



AN OBSERVATIONAL STUDY OF ASSOCIATION OF SUBCLINICAL HYPOTHYROIDISM AND ABNORMAL UTERINE BLEEDING

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ABSTRACT

Introduction Abnormal uterine bleeding is a common gynecological presentation, accounting for at least 20% of all new outpatient visits. It has been recognized that thyroid dysfunction may have profound effects on the female reproductive system. Both hypothyroidism and hyperthyroidism are associated with a variety of changes, including delayed onset of puberty anovulatory cycles, and abnormally high fetal wastage. Hence, this study was conducted to know the thyroid status of the patient with abnormal uterine bleeding. **Aim & Objective:** 1. To estimate the Prevalence & association of subclinical hypothyroidism among women presenting with abnormal uterine bleeding. **Methods:** A descriptive cross-sectional study was conducted in 250 patients with abnormal uterine bleeding in a tertiary care hospital. Data was collected using a questionnaire which includes patients profile, the pattern of abnormal uterine bleeding, and thyroid profile. **Settings and Design:** This study was done in a MGM medical college indore & myh hospital in Madhya Pradesh. **Results:** Out of 250 patients presenting with AUB, 163 (71.6%) were euthyroid, 20 (3.6%) were overt hypothyroid, and 10 (0.5%) was hyperthyroidism and 57 (24.2%) were subclinical hypothyroidism. The mean levels of the thyroid-stimulating hormone were 4.28 ± 2.76 mIU/L. The mean triiodothyronine and thyroxine were 132.6 ± 34.90 and 9.81 ± 3.60 , respectively. The most common symptom abnormal uterine bleeding was menorrhagia 74 (29.8%), followed by polymenorrhoea 53 (21.4%), hypomenorrhoea 32 (12.9%), intermenstrual bleeding 31 (12.5%), acyclical bleeding 6 (2.8%) and oligomenorrhoea 3 (1.2%). The maximum number of patients was between 41-50 years with the mean age of 41 years. **Conclusion:** There is significant association between subclinical hypothyroidism and abnormal uterine bleeding. The prevalence of subclinical hypothyroidism in the study group was 24.2%. It is suggested that women with early onset menorrhagia and oligomenorrhoea with or without symptoms & signs attributable to thyroid dysfunction should be offered thyroid function testing to detect subclinical stage. Early detection by selective screening and specific pharmacotherapy for subclinical thyroid disease early in the course of the disease will prove to be a superior alternative to surgical treatments like hysterectomy.

KEYWORDS :

INTRODUCTION

Abnormal uterine bleeding (AUB) is a broad term for abnormalities in the menstrual cycle that involve duration, regularity, frequency and volume of flow. A typical menstrual cycle occurs every 24 to 38 days, lasts 7 to 9 days, and results in blood loss of 5 to 80 milliliters. [1] Any variations in these 4 factors qualify as irregular uterine hemorrhage. [2] The International Federation of Obstetrics and Gynecology (FIGO) has developed the useful acronym PALM-COEIN to categorise the underlying causes of irregular uterine bleeding. structural problems are described in the first section, PALM. Non-structural problems are described in the Coein. [3] Hypothyroidism alters the peripheral metabolism of oestrogen; thereby decreasing sex hormone binding globulin (SHBG) production. Both the pathways may lead to abnormal feedback at the level of the pituitary gland. Independent of the hormonal mechanisms, hypothyroidism can cause menorrhagia by altered production of coagulation factors (decreased levels of factor 7, 8, 9, 11).

Subclinical hypothyroidism (SCH), also known as mild thyroid failure, is recognised when blood thyroid-stimulating hormone (TSH) levels are mildly high yet peripheral thyroid hormone levels are within the normal reference laboratory range. 3%-8% of the overall population has this problem. As people age, it becomes more common and affects more women than men. Less than 10mIU/L of serum TSH was seen in 80% of SCH patients.

The primary consequence of SCH is an increased risk of becoming clinically hypothyroid. Thus, thyroid dysfunction is one very important cause of menstrual disturbances experienced by women. Its recognition is valuable as specific and reliable therapy is available. Hence, this study was

conducted to know the Association subclinical hypothyroidism and abnormal uterine bleeding.

MATERIAL AND METHODOLOGY

This is descriptive cross-sectional study that was carried out in the department of obstetrics and gynecology at MGM Medical College, INDORE over a period of 1 year. All patients of abnormal uterine bleeding attending the gynecology department during this period from puberty to those who have not attended menopause were included.

Sample Size

A total 250 patient were included in the study

Inclusion Criteria

- All women with abnormal uterine bleeding.
- No obvious cervical and genital lesions.
- Not on hormonal therapy
- No evidence of any Hematological disorder

Exclusion Criteria:

- Not given consent
- Suspected pelvic infection.
- Profusely bleeding patients requiring therapeutic curettage.
- Women on oral contraceptives.
- Premalignant and malignant lesions of cervix.
- Cervical stenosis.
- IUCD USER

Statistical Analysis

Appropriate test of significance like t-test, chi square test applied wherever necessary and p value <0.05 was considered as statically significantly.

Ethical Consideration

- Conflict of interest – no
- Funding – no

Ethical clearance obtained

RESULT

Abnormal uterine bleeding is one of the most frequently encountered condition in gynecological practice.

The maximum number of patient 95 (38%) were belonged to the age group 41-50 years , 73 (29.2%) of patient had from 31-40 years of age group. mean age is 40.68+12.57. among various menstrual irregularities the commonest was menorrhagia 74 (29.8%), 53(21.4%) of the patients had polymenorrhea. The prevalence of subclinical hypothyroidism was 57 (24.2%) , hypothyroid cases 20(3.6%)and hyperthyroid cases 10(0.5%), euthyroid cases163(71.6%) among total patients.

Table :1 Descriptive analysis of thyroid disorders in study population.

Complain	Frequency	Percentage
Euthyroid	163	71.6%
Hyperthyroid	10	0.5%
Hypothyroid	20	3.6%
S. Hypothyroid	57	24.2%
Total	250	100%

Table 2: Descriptive analysis of complain in study population

Complain	Frequency	Percentage
Menorrhagia	74	29.8%
Polymenorrhea	53	21.4%
Hypomenorrhea	32	12.9%
Intermenstrual bleeding	31	12.5%
Acyclical bleeding	6	2.8%
Oligomenorrhea	3	1.2%
Total	250	100%

The Above table shows the descriptive analysis of complain in study population 74(29.8%) women had menorrhagia, 53(21.4%) women had polymenorrhea, 48(19.4%) % polymenorrhagia, 32(12.9%) women had hypomenorrhea, Descriptive analysis of diagnosis in study population 121(48.6%) women had AUB-L 38 (15.3%) women had AUB-E, 28 (11.2%) had AUB-O, 23(9.2%) women had AUB-A, 16 (6.4%) women had AUB-P,2(0.4%) AUB-M, 21(8.4%) women had AUB-Other. The most common is AUB-L (48.6%) followed by AUB-E (11.2%)

Table 3: Comparison of complain with Subclinical Hypothyroid

Complain	Subclinical Hypothyroid		Total
	Yes	No	
Menorrhagia	15 (26.3%)	59 (30.6%)	74 (29.6%)
Polymenorrhea	12 (21.1%)	41 (21.2%)	53 (21.2%)
Polymenorrhagia	12 (21.1%)	37 (19.2%)	49 (19.6%)
Hypomenorrhea	8 (14.0%)	24 (12.4%)	32 (12.8%)
Intermenstrual bleeding	6(10.5%)	25(13.0%)	31 (12.4%)
Acyclical bleeding	4 (7.0%)	3 (1.6%)	7 (2.8%)
Oligomenorrhea	0 (0.0%)	3 (1.6%)	3 (1.2%)
Menorrhagia	0 (0.0%)	1 (0.5%)	1 (0.4%)
Total	57	193	250

Chi square - 6.52, P value- 0.481

The above tables show the relationship of subclinical hypothyroidism to the different types of clinically diagnosed case of AUB. In Acyclical bleeding , patients had subclinical hypothyroidism patients in 4(7%). Where in patient with Hypomenorrhea 8(14.0%) had subclinical hypothyroidism

found. Patient with Intermenstrual bleeding had subclinical hypothyroidism in 3(10.5%), patient with Menorrhagia 15(26.3%) had subclinical hypothyroidism .Polymenorrhagia had 12(21.1%) had subclinicalhypothyroidism. P value- 0.481value significant.

Table 4: Comparison of diagnosis with Subclinical Hypothyroid

Diagnosis	Subclinical Hypothyroid		Total
	Yes	No	
AuB – P	2 (3.5%)	14 (7.3%)	16 (6.4%)
AUB – A	5 (8.8%)	18 (9.4%)	23 (9.2%)
AUB – L	16 (28.1%)	105 (54.7%)	121 (48.6%)
AUB – M	0 (0.0%)	2 (0.5%)	2 (0.4%)
AUB - C	0 (0.0%)	1 (0.5%)	1 (0.4%)
AUB-O	3 (5.3%)	25 (13.0%)	28 (11.2%)
AUB – E	18 (31.6%)	20 (10.4%)	38 (15.3%)
AuB –Other	13 (22.8%)	8 (4.2%)	21 (8.4%)
Total	57	193	250

Chi square – 41.36, P value- <0.001

The above table shows the percentage of DIAGNOSIS found in Subclinical hypothyroidism. AUB-L16(28.1%) had subclinical hypothyroidism . AUB-E 18(31.6%) had subclinical hypothyroidism,. AUB-O 3(5.3%) had subclinical hypothyroidism. AUB-A 5(8.8%) had subclinical hypothyroidism,.AUB-P 2(3.5%) had subclinical hypothyroidism, 2(0.5%). AUB- other 13(22.8%) had subclinical hypothyroidism.P value-less than 0.001 significant.

DISCUSSION

Abnormal uterine bleeding is a frequently encountered condition in the present scenario in the gynaecology outpatient department and is an important cause of menstrual pattern abnormality. Thyroid disorders in general and hypothyroidism, in particular, are extremely common in women of reproductive age group. Menarche, pubertal growth and development, menstrual cycles, fertility and fetal development, postpartum period, reproductive years, and menopausal years are all profoundly influenced by the thyroid status of the woman. Thyroid disorders have been seen to affect the menstrual pattern in females and present with a varied spectrum of bleeding patterns. Menstrual disturbances may accompany and even may precede thyroid dysfunction and may accompany clinical alterations. Age Distribution of Cases For a better statistical analysis, the study population was divided into different age groups: ≤20, 21–30, 31–40, 41–50 ,51-60, 61-70, >70years.. The youngest patient was 16 years and the oldest 89 years of age with the highest number of cases belonging to the age group 41-50 years (38%), closely followed by the age group 31-40 years (29.2%). Ali sebtain et al [4] studied that most AUB patients were in the mean age group of 47.2+ 78. saroj khatiwada et al reported that the mean age of study patients 25.7+6.8. Symptoms and Findings In various studies carried out to date, heavy menstrual bleeding seems to be the most common AUB pattern. In the present study as well, 29.8 % of patients presented with menorrhagia, 21.4% presented with polymenorrhea, 19.4% presented with polymenorrhagia, thus making it the commonest presentation of AUB. Similarly, in another study conducted by pujari et al.69% of cases presented with menorrhagia .Distribution of Cases According to Thyroid Abnormality The study showed a significant correlation between thyroid profile (T3, T4 and TSH) and AUB (p=0.001%) .The study showed significant association of menorrhagia with hypothyroidism and hypomenorrhea, It was observed that 3.6% of cases were overt hypothyroid in the study while 0.5% of cases were hyperthyroid and the rest 71.6% yof cases were euthyroid. Similar results have been put forward by Ali et al. [4] 71 % of the cases being hypothyroid, respectively. In contrast to this, a study conducted by Prasad et

al.[5] depicted that 18% had subclinical hypothyroidism and 9 % of cases were hypothyroidism and 3% of patients had Hyperthyroidism .While 15.5% subclinical hypothyroidism was the most common ,3.5% hypothyroid and 1.5% hyperthyroid in a study conducted by Ezhil rini et al [6]. Distribution of cases according to T3, T4, TSH value in study population In present study the mean value of TSH is 4.22+2.76. The minimum value is 0.40 and maximum value is 11.20. The mean value of TSH were 4.4+2.5 MIU/L in ali sebatatin [4] study.the mean TSH was 1.97+1.92 with minimum and maximum level as 0.1and 7.7 found in Robina farrukh et al study . In present study the mean value of t3 is 132.67+ 34.90. The mean value is 64 and maximum value is 218.the mean value of T3 were 3.2+1.9 in ali sebatatin et al study [4].In present study the mean value of free T4 is 9.81+3.60. The minimum value is 2.50 and maximum value is 17.40.the mean value of T4 were 1.5+0.7 in ali sebatatin et al [4] Relation of Heavy Menstrual Bleeding with Subclinical Hypothyroidism In this study, it was seen that out of 74 cases presenting with menorrhagia, 15 cases (27.8%) had hypothyroidism. This result is comparable to the study by et al summers [66]—64.29%. However, in the study by Ali et al.[4]—90.. it was seen that out of 32 patients presenting with light menstrual bleeding 7 cases (13%) were Subclinical Hypothyroidism ,This result was comparable to the study by Padmaleela et al[7].as well as Kaur et al.19—25%. On the contrary, a study conducted by Sharma and Sharma⁷ reported that 54.55% of cases of light menstrual bleeding had hyperthyroidism while it was 65.38% in a study done by Ali et al [4]. Pelvis USG finding in study population In the present study, it was observed that USG pelvis was normal in most of the cases. Fibromyoma was detected in 48.6% of patients followed by endometrial hyperplasia in 15.3%, then other cause are 11.2% and endometrial polyp in 6.4% of cases. 54% polyp found in the study.fibromyoma was detected in 27.24% of patients followed by adenomyosis in 12.60% of patients, endometrial hyperplasia in 10.97% and endometrial polyp in 4.47% of cases I mini bedi et al [8]study . In the present study in pelvic usg findings intramural (39.2%) and submucosal is the most common followed by subserosal (16.2%).

CONCLUSIONS

Prevalence of hypothyroidism was more common than hyperthyroidism in AUB cases Thyroid dysfunction is associated with menstrual disturbances which can get relieved with normalization of thyroid status, so thyroid assessment should be performed in all patients with menstrual irregularities. There is a significant association between thyroid disorder and abnormal uterine bleeding. It brings into focus the increased incidence of hypothyroidism among women with menorrhagia and amenorrhoea. Prevalence of subclinical hypothyroidism is around 24.2% .

It is suggested that women with early onset menorrhagia and oligomenorrhoea attributable to thyroid dysfunction should be offered thyroid function test to detect them in subclinical stage. Early detection by selective screening and specific pharmacotherapy for subclinical thyroid disease early in the course of disease was beneficial.

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