

Research Article

Thyroid abnormality in perimenopausal women with abnormal uterine bleeding

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ABSTRACT

Background: AUB is a common but complicated clinical presentation and occurs in 15-20% of women between menarche to menopause and significantly affects the women's health. Women with thyroid dysfunction often have menstrual irregularities, infertility and increased morbidity during pregnancy. The objective of present study is to find the correlation between thyroid disorders and AUB in perimenopausal women attending gynecology OPD.

Methods: In the present study, fifty five patients with AUB were included and were evaluated for the cause including thyroid abnormality. Thyroid function tests were done in all patients.

Results: Among 55 patients, 12 patients were diagnosed as hypothyroidism and 7 as hyperthyroidism, women with AUB 36 (65.4%) were euthyroid. Among 19 women with thyroid abnormality, heavy menstrual bleeding was seen in 8 (42%) women, 6 (31.57%) had polymenorrhagia, 5 (26.31%) had oligomenorrhoea. The frequent menstrual abnormality in women with hypothyroidism (12 women) was heavy menstrual bleeding in 5 (41.6%) women, 3 (25%) had oligomenorrhoea, 4 (33.3%) had polymenorrhagia. Out of 7 women with hyperthyroidism, 2 (28.57%) had oligomenorrhoea, 3 (42.8%) had heavy menstrual bleeding, 2 (28.57%) had polymenorrhagia. In a total of 55 patients with AUB, 11 (20%) had structural abnormalities in uterus and ovaries. 5 (9%) had adenomyosis, 3 (5.4%) had ovarian cysts, 3 (5.4%) had fibroids.

Conclusions: It is important to screen all women for thyroid abnormality who are presenting with AUB especially with non-structural causes of AUB. Correction of thyroid abnormalities also relieves AUB. This will avoid unnecessary hormonal treatment and surgery.

Keywords: Abnormal uterine bleeding, Thyroid abnormality, Perimenopausal

INTRODUCTION

Abnormal Uterine Bleeding (AUB) is a term used to describe any type of bleeding that does not fall within the normal range for amount, frequency, duration and cyclicity.¹ AUB is one of the most frequent presentation to gynecology OPD. AUB is a common but complicated clinical presentation and occurs in 15-20% of women between menarche to menopause and significantly affects

the women's health.² Thyroid disorders are more common in women than in men and cause abnormal sexual development, menstrual irregularity, infertility and premature menopause.³ Menstrual abnormality precedes the onset of clinically overt hypothyroidism or hyperthyroidism.⁴

Menstrual irregularities and bleeding problems, due to thyroid disorders are attributed to multiple mechanisms.

They are altered TSH response, TRH induced increased prolactin levels, altered LH response, peripheral conversion of androgens to estrogens, altered SHBG and affect on the coagulation factors.⁵ It also alters lipid levels in the serum.

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. For proper production of progesterone, the synergistic effect of FSH mediated LH receptor are important and they are directly influenced by thyroid hormones. Hypothyroidism also alters peripheral metabolism of estrogens by decreasing SHBG production leading to abnormal feedback at pituitary level. 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. The metabolism of estrogen is altered and peripheral conversion of androgens to estrogens is increased. 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

Subclinical hypothyroidism is present in 5-8.5% of adult women and increases to 20% by the age of 60. TSH <10 IU/ml is defined as subclinical hypothyroidism. Menorrhagia is the early manifestation of subclinical hypothyroidism. These women are also at risk of having abnormal lipid profile and increased incidence of coronary heart disease. Iron deficiency anemia is also common in these women. Subclinical hypothyroidism is also one of the reason for recurrent pregnancy loss.

Hyperthyroidism is due to either Grave's or Plummer's disease. The menstrual changes associated with hyperthyroidism are unpredictable ranging from normal cycles to oligomenorrhoea, amenorrhoea. There could be other symptoms like nervousness, heat intolerance, weight loss, sweating, palpitations and diarrhoea.⁵

Treating thyroid dysfunction can reverse menstrual abnormalities and thus improve fertility. A close interplay between thyroid hormones and normal steroid action and secretion exists. It is necessary for normal ovarian function and thus fertility. Women with thyroid dysfunction often have menstrual irregularities, infertility and increased morbidity during pregnancy.

METHODS

This is a prospective study conducted in the Department of Obstetrics & Gynecology, Narayana Medical College & Hospital, Nellore over a period of 6months between July 2014 to December 2014. 55 women presented with

AUB presenting to gynec OPD were recruited in the study.

Inclusion criteria

1. All women with abnormal uterine bleeding.
2. No obvious cervical and genital lesions.
3. Not on hormonal therapy.
4. No evidence of any haematological disorder.
5. No contraindications for dilatation and curettage study.

Exclusion criteria

1. Unwilling patients.
2. Suspected pelvic infection.
3. Profusely bleeding patients requiring therapeutic curettage.
4. Women on oral contraceptives.
5. Premalignant and malignant lesions of cervix.
6. Cervical stenosis.
7. Severe medical conditions precluding study - like uncontrolled HTN, DM.
8. Pregnancy and related causes of bleeding PV.
9. IUCD users.

Procedure

- 1) The study protocol included a thorough history taking regarding age, bleeding pattern, onset, duration, quantity of bleeding and complaints related to thyroid dysfunction were noted in detail.
- 2) A thorough clinical examination including general physical examination, neck examination, systemic and gynecologic examinations were carried out.
- 3) 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.
- 4) All patients were subjected to T3, T4 and TSH.
- 5) T3 and T4 were assayed by competitive chemiluminescent immunoassay. TSH was estimated by ultra-sensitive fully automated ADVIA centaur, using two sites and which, chemiluminescent immunoassay and analyzed.

Reference values:

Serum T4 – 60-120 ng/ml

Serum T3 – 0.8 -16 ng/ml

Serum TSH – 0.5-5 mU/ml

RESULTS

A total of 55 patients in perimenopausal age group with AUB were recruited in the present study.

AUB - Age distribution: Majority of the women i.e., 37 (67.27%) in our study were between 35-45 years age group, 14 (25.45%) were between 46-50 years of age group and 4 (7.27%) were between 50-55 years of age group.

AUB - Parity: 10 women (18%) were primiparas, 30 (54%) were para 2, 15 (27 %) were para 3 and above. In 55 women with AUB, 19 (34.5%) women had thyroid abnormality.

AUB - Thyroid abnormality: Out of 55 women with AUB 36 (65.4%) were euthyroid, 12 (21.8%) were hypothyroid and 7 (12.7%) were hyperthyroid.

Thyroid abnormality - Menstrual pattern: Among 19 women with thyroid abnormality, heavy menstrual bleeding was seen in 8 (42%) women, 6 (31.57%) had polymenorrhagia, 5 (26.31%) had oligomenorrhoea (Table 1).

Table 1: Thyroid abnormality and menstrual pattern.

Menstrual pattern	n/t	%
HMB	8/19	42
Oligomenorrhoea	5/19	26.31
Polymenorrhagia	6/19	31.57

Hypothyroidism - Menstrual pattern: The frequent menstrual abnormality in women with hypothyroidism (12 women) was heavy menstrual bleeding in 5 (41.6%) women, 3 (25 %) had oligomenorrhoea, 4 (33.3%) had polymenorrhagia (Table 2) (Figure 1).

Table 2: Menstrual pattern of hypothyroidism.

Menstrual pattern	n/t	%
HMB	5/12	41.6
Oligomenorrhoea	3/12	25
Polymenorrhagia	4/12	33.3

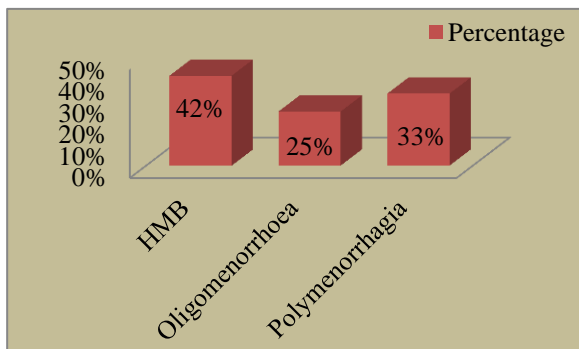


Figure 1: Menstrual pattern of hypothyroidism.

Hyperthyroidism - Menstrual pattern: Out of 7 women with hyperthyroidism, 2 (28.57%) had oligomenorrhoea, 3 (42.8%) had heavy menstrual bleeding, 2 (28.57%) had polymenorrhagia (Table 3) (Figure 2).

Table 3: Menstrual pattern of hyperthyroidism.

Menstrual pattern	n/t	%
HMB	3/7	42.85
Oligomenorrhoea	2/7	28.57
Polymenorrhagia	2/7	28.57

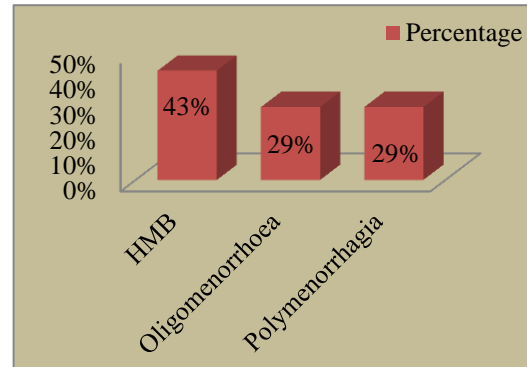


Figure 2: Menstrual pattern of hyperthyroidism.

AUB - Structural abnormalities: In a total of 55 patients with AUB, 11 (20%) had structural abnormalities in uterus and ovaries. 5 (9%) had adenomyosis, 3 (5.4%) had ovarian cysts, 3 (5.4%) had the fibroids (Table 4) (Figure 3).

Table 4: Structural abnormalities in AUB.

Structural abnormality	n/t	%
Adenomyosis	5/55	9
Fibroid	3/55	5.4
Ovarian cyst	3/55	5.4

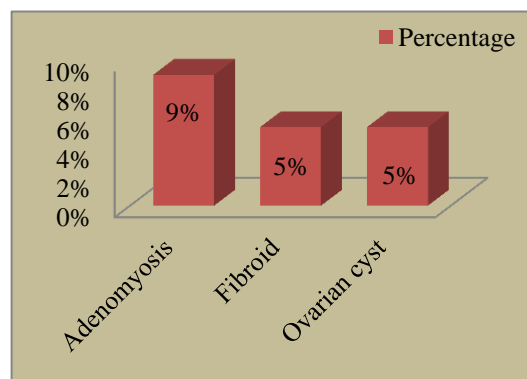


Figure 3: Structural abnormalities in AUB.

Hypothyroidism - Structural abnormality: In 12 women with hypothyroidism, 3 (25%) had adenomyosis and 1 (8%) had fibroid.

DISCUSSION

Thyroid abnormalities are common in women with menstrual irregularities and even precede the onset of thyroid abnormalities that is both hypo and hyperthyroidism.⁶ Menstrual irregularities range from oligomenorrhoea to menorrhagia.⁷

A total of 55 patients with AUB were included in the present study. In present study group 67.2% women with AUB are in age group between 35-45 years. 25.4% women were between age groups of 46-50 years, 7.27% women were above 50 years which is correlating to Bhavani et al.⁸ (6.5%). 92.8% of menstrual abnormalities were noted in the women between the ages of 35-50 years.

In present study group of women with AUB para 1 were of 18.18% which is correlating with the Mangala Gowri et al. (2014) i.e. 4 (17.6%). 54.54% women of para 2 which is higher than the study done by Mangala Gowri et al. (2014) i.e. 27.27% were para 3 and above which is close to study done by Bhavani et al. (2015) i.e. 32.5%. Para 2 women were more in our study compared to other studies because most of the women were undergoing sterilization after two children.⁸

In our study 34.5% women with AUB had thyroid abnormalities. 21.8% were with hypothyroidism, 12.72% with hyperthyroidism and 64.5% were euthyroid which is correlating with study done by Neelu Sharma et al. (2012) (22% hypo, 14% hyper, 64% euthyroid).³

In present study group HMB was found in 42% of patients with thyroid abnormality, 26.31% women had oligomenorrhoea and 37.57% women had polymenorrhagia which is correlating to study done by Padmaleela et al. (HMB in 50%, 27.3% polymenorrhagia and 18.2% oligomenorrhoea).⁹ In present study group HMB was found in 41.6% of hypothyroid women, polymenorrhagia in 33.3% and oligomenorrhoea in 25% which is closely related to study done by Padmaleela et al. (HMB in 53.3%, polymenorrhagia in 20%, oligomenorrhoea in 20%).⁹ In present study group HMB was found in 42.85% of hyperthyroid women which is related to study done by Padmaleela et al. (HMB in 42.8%), polymenorrhagia in 28.57% and 28.57% in oligomenorrhoea.⁹

In present study group 11 women with AUB had structural abnormalities, 9% women had adenomyosis which is correlating to study done by Bhavani et al. (2015) (8.3%). 5.4% had fibroid (in Gowri M et al., 2.4%) and 5.4% had ovarian cyst (in Mangala Gowri et al., 1.7%).^{4,8}

In present study group, 25% women with hypothyroidism had adenomyosis and 8.33% had fibroid.

CONCLUSION

Thyroid dysfunction should be considered as an important associated factor for menstrual abnormalities even in perimenopausal women. It is important to screen all women for thyroid abnormality who are presenting with AUB especially with non-structural causes of AUB. Correction of thyroid abnormalities also relieves AUB. This will avoid unnecessary hormonal treatment and surgery.

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Conflict of interest: None declared

Ethical approval: The study was approved by the institutional ethics committee

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