

Evaluation of thyroid disorders in abnormal uterine bleeding

Sharma P¹, Patil P.²

¹Dr. Priyanka Sharma, Consultant, Department of Obstetrics & Gynecology, Sitadevi Hospital, Jaipur, India.

²Dr. Pooja Patil, Associate Professor, Department of Obstetrics & Gynaecology, L.N. Medical College, Bhopal, India.

Address for Correspondence: Dr. Pooja Patil, 104, Amarnath Colony, Kolar Road, Bhopal, Madhya Pradesh, India.

E-mail: pooja_gynec@yahoo.co.in.

Abstract

Introduction: 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. **Method:** 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. **Result:** 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 oligomenorrhoeic. **Conclusion:** 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].

It is well known that The menstrual cycle is a complex interaction between the female reproductive system and the endocrine (hormone- producing glands) system. Menstrual irregularity can occur if there is problem in any of these system (reproductive and endocrine).

Thyroid hormone disorders could be responsible for all kind of menstrual cycle irregularities.

Term used to describe AUB: [3]

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. Amenorrhea: 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].

Manuscript received: 6th July 2017
Reviewed: 16th July 2017
Author Corrected: 24th July 2017
Accepted for Publication: 28th July 2017

Original Research Article

Aims and Objectives

- 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.
- To assess the menstrual abnormality in women with thyroid disorder.

Material & method

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 No.1]. 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 No.2]. The major menstrual complaint of AUB patients was menorrhagia (44%), 20% presented with oligomenorrhoea, 16% had polymenorrhoea, and 4% had amenorrhea [Table No.3]. 65% of the patients with AUB were euthyroid, 17% had subclinical hypothyroidism and 15% were diagnosed to be hypothyroid. 3% patients had hyperthyroidism [Table No.4]. Thyroid dysfunction in AUB patients was commonest in the age group of 41-45 years (50%), followed by 47% in 31-40 year age group and 28% in less than 20 years group [Table no.5]. 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 no.5]. 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 No.5]. In our 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 No.6].

Table No.-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%

Table No.-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%

Table No.-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%
Amenorrhea	4	4%

Table No.-4: Thyroid dysfunction in AUB patients.

	Euthyroid	Hypothyroid	Subclinical Hypothyroidism	Hyperthyroidism
No. of patients.	65	15	17	3

Table No.-5: Thyroid dysfunction in different age group of AUB patients.

Age	No. of cases	Euthyroid	Hypothyroid	Sub clinical Hypothyroid	Hperthyroid	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%

Table No.-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%)
Amenorrhea	4	3(75%)			1(25%)

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 [6]. Surendra Kumar Jinger et al in their study of 100 women with AUB had 49% in 20-30 yr age group [7]. Pilli et al reported that AUB is seen in 87% multipara, 7% primipara and 6% nulliparous [6]. In our 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% [6] in the study by Sangeeta Pahwa et al^[8] study it was in 50% patients and in Deshmukh et al [9] study 40% had menorrhagia. 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 Sangeeta Pahwa et al 24% had thyroid dysfunction [8]. In the study by Marimuthu K et al, out

of 250 cases of AUB, 68 (27.2%) cases had thyroid dysfunction [10]. Surendra Kumar Jinger et al found 47% patients having thyroid dysfunction in their study and 53% euthyroid [7]. 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 [10]. Sangeeta Pahwa et al observed in their study that 22% of cases were found to be hypothyroid, 2% hyperthyroid and 76% were euthyroid [8].

Sampath S et al had done their study on clinico-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 [11].

Original Research Article

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 Rema V. Nair et al [12] and in 46.15% patients in the study by Menon Bharucha et al [13]. Douglas et al observed that 22.3% of cases with menorrhagia had subclinical hypothyroidism [14]. In our 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 Lakshmi Singh et al [15]. Pushpasiri Chandel et al also confirmed that hypothyroidism causes menorrhagia and hyper-thyroidism reduces menstruation [16].

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.

Funding: Nil, **Conflict of interest:** None initiated,

Permission from IRB: Yes

References

1. Hoffman B., Schorge J, Schaffer J, Halvorson L, Bradshaw K, Cunningham F, "Abnormal uterine bleeding" Williams Gynecology, 2nd edn, 2012:220.
2. Dutta DC, "Abnormal menstrual bleeding" Textbook of Gynaecology including contraception, 4th edn, 2005: 177.
3. Speroff L, Glass LH, Kass NG. Clinical gynecological endocrinology and infertility, 6th edn. Baltimore. Lippincott Williams ac Wilkins 1999; 201-238, 575-9.
4. Rashid Latif Khan formerly known as Five Teachers Gynaecology, 3rd edn 2009:255

5. Hoffman B., Schorge J, Schaffer J, Halvorson L, Bradshaw K, Cunningham F, "Abnormal uterine bleeding". Williams Gynaecology, 2nd edn 2012:234.

6. Pilli GS, Sethi B, Dhaded AV, Mathur PR, "Dysfunctional uterine bleeding" J. obst gynae India 2001; 52(3): 87-89.

7. Jinger SK, Verma A, Dayma I, Talreja T, "To study the thyroid profile in menstrual disorder at tertiary care hospital in northern western Rajasthan, India" Int J Res Med Sci 2017 May;5 (5):2212-2214

8. Pahwa S, Gupta S, Kumar J, "Thyroid dysfunction in dysfunctional uterine bleeding" J Adv Res Bio Sci. 5 (1); 2013:78-73.

9. Deshmukh PV, Boricha BG, Pandey A, "The association of thyroid disorders with abnormal uterine bleeding" Int J Reprod Contracep Obstet Gynecol 2015; 4 (3): 701-8.

10. Marimuthu K, Loganathan M, "Influence of thyroid gland in women with abnormal uterine bleeding in reproductive age group" Int J Reprod Contracep Obstet Gynecol 2017 June;6 (6):2222-2225

11. Sampath S, Singh P, Somani BL, Arora MM, Batra HS, Harith AK, Ambade V. Study of Clinico-biochemical Spectrum of Hypothyroidism. Med J Armed Forces India. 2007 Jul; 63(3):233-6. doi: 10.1016/S0377-1237(07)80142-0. Epub 2011 Jul 21.

12. Rema V. Nair, "Evaluation of Thyroid profile in patients with abnormal uterine bleeding" Int J Health Sci Res 2015; 15(9):94-8.

13. Menon UK, Barucha KE, "Menstrual dysfunction and thyroid diseases" J. Obst Gynae India 1995(4):521-26

14. Douglas L. Nilansky, Bernard Gniseman, "Early Hypothyroidism" Am J obstet and gynaecol 1990: 163 (2): 697.

15. Laxmi Singh Agarwal CG. SR Chowdhary, Mehra p., Rayana Khare, "thyroid profile in infertile women". J of obst and gynae of India 1990; 40:248.

16. Pushpa Sirichand, "Impaired thyroid function in patient with menstrual disturbances" World App Sci J 2009; 7(4):538-542.

How to cite this article?

Sharma P, Patil P. Evaluation of thyroid disorders in abnormal uterine bleeding. *Obs Rev: J Obstet Gynecol* 2017;3(3):17-20. doi: 10.17511/joog.2017.i03.01.