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Study of Hypothyroidism in Women with Abnormal Uterine Bleeding

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Abstract:
Objectives*: To determine the prevalence of hypothyroidism in women with AUB (15 – 45 years), to assess the menstrual pattern in women with hypothyroidism, to determine the endometrial pattern in abnormal uterine bleeding with hypothyroidism.*
Material &Methods:*This is prospective observational study conducted in department of OBG, Gandhi Medical College/Hospital. Sample size being 100. All the women in the age group of 15 to 45 in Abnormal Uterine Bleeding were evaluated during the period March 2014 to October 2015.*
Thorough clinical examination including general examination, gynaecological examination done. Patients with signs and symptoms of thyroid dysfunction are excluded. All these patients are subjected to routine investigations – HB%, CBP, CUE, CT BT and thyroid function tests, T3, T4, TSH. T3 and T4 were assayed by chemiluminescentimmuno assay.
Results: *In my study maximum no. of patients were in the age group of 35 – 45 years. Among 100 cases of AUB maximum are with para 3 – 37 cases (37%) and minimum cases are with unmarried 3 cases (3%). Regarding bleeding pattern maximum were seen with complaints of menorrhagia (38%). Minimum were seen with oligomenorrhoea (6%). Distribution of patients according to thyroid function apparently normal patients with AUB belongs to the category of hypothyroidism (19%) and hyperthyroidism in 2% casesthough they were clinically normal. Among hypothyroid patients (n=19) the most common menstrual irregularity was menorrhagia 57.89% (n=11), polymenorrhoea 15.78% (n=3), polymenorrhagia 10.52% (n=2) and least common were oligomenorrhoea, hypomenorrhoea and metropathiahemorrhagica. Endometrial biopsy in AUB patients with hypothyroidism shows Proliferative type (63.15 %) followed by Secretory type (26.31%) and least common type is Cystic Glandular Hyperplasia (10.52%).*
Conclusion: *Our study was aimed at detecting and evaluating hypothyroidism in patients with AUB and positive cases are managed after discussing with physician.*
Our study concludes that hypothyroidism should be considered as an important etiological factor for menstrual irregularity.

I. Introduction

Abnormal Uterine Bleeding is a common complaint encountered in Gynaecology OPD. It occurs in 9 – 14% of women from Menarche to Menopause affecting quality of life imposing financial burden[1]. Thyroid dysfunction causes broad spectrum of reproductive disorders from abnormal sexual development, menstrual irregularities, infertility and premature menopause[2].

Thyroid disorders are 10 times more common in women and increase prevalence of thyroid disorders in women is possibly due to auto immune nature[3].Menstrual disturbances accompany clinical alterations in thyroid function and every clinician must have encountered altered menstrual pattern among women suffering from hypo or hyper thyroidism.Hypothyroidism causes menorrhagia. Hyperthyroidism is associated with menorrhagia followed by oligomenorrhoea and scanty flow proportionate to the severity of thyrotoxicosis. Hence, present study was undertaken to evaluate the thyroid function in patients having Abnormal Uterine Bleeding.

Abnormal Uterine Bleeding is a frequent debilitating symptom resulting in unnecessary incorrect and expensive treatment and in variably ends up in a surgery with attendant risk of morbidity and mortality.
Diseases of thyroid gland are among the most prevalent disorders worldwide second only to diabetes[4]. This study is to evaluate hypothyroidism in patients with Abnormal Uterine Bleeding in reproductive age group from 15 to 45 years which will help in further management and also to know the prevalence of hypothyroidism in Abnormal Uterine Bleeding.

II. Pathophysiology Of Aub In Hypothyroidism

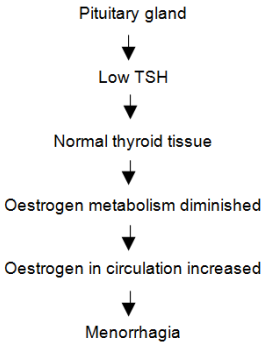
Abnormality of menstruation is primarily a disorder of hypothalamico-pituitary-ovarian axis either through direct effect or indirectly by their effect on target organ. Endocrinological disturbances other than the

reproductive hormones form a small but significant sub-group in the aetiopathogenesis of abnormal uterine bleeding. Amongst the endocrinological causes, after the pituitary, thyroid is probably the most important endocrine organ which exerts a broad range of effects on the development, growth, metabolism and function of virtually every organ system in the human body.

Alterations in production and activity of the thyroid hormones thyroxine (T4) and tri-iodothyronine (T3) may result in menstrual abnormality. Both hyperthyroidism and hypothyroidism may result in menstrual disturbances.

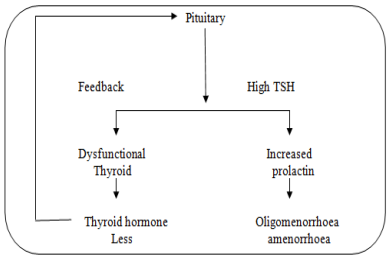
Hypothyroidism may result in excessive menstrual bleeding and severe blood loss. The mechanism of menorrhagia in hypothyroidism is incompletely understood. It is postulated that infrequent or absent ovulation leads to deficient secretion of luteinizing hormone which may result in relative estrogen excess thereby causing menorrhagia. There may be episodes of ammenorhoea interspersed with periods of heavy vaginal bleeding also. Various studies have reported that there are changes in cycle length, amount and duration of bleeding associated with thyroid disorders. Sometimes they may also present with infertility, recurrent pregnancy losses and galactorrhoea.

Menorrhagia Patients Who Had Hypothyroidism



Studies showed that 33.3% patients with hypothyroidism had menorrhagia. The mechanism explained was it seems that poor progesterone production is associated with persistent endometrial proliferation which may be responsible for massive bleeding. Another, mechanism for this may be failure of LH secretion. 44.4% patients with hypothyroidism had oligomenorrhoea. This was explained by the galactorrhoeaamenorrhoea syndrome in long standing hypothyroid patients.

FIG.6 : Oligomenorrhoea In Hypothyroidism



Aim:-

Study of hypothyroidism in women with Abnormal Uterine Bleeding in reproductive age group.

Objective:-

- To determine the prevalence of hypothyroidism in reproductive age group women with Abnormal Uterine Bleeding(15 – 45 years).
- To assess the menstrual pattern in women with hypothyroidism.
- To determine endometrial pattern in Abnormal Uterine Bleeding with hypothyroidism.

III. Material & Methods

This is prospective observational study conducted in department of OBG, Gandhi Medical College/Hospital. Sample size being 100. All the women in the age group of 15 to 45 with Abnormal Uterine Bleeding were evaluated during the period March 2014 to October 2015.

Inclusion Criteria:-

Patients attending Gynaec OPD with complaint of Abnormal Uterine Bleeding in the age group of 15 to 45 years.

Exclusion Criteria:-

- Diagnosed case of ovarian cyst, uterine fibroids, polyps, endometriosis, PCOD, malignant endometrial and cervical tumors.
- Patients with pelvic infections including endometritis and PID.
- Patients with goiter, carcinoma thyroid, with overt thyroid dysfunction.
- Patients on drugs, hormones, IUCD users.
- Patients with history of bleeding disorders.

IV. Methodology

A detailed history is obtained with relevance to age, bleeding pattern, onset duration, amount of bleeding, complaints related to thyroid dysfunction noted.

Thorough clinical examination including general examination, gynaecological examination done. Patients with signs and symptoms of thyroid dysfunction are excluded. All these patients are subjected to routine investigations – HB%, CBP, CUE, CT BT and thyroid function tests, T3, T4, TSH. T3 and T4 were assayed by chemiluminescentimmuno assay. These tests are done in random blood sample as the variation in TSH secretion due to circadian rythm is minimal.

Reference values are Serum T4 – 60 – 120ng/ml
Serum T3 – 0.8 – 60ng/ml
Serum TSH – 0.5 – 5.0µiu/ml

Patients are grouped into 3 categories

- Euthyroid
- Hyperthyroid
- Hypothyroid

Patient with Abnormal Uterine Bleeding who were diagnosed as hypothyroid, where subjected to endometrial biopsy for HPE.

Statistical Method

Data were entered into an excel spreadsheet and double checked for any errors. It was analyzed by using Epi – Info version 3.5.2.

V. Observation & Results:-

Abnormal Uterine Bleeding is most frequently encountered condition in gynaecological practice.
The following tables will be analysed.

1. Age
2. Parity
3. Symptomatology of Abnormal Uterine Bleeding
4. Association with Hypothyroidism
5. Endometrial pattern in hypothyroid cases with Abnormal Uterine Bleeding

TABLE – 1 – AGE

Age (years)	No.of Cases	Percentage of prevalance %
15 – 24	17	17%
25 – 34	30	30%
35 – 45	53	53%
Total	100	100%

According to above table maximum number of patients in the study group belongs to the age group of 35 – 45 years - 53% and minimum in the age group of 15 – 24 years 17% were seen.

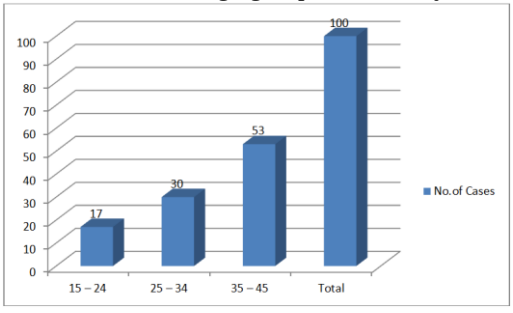


TABLE – 2 – PARITY

Parity	No. of Patients	Percentage of prevalence%
Unmarried	3	3%
Nullipara	7	7%
1	16	16%
2	23	23%
3	37	37%
≥ 4	14	14%

The above column shows relationship of AUB with parity. Among 100 cases of AUB maximum are with para3 – 37 cases (37%) and minimum cases are with unmarried 3 cases (3%).

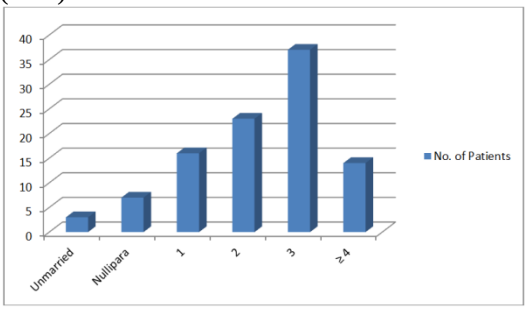


TABLE 3 – DISTRIBUTION OF PATIENTS ACCORDING TO MENSTRUAL DISORDERS

Type of Bleeding	No. of Cases	Percentage of prevalence %
Menorrhagia	38	38%
Polymenorrhoea	26	26%
Polymenorrhagia	12	12%
Oligomenorrhoea	6	6%
Hypomenorrhoea	10	10%
Metropathiahemorrhagica	8	8%

The above table shows 100 patients who came with the complaint of different bleeding pattern. Maximum were seen with complaints of menorrhagia (38%). Minimum were seen in oligomenorrhoea (6%).

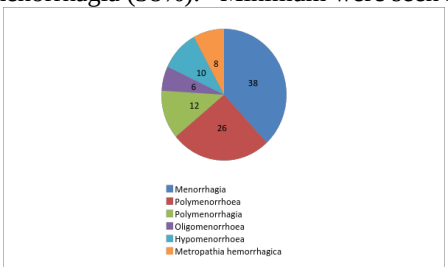


TABLE – 4 DISTRIBUTION OF PATIENTS ACCORDING TO THYROID FUNCTION

Thyroid Function	No. of Cases	Percentage %
Euthyroid	79	79%
Hypothyroid	19	19%
Hyperthyroid	2	2%
Total	100	100%

According to this table maximum number of apparently normal patients with AUB belongs to the category of hypothyroidism (19%) and hyperthyroidism in 2% cases though they were clinically normal.

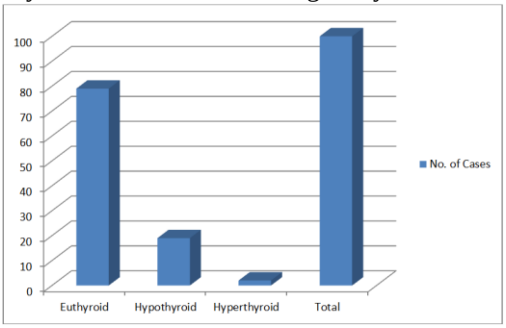


TABLE 5MENSTRUAL DISORDERS IN HYPOTHYROIDISM

Observed Menstrual Irregularity	**Hypothyroidism (n=19)**	**Total (n=19) Percentage**
Menorrhagia	11	57.89%
Polymenorrhoea	3	15.78%
Polymenorrhagia	2	10.52%
Oligomenorrhoea	1	5.26%
Hypomenorrhoea	1	5.26%
Metropathiahemorrhagica	1	5.26%
Total	19	99.97%

Among hypothyroid patients (n=19) the most common menstrual irregularity was menorrhagia 57.89% (n=11), polymenorrhoea 15.78% (n=3), polymenorrhagia 10.52% (n=2) and least common were oligomenorrhoea, hypomenorrhoea and metropathiahemorrhagica.

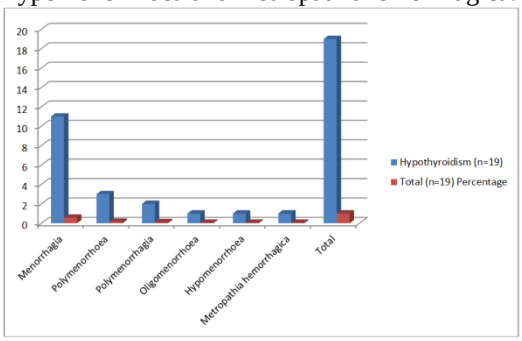
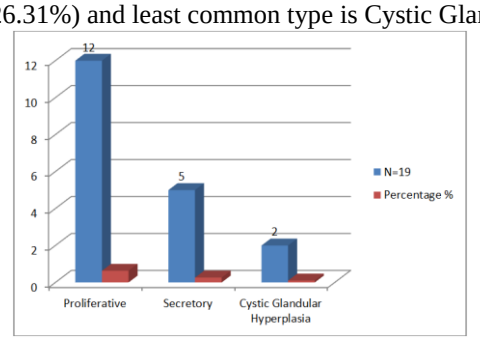


TABLE 6ENDOMETRIAL BIOPSY IN MENSTRUAL DISORDERS DETECTED AS HYPOTHYROIDISM

Thyroid Status	Proliferative	Secretory	Cystic Glandular Hyperplasia
N=19	12	5	2
Percentage %	63.15%	26.31%	10.52%

This table shows most common hypothyroid patients shows Proliferative type (63.15 %) in Endometrial Biopsy followed by Secretory type (26.31%) and least common type is Cystic Glandular Hyperplasia (10.52%).



VI. Discussion

Abnormal Uterine bleeding is a common problem amongst women and is associated with an array of symtomps. Frequent complaints include heavier or prolonged menstrual flow with or without pain, passage of clots, weakness, lethargy associated with social embarrassment, significant alteration in lifestyle of individual and sexual compromise. Accurate determination of the prevalence of abnormal uterine bleeding is difficult, however approximately 15 - 20 % of scheduled office gynaecological visits are for abnormal uterine bleeding.

Abnormal Uterine bleeding is a frequent debilitating symptom in gynaecological practice resulting in need for repeated curettage and hysterectomy with its attendant morbidity and mortality. The aetiology of abnormal uterine bleeding is very diverse.Hypothyroidismis one of the common causes of excessive menstrual blood loss and menstrual irregularities. The onset of hypothyroidism is so insidious that classic clinical manifestation may take months and years to appear. Furthermore menorrhagia may be the only presenting complaint in hypothyroid women.

With the advent of modern hormonal assay techniques precise estimation of thyroid hormones in serum is possible in a rapid and reliable manner. Treatment of hypothyroidism is very satisfying as it usually relieves patient of all the symptoms. Hence in investigating a patient with menstrual irregularities, evaluation of thyroid

functional status forms an essential component. Early detection of hypothyroidism in such subjects saves the patient from recurrent curettage and at times hysterectomy.

In the present study patients were taken from all age groups which included 15-45 years and maximum number of patients were in the age group of 35- 45 years. In a similar study by Charusheela D. Doifode et al;(2001)also maximum number of patients were in age group 31-40 years. Present study groups ranged patients according to parity as unmarried, nullipara, para 1, para 2, para 3, para 4 and above. Similarly Charusheela D Doifode,KalpanaFernandeshad also grouped parity into unmarried, nullipara, para 1, para 2, para 3, para 4 and more.

Hypothyroidism in AUB

Studies	**Hypothyroid**
Mukherjee & gosh	44%
Doifode&fernendes	28%
Tajinderkour et al	14%
Neelushama et al	22%
Padmaleela et al	18.1%
PahwaSangeetha et al	22%
Present Study	19%

Among 100 women with AUB 19% are with hypothyroidism, 2% are hypothyroid and 79% are euthyroid, which was similar to the study done by Padmaleela et al ; (2013), Kaur T et al; (2013) and N Bhavani et al;(2015). One of the explanations is the activity of thyroid is that closely linked with the process of ovarian maturation. The thyroid gland is itself dependent on direct and indirect stimulation from the ovary to discharge its own function.

TABLE – 7 – AGEWISE PATTERN IN AUB WITH HYPOTHYROID CASES

	Present Study		**Padmaleela et al Study**	
Age in Years	**No of Patients**	**Hypothyroid Cases**	**No of Patients**	**Hypothyroid Cases**
15 - 24	17	3 (5.2%)	13	3 (20.0%)
25 - 34	30	7 (36.8%)	26	2 (13.4%)
35 - 45	53	9 (57.8%)	44	10 (66.6%)
Total	100	19	83	15

In our study hypothyroidism seen in all age groups 15 to 24 years (15.2%), 25-34 years (36.8%) and 35–45 years (57.8%) similar to the study by Padmaleela at el; (2013).

TABLE – 8 – PARITY WISE DISTRIBUTION OF AUB WITH HYPOTHYROIDISM

Parity	**Present Study**		**Neelusharma et al**	
	Hypothyroid	Percentage	Hypothyroid	Percentage
Unmarried	0	0	1	9.09
Nullipara	2	10.52	1	9.09
Multipara	17	89.47	9	81.81

In the present study most of the patients (89.47) with AUB are hypothyroidism belong to multi para (2 and above) same as in Neelu Sharma et al study (2012) 81.81% were hypothyroidism in patients with AUB.

TABLE – 9 – DISTRIBUTION OF THE PATIENTS ACCORDING TO THE THYROID FUNCTION

	Present Study	**NeeluSharma et al**	**Tajinderkour et al**	**Padmaleele et al**
Total No of Cases	100	50	100	83
Euthyroid	79 (79%)	32 (64%)	85 (85%)	61 (73.5%)
Hypothyroid	19 (19%)	11 (22%)	14 (14%)	15 (18.1%)

This table compares the hypothyroidism among patients with AUB.
In present study 79% patients are Euthyroid, 19% are Hypothyroid.
In Neelu Sharma et al Study 64% are Euthyroid, 22% patients are hypothyroid.
In RajinderKour et al study (2011) 85% patients are euthyroid,14 % are hypothyroid.
In Padmaleela et al study (2012) 73.5% are Euthyroid,18.1% are hypothyroid.

TABLE – 10 – MENSTRUAL PATTERN IN HYPOTHYROID PATIENTS

Bleeding Pattern	Present Study (n=100)		Padmaleela et al (n=83)		C.D.Doifode et al (n=213)	
	No of Patients	Percentage	No of Patients	Percentage	No of Patients	Percentage
Menorrhagia	11	57.89	8	53.3	38	63.33
Polymenorrhoea	3	15.78	2	13.3	0	0
Polymenorrhagia	2	10.52	1	6.7	14	23.3
Oligomenorrhoea	1	5.26	2	13.3	0	0
Hypomenorrhoea	1	5.26	1	6.7	0	0
Mertropathia hemorrhagica	1	5.26	0	0	4	6.66
Metrorrhagia	0	0	0	0	4	6.66
Amenorrhoea	0	0	1	6.7	0	0
Total No of Hypothyroid cases	19	19	15	18.1	60	28.17

The commonest menstrual pattern in hypothyroid patients in the present study is menorhagia, accounting as high as 57.13%. Hypothyroidism is also associated with menstrual patterns like polymenorrhoea (57.78%), polymenorrhagia (10.52%), Oligomenorrhoea (5.26%), Hypomenorrhoea (5.26%) and MetropathiaHemorrhagica (5.26%).

K.Padmaleela et.al studied abnormal menstrual pattern in hypothyroid patients. Similar to this study, here 53.3% had menorhagia, 13.3% had polymenorrhoea, polymenorrhagia, hypomenorrhoea and amenorrhoea 6.7% each

TABLE – 11 – ENDOMETRIAL BIOPSY IN HYPOTHYROID CASES IN PATIENTS WITH AUB

Type of Endometrium	Present Study	Padmaleela et al	Kaur et al
Proliferative	12(63.15%)	9(60%)	9(64.3%)
Secretory	5(26.31%)	4(26.71%)	2(14.3%)
CysticGlandular Hyperplasia	2(10.52%)	2(13.3%)	3(21.4%)
Total no of hypothyroid cases	19	15	14

Above table shows endometrial biopsy in patients with AUB diagnosed as hypothyroidism.
In our study the most common finding in endometrial biopsy was proliferative type 63.15%.

Secretory endometrium in 26.31% of hypothyroid patients and cystic glandular hyperplasia was found in 10.51% of hypothyroid patients.

In Padmaleela et al study 60% of hypothyroid patients shows their endometrium as proliferative type. Secretory endometrium was found in 26.7%, cysytic glandular hyperplasia was found in 13.3% of hypothyroid patients, which is close to the findings of our study.

VII. Conclusion

Our study was aimed at detecting and evaluating hypothyroidism in patients with AUB and positive cases are managed after discussing with physician.

Our study concludes that hypothyroidism should be considered as an important etiological factor for menstrual irregularity.

Biochemical estimation of T3 T4 TSH should be made mandatory in abnormal uterine bleeding especially in non structural causes and to detect profound hypothyroidism.

These patients with hypothyroidism, if given medical treatment, it is possible to avoid unnecessary hormonal treatment and costly surgical interventions.

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