

Association of Thyroid Dysfunction with Abnormal Uterine Bleeding: A Prospective Study

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Abstract

Introduction: Abnormal uterine bleeding (AUB) a common condition related to women. It affects women both physically and psychologically and reduces their quality of life. The thyroid gland plays an important role in the functioning of the female reproductive system. Thyroid dysfunction may result in various menstrual abnormalities and affects fertility.

Aim: This study aims to study the association between thyroid dysfunction and AUB.

Materials and Methods: This prospective study was conducted on 50 patients with AUB, absence of any hematological disorder, and no genital and cervical lesions. Apart from the routine investigations, the patients underwent complete thyroid profile tests.

Results: In 50 patients with AUD, 54% of the women were suffering from menorrhagia, followed by polymenorrhea (16%.0) and oligomenorrhea (14.0%). About 34% of patients had thyroid dysfunction, 31–40 years age group are the majority.

Conclusion: Thyroid function should be checked in all women who have AUB. Thyroid dysfunction treatment will help these women avoid unnecessary treatments such as hormonal treatment to stop bleeding and hysterectomy.

Key words: Abnormal uterine bleeding, Hyperthyroidism, Hypothyroidism, Menorrhagia, Thyroid dysfunction

INTRODUCTION

Abnormal uterine bleeding (AUB) is a common gynecological problem. It significantly affects women's quality of life and results in increased cost and utilization of health-care resources.^[1] It involves uterine corpus bleeding, which is abnormal in frequency, volume, duration, and regularity. Patients with AUB commonly present themselves with heavy menstrual bleeding (HUB). In approximately 20% of the patients, HUB is accompanied by blood disorders. The immature hypothalamic-pituitary-ovarian axis, causing anovulatory cycles, is considered as a leading underlying cause for HUB.^[2,3]

One of the most common causes of excessive menstrual bleeding and other menstrual irregularities is thyroid

dysfunction. Alteration in reproductive development, such as anovulation and delayed puberty, may be due to hyperthyroidism and hypothyroidism.^[4] Thyroid disorders also result in infertility, abnormal sexual development, and premature menopause.^[5]

Multiple mechanisms are responsible for an association between thyroid dysfunction and menstrual abnormality. Anovulation and luteal phase defects were reported in women with hypothyroidism due to a delay in LH response. This delay in LH response is due to the alteration of GnRH pulsatile secretion caused by TRH-induced hyperprolactinemia. Thyroid hormones also play an important role in the synthesis of progesterone. Coagulation factors are also altered due to hypothyroidism that may cause menorrhagia.^[6]

Subclinical hypothyroidism is defined as the level of the TSH above the normal level despite having a normal level of free thyroxine.^[7] There is a prevalence of 5–8.5% of subclinical hypothyroidism in adult women. Its prevalence increased to 20% in women over the age of 60 years. Recurrent pregnancy loss may also be due to subclinical hypothyroidism. Hyperthyroidism may also result in

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alteration of menstruations and may cause oligomenorrhea and amenorrhea.^[8]

Thus, the doctor must comprehensively evaluate various etiological factors that may cause AUB and treat them accordingly. This may result in avoiding unnecessary surgery and complications.^[9]

Aim

This study aims to study the association between thyroid dysfunction and AUB.

MATERIALS AND METHODS

This is a prospective study and enrolled 50 patients who were suffering from AUB. The inclusion criteria were the presence of AUB, no hematological or bleeding disorder, and no genital and cervical lesions, present not on hormonal therapy, and will be able to undergo dilatation and curettage study. The exclusion criteria include patients who were unwilling to enroll themselves, confirmed or suspected pelvic infection, suffering from cervical stenosis, oral contraceptives, pregnancy, underlying medical conditions such as uncontrolled hypertension or uncontrolled diabetes mellitus, and using intrauterine contraceptive devices.

The participants underwent comprehensive physical examination, including clinical examination, gynecological examination, and neck examination. The symptoms related to thyroid dysfunction were noted. In addition, the age, bleeding pattern, and other symptoms related to AUB were noted. The complete thyroid profile (TSH, T3, and T4) was done to determine the presence of thyroid dysfunction.

RESULTS

A total of 50 women were enrolled in this study. Most of the women were in the age group of 31–40 years (52.0%) followed by 21–30 years (22.0%). There was least number (10.0%) of women above the age of 40 years. The number of women below 20 years was 8 (16.0%). More than half of the women (54.0%) were primiparous, while 12 (24.0%) were unmarried [Table 1].

The majority had euthyroid (62%) followed by hypothyroidism in 20% and hyperthyroidism in 4%. The results further revealed that 19 (38.0%) of the women with AUB had thyroid dysfunction; a higher number of patients were in the 31–40 years age group [Table 2].

Out of 31 women in the euthyroid group, 15 were in the age group of 31–40 years. This age group also has a maximum (7) patient with subclinical hypothyroidism. The

only patients with hypothyroidism were also in the age group of 31–40 years [Table 3].

Most of the patients had menorrhagia (54.0%) followed by polymenorrhea (16.0%), and amenorrhea was present in the least number of women (2.0%) [Table 4].

Out of the 27 women with menorrhagia, 19 women were euthyroid, and 5 women had subclinical hypothyroidism. None of the women with hyperthyroidism had menorrhagia, polymenorrhea, metrorrhagia, and menometrorrhagia [Table 5].

DISCUSSION

Fifty patients were included in the study. In the present study, 52% of the women were in the age group of 31–

Table 1: Distribution of participants based on parity

Parity	No. of patients	Percentage
Unmarried	12	24.0
Nullipara	7	14.0
Primipara	27	54.0
Para >2	4	8.0

Table 2: Status of thyroid function among participants

Thyroid dysfunction	No. of patients	Percentage
Euthyroid	31	62.0
Hypothyroid	7	14.0
Subclinical Hypothyroidism	10	20.0
Hyperthyroidism	2	4.0

Table 3: Age distribution according to thyroid function

Age group	Euthyroid	Hypothyroid	Subclinical hypothyroidism	Hyperthyroidism	Total
<20	5	2	1	0	8
21–30	9	1	1	0	11
31–40	15	2	7	2	26
>40	2	2	1	0	5
Total	31	7	10	2	50

Table 4: Uterine bleeding pattern in abnormal uterine bleeding patients

Bleeding pattern	No. of patients	Percentage
Menorrhagia	27	54.0
Polymenorrhea	8	16.0
Metrorrhagia	4	8.0
Menometrorrhagia	3	6.0
Oligomenorrhea	7	14.0
Amenorrhea	1	2.0

Table 5: Relation of bleeding pattern with thyroid function

Bleeding pattern	Euthyroid	Hypothyroid	Subclinical hypothyroidism	Hyperthyroidism	Total
Menorrhagia	19	3	5	0	27
Polymenorrhea	4	2	2	0	8
Metrorrhagia	3	1	0	0	4
Menometrorrhagia	2	0	1	0	3
Oligomenorrhea	3	1	2	1	7
Amenorrhea	0	0	0	1	1
Total	31	7	10	2	50

40 years. About 22% of the women were in the age group of 21–30 years, while 10% were above 40 years. Our study had 74% of the women with AUB in 21–40 years. This contrasts with the study done by Pilli *et al.* in which 58% of the women were in similar age group.^[10]

In the present study, 54.0% of women were primiparous, while 24.0% were unmarried. About 14.0% of women were nulliparous, while 8.0% of women had parity greater than 2. Contrasting results were found in the study done by Byna *et al.*, in which 18% of the women were primiparous.^[8] About 76.0% of the women in this study were married. This is similar to the results of Pilli *et al.* which had married women share of 79.74%.

About 62.0% of the women with AUB were in the euthyroid group, while 34.0% in the hypothyroid and subclinical hypothyroid groups combined. This is close to the results obtained in Ajmani *et al.*, in which 56.0% of the women were euthyroid while 34.0% of the women in the hypothyroid group and subclinical hypothyroid group combined.^[11] However, the results were in contrast to Thakur *et al.* in which 67 (84.8%) were euthyroid, 11 (13.9%) were hypothyroid, and 1 (1.2%) was hyperthyroidism.^[12]

About 30.0% of the women in the age group of 31–40 years were euthyroid. This is close to the study done by Sudha *et al.* in which 28.0% of the women in the 31–40 years were euthyroid.^[13] In our study, 14.0% of women in the 31–40 years age group had subclinical hypothyroidism. This is in contrast with Sudha *et al.* in which 8.0% of the women in this age group had subclinical hypothyroidism.^[13]

In our study, menorrhagia was found in 54.0% of the patients. This is in contrast with Thakur *et al.* which had 13.0% of the cases of menorrhagia and Sudha *et al.* which had 35.0% of cases of menorrhagia.^[13] However, the results of our study were close to Ajmani *et al.* which had 50.0% of the women with menorrhagia.^[11]

About 70.0% of the patients having menorrhagia were euthyroid. The results were almost similar to Sudha *et al.*

which had 74.2% of the menorrhagia patients. Our results were not very far from Ajmani *et al.* which had 60.0% of the menorrhagia patients in the euthyroid group. In our study, none of the women with hyperthyroidism had menorrhagia. This contrasts with the results obtained in Thakur *et al.*, in which 100% of the women with hyperthyroidism had menorrhagia.

CONCLUSION

Thyroid hormone is essential for women's menstrual and reproductive health. However, thyroid dysfunction is more common in patients between the ages of 31 and 40 years. Therefore, thyroid testing should be done on every woman with menstrual irregularities during her first visit. Correction of thyroid dysfunction may eliminate the need for unnecessary interventions such as hormone treatment to stop bleeding and hysterectomy in people with thyroid dysfunction.

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