

A cross sectional study to evaluate the relation between thyroid disorders and abnormal uterine bleeding in reproductive age group

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Received: 31st January, 2019

Accepted: 2nd May, 2019

Abstract

Introduction: Abnormal uterine bleeding (AUB) is a common disorder occurring in reproductive age group females. It can be understood as bleeding that occurs from the uterus outside the normal parameters and there is no structural defects in the genital tract. One of the most common association with AUB is thyroid dysfunctions. Hence this study aimed to see the incidence of thyroid related disorders in AUB and also to assess the menstrual pattern.

Material and Methods: 100 women suffering from AUB who presented to OPD of Gynecology department of SMS Medical College, Jaipur were recruited in the study. All females in 19 to 45 years of age group with abnormal uterine bleeding were included excluding those with previously known thyroid disorder, abortion history within 3 months etc. Thyroid function tests were done in all along with ultrasonography of pelvis region. Statistical analysis done.

Results: The bleeding abnormality that was found in the most of the women was heavy menstrual bleeding. Women who presented with thyroid dysfunction were 33%. 23% had subclinical hypothyroidism, 6% had hypothyroidism and 4% had hyperthyroidism.

Conclusion: Abnormal Uterine Bleeding has strong association with thyroid disorders. Most common type of disorder is subclinical hypothyroidism. Thus all patient of AUB must be evaluated for thyroid dysfunction

Keywords: Abnormal uterine bleeding, Subclinical hypothyroidism.

Introduction

Abnormal Uterine Bleeding (AUB) means any bleeding that is not normal in amount, duration, frequency and cyclicity.¹ AUB is very common as well as a complicated presentation in gynaecology outpatient department. It is seen in 15-20% of women from the commencement of menarche to menopause and have great impact on quality life of the women.² Failure in finding etiology along with debilitating symptoms mostly results in unnecessary surgical interventions causing increase in morbidity and mortality. Endocrinological dysfunctions including thyroid disorders plays major role in its etiopathogenesis. Thyroid hormones exerts multiple effects on the human body specifically on the development, metabolism, growth and functions of major organ system in the human body.³ Looking to its effects on reproductive age group females, thyroid dysfunction leads to AUB, infertility, delayed puberty recurrent miscarriages as well as premature menopause.⁴

Mechanism behind menstrual irregularities due to thyroid disorders 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 factors.^{5,6}

Irregularities in the menstrual cycle may accompany or precede with clinically overt hypothyroidism or hyperthyroidism.⁷ Many studies have proven that hypothyroidism is more commonly associated with hypothyroidism whereas anovulation or oligomenorrhoea common in those having hyperthyroidism.^{8,9}

This study was done to evaluate the thyroid dysfunction in patients with AUB and to find out the incidence of thyroid disorders in AUB patient and also to study the menstrual pattern in thyroid disorders.

Material and Methods

It was a hospital based cross sectional descriptive type of observational study conducted in the department of Obstetrics and Gynaecology, SMS Medical College and Attached hospitals, Jaipur from April 2017 to April 2018. 100 women who presented to gynaecology outpatient department with AUB were recruited in the study.

Inclusion Criteria

1. All females in 19 to 45 years of age group with abnormal uterine bleeding and those giving informed consent were included as subjects in proposed study.

Exclusion Criteria

1. Patients with previously known thyroid disorder
2. Abortion history within 3 months
3. History of childbirth within 1 year
4. IUCD /OC pill users
5. Patients with known liver disorders or coagulopathy
6. Known cases of cancer of genital organs
7. Known cases of autoimmune disorders
8. Diagnosed cases of uterine fibroid, polyps, ovarian cyst, endometriosis, polycystic ovarian disease, malignancy, cervical tumors

Continuous variables were summarized as mean and standard deviation whereas nominal/categorical variables as proportions. Parametric tests like ANOVA test was used for continuous variables while chi-square test was used to analyses nominal/categorical variables. P value<0.05 was taken as significant. Medcalc 16.4 version software was used for all statistical calculation.

Results

A total of 100 patients in reproductive age group with AUB were recruited in the present study. Among 100 women, majority belonged to the age group between 30 to 39 years (39%) and least of them belonged to less than 20years age group. 35% were between age group of 20-29years and 21% were above 40 years of age. (Fig. 1)

Commonest pattern of bleeding was heavy menstrual bleeding (45%) followed by heavy menstrual bleeding with frequent cycles (16%). Among others 15% presented with infrequent cycles, 11% had acyclical bleeding, 8% with frequent cycles and 5% with shortened cycles. (Table 1)

Among thyroid dysfunction, majority of the women belonged to category of subclinical hypothyroid (23%).Among others 6% were hypothyroid and 4% were hyperthyroid. (Fig. 2)

Thyroid dysfunction is related to various types of bleeding abnormalities. Thyroid dysfunction was commonest in patients with acyclical bleeding (63.63%), the next common in women with infrequent cycles (40%). 37.5% of women with frequent cycles, 26.66% of women with heavy menstrual bleeding and 25% of women with heavy menstrual bleeding with frequent cycles were with thyroid dysfunction. (Table 2)

Table 1: Distribution of study subjects according to bleeding patterns

Type of bleeding	N	%
Shortened Cycles	05	05
Frequent Cycles	08	08
Acyclical	11	11
Infrequent Cycles	15	15
HMB with frequent cycles	16	16
Heavy Menstrual bleeding	45	45
Total	100	100

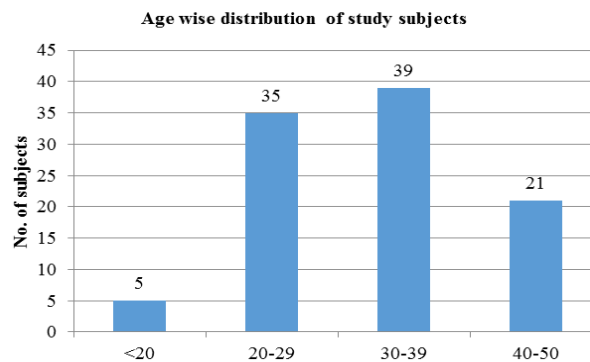


Fig. 1: Age wise distribution of study subjects

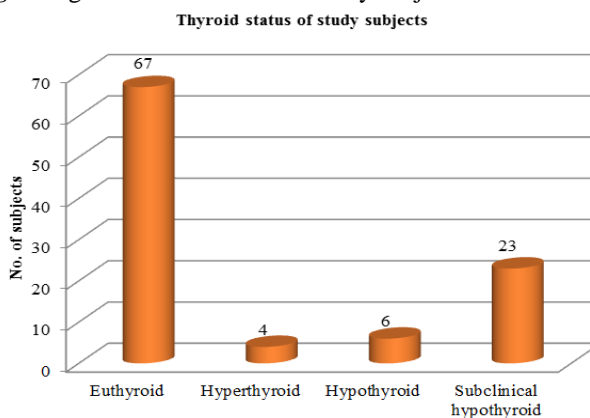


Fig. 2: Distribution of study subjects according to thyroid status

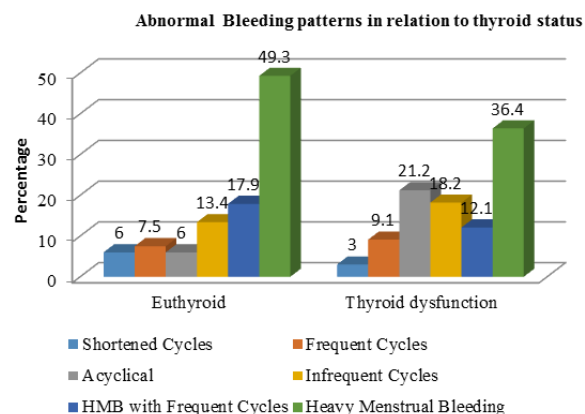


Fig. 3: Abnormal Bleeding patterns in relation to different thyroid status

Table 2: Abnormal Bleeding patterns in relation to different thyroid status

Type of bleeding	Euthyroid		Hyperthyroid		Hypothyroid		Subclinical hypothyroid		Total
	N	%	N	%	N	%	N	%	
Shortened Cycles	04	80	00	0	01	20	00	0	5
Frequent Cycles	05	62.5	00	0	00	0	03	37.5	8
Acyclical	04	36.36	01	9.09	02	18.18	04	36.36	11
Infrequent Cycles	09	60	02	13.33	01	6.66	03	20	15
HMB with frequent cycles	12	75	00	0	00	0	04	25	16
Heavy Menstrual bleeding	33	73.33	01	2.22	02	4.44	09	20	45
Total	67		04		06		23		

Discussion

Thyroid disorders are common in females with subclinical hypothyroidism as its most common type. Menstrual irregularities are seen in both hyperthyroidism as well as hypothyroidism.

In the study most of the women were in the age group 30-39 years. Similar study done by Mohapatra S et al¹⁰ reported that highest incidence of AUB was seen in the age group 30-39 years (39%). Parveen M ET al¹¹ also observed that majority of the women were in the age group between 30-39 years (44%). Similar results were in the study by Ali J ET al,¹² Jinger SK et al¹³ and George L et al.¹⁴ 45% of women presented with complaint of heavy menstrual bleeding making it the most common pattern of AUB. It was followed by heavy menstrual bleeding with frequent cycles which was seen in 16% of women. Parveen M et al¹¹ also found an incidence of 45% of heavy menstrual bleeding in their study. In study by Ali J et al¹² and Verma SK et al¹⁵ 42% and 47.5% presented with HMB respectively. Women with complaint of shortened cycles were 5% which was similar as in the study by Verma SK et al¹⁵ i.e. 3.5% and Parveen M et al¹¹ i.e. 5%.

We observed that 33% of cases were diagnosed with thyroid dysfunction constituting 23% of the cases with subclinical hypothyroidism, 6% of the cases with hypothyroidism and 4% of the cases with hyperthyroidism. In the present study majority of the women were euthyroid, followed by subclinical hypothyroid, hypothyroid and hyperthyroid in decreasing frequency. These results were consistent with the study of Mohapatra S et al,¹⁰ Parveen M et al.¹¹ In this study amongst those with thyroid dysfunction, women with subclinical hypothyroidism (69.69%) were greater than those with hypothyroidism (18.18%). This was similar to results of the study by George L et al¹⁴ (55.90% subclinical hypothyroid and 10.1% hypothyroid) and Maria JD et al¹⁶ (66.40% subclinical hypothyroid). In a study by Avasthi S et al¹⁷ hypothyroid women were 16.66% of total thyroid dysfunction similar to this study.

49.3% of euthyroid women and 36.4% of women with thyroid dysfunction presented with HMB. These results were comparable to the results of the study done by Maria JD ET al¹⁶ who concluded that 45.83% of euthyroid and 41.4% of women with thyroid dysfunction complained of HMB. In our study most common type of menstrual abnormality in women with subclinical hypothyroidism was heavy menstrual bleeding (39%). 25% of women with hyperthyroidism and 33% of women with hypothyroidism presented with heavy menstrual bleeding. In AUB patterns 63.63% of women with acyclical bleeding and 26.66% of patients with HMB were of thyroid dysfunction. Results were similar to study of Mohapatra S ET al,¹⁰ Parveen M ET al¹¹ and Deshmukh PY ET al.¹⁸

Conclusion

Abnormal uterine bleeding is strongly associated with thyroid related disorders. Any abnormality in menstrual cycle can be a possible presenting symptom of thyroid disorders, thus thyroid functions tests must be evaluated in

them. It can lead to early diagnosis as well as treatment preventing unnecessary surgical interventions.

Acknowledgement

The authors sincerely thank Dr. Amandeep Singh, Dr. Namita Verma, Dr. Surekha, Dr. Vaidehi, Dr. Chitra, Dr. Anant, and Dr. Gayatri for their valuable support and help.

Funding: None.

Conflict of Interest: None.

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How to cite this article: Verma K, Verma S, Rajoria L, A cross sectional study to evaluate the relation between thyroid disorders and abnormal uterine bleeding in reproductive age group. *Indian J Obstet Gynecol Res* 2019;6(2):177-180.