders are more common in women than in men and in older adults compared with younger age groups.[7]

METHODS

The present cross sectional observational study was conducted among patients fulfilling inclusion criteria who were attending Gynecology OPD of Teerthankar Mahaveer Medical College and Research Center Moradabad between during august 2016 to July 2017.

Inclusion criteria

All cases in reproductive age group presenting with AUB willing to participate in the study.

Exclusion criteria

- Pregnancy related complications
- H/O IUCD insertion
- Patient on hormonal contraception/drugs (antipsychotic)
- Known cases with genital malignancies
- Associated pelvic inflammatory disease
- Cases refusing to participate in the study

After taking informed consent, on a pre-deginsed performa detailed history regarding age, parity, menstrual history, onset and duration of complaints was entered. Then general physical, systemic and gynaecological examination was carried out. Cases were further subjected to routine blood investigations, pelvic ultrasound and thyroid function test.

Reference range

- S T4 - 60-120 ng/ml
- S T3 – 0.8 – 16 ng/ml
- S TSH- 0.5-5.5 mIU/ml

All data was entered in excel. Appropriate statistical test were applied.

RESULTS

According to the study majority of the cases who presented with AUB were in the age group 31-40 years (42%) followed by 41-50 years.

Table 1: Age and parity distribution of cases.

Age (in years)	Number	Percentage
<20	48	12
21-30	88	22
31-40	168	42
41-50	96	24
Parity	**Number**	**Percentage**
Nullipara	32	8
P1	44	11
P2	136	34
P3	144	36
>P4	44	11

Parity wise distribution of cases has shown that majority of cases with AUB were Para 3(36%) followed by Para 2(34%) (Table 1).

As depicted in Figure 1 out of 400 cases included in the study the most common complaint was menorrhagia (33.75%) followed by polymenorrhoea (27.25%) Followed by hypomenorrhoes (18.25%) then amenorrhoea (11.75%) and the least common complaint was metrorrhagia (9%).

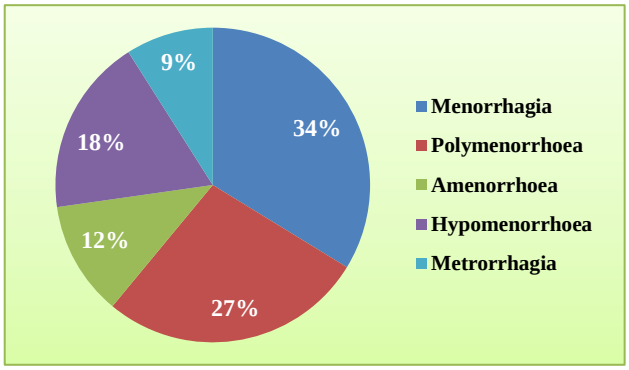

Figure 1: Pattern of menstrual irregularity.

In present study on pelvic ultrasound 108 (27%) had pelvic structural abnormality, out of which adenomysosis was commonest (10%), followed by fibroid (9.25%), ovarian cyst (5.5%) and endometrial polyp (2.25%) (Table 2).

Table 2: Structural abnormalities.

Structural abnormality	Number	Percentage
Fibroid	37	9.25
Adenomyosis	40	10
Ovarian cyst	22	5.5
Endometrial polyp	9	2.25

On estimating the thyroid function of present study participants majority of them were euthyroid (65%) followed by hypothyroidism (26%) and hyperthyroidism was seen only in 9% cases who presented with AUB (Figure 2).

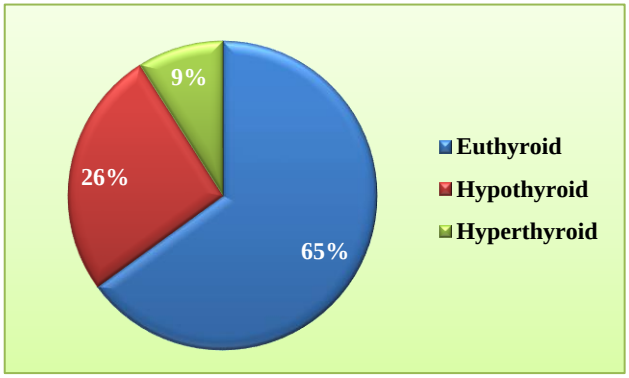

Figure 2: Distribution as per thyroid status.

According to present study hypothyroidism was seen in 45.2% cases presenting with menorrhagia followed by polymenorrhoea (37.5%) which in turn is followed by amenorrhoea (10.6%) followed by hypomenorrhoea and metrorrhagia and menstrual abnormality commonest with hyperthyroidism was hypomenorrheoa (27.5%) (Table 3).

Table 3: Pattern of bleeding in thyroid disorders.

Pattern of bleeding	Hypothyroidism	Hyperthyroidism	Euthyroid
Menorrhagia	47	9	79
Polymenorrhoea	39	6	64
Amenorrhoea	11	7	29
Hypomenorrhoea	4	10	59
Metrorrhagia	3	4	29

The chi-square statistic is 36.1548. The p-value is .000016. The result is significant at $p < 0.05$.

DISCUSSION

Thyroid dysfunction is an important cause of menstrual abnormality in females of reproductive age group as thyroid hormone play an important role in regulation of menstrual function. As per study majority of the cases who presented with AUB were in the age group 31-40 years (42%) followed by 41-50 years. Byna P et al reported that 67.2% women with AUB are in age group between 35-45 years. 25.4% women were between age groups of 46-50 years.[8]

In the present study majority of cases were multiparous whereas only 8% were nulliparous. Similar pattern was observed by Pilli et al where 87% of women were multiparous and only 7% were nulliparous.[9]

Present study demonstrates prevalence of hypothyroidism in cases of AUB 26% and that of hyperthyroidism was 9% and rest 65% cases had euthroid status. our result are comparable with earlier studies (Table 4).[9-11] In a study by Pahwa et al 22% cases had hypothyroidism.[12] Study done by Padmaleela et al had shown prevalence of hyperthyroidism among cases of AUB as 8.4%.[13]

Among 104 hypothyroid cases the most common menstrual abnormality observed was menorrhagia (45.2%) followed by polymenorrhoea (37.5%) which is similar to that of study done by Kaur et al.[14]

Table 4: Prevalence of thyroid dysfunction in earlier studies.

Study by	Hypothyroidism (%)	Hyperthyroidism (%)	Euthyroid (%)
Present study	26	9	65
Sharma et al[10]	22	14	64
Rani S et al[11]	19	2	79
Byna P et al[9]	21.8	12.72	64.5

Pahwa also observed similar pattern of menstrual abnormality in which out of 22 hypothyroid cases 16(78.9%) had menorrhagia followed by polymenorrhoea (10.5%).[12] On the contrary Padmaleela et al reported much less incidence of polymenorrhoea (13.3%).[13]

According to present study commonest menstrual abnormality with hypothyroidism was hypomenorrheoa (27.5%). Kaur et al[14] observed that most common menstrual complain associated with hyperthyroidism was hypomenorrhoea which is similar to present study.

Limitation of study was anti TPO antibody titer being a costly investigation was not included in the study which might diagnose patients with subclinical hypothyroidism, the study was done in patients attending medical college it may not be representative of general population, hence large scale population research is recommended.

CONCLUSION

It was concluded that there is a strong correlation of thyroid dysfunction with abnormal menstrual bleeding. Thyroid dysfunction is common in cases presenting with AUB and menstrual problems gets corrected on correcting the thyroid status.

Therefore, it is important to screen all women for thyroid abnormality who are presenting with AUB especially with non-structural causes of AUB. We strongly

recommend inclusion of thyroid function tests in the panel of tests in cases of AUB. to avoid unnecessary intervention like hormonal treatment and surgery.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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