

## Correlation Between Thyroid Disorders And Abnormal Uterine Bleeding

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**ABNORMAL UTERINE BLEEDING** (3) is defined as Any bleeding from the genital tract which is a deviation from the normal in frequency, cyclicality and quantity. The average duration of menstrual cycle is 28 days (21 – 35 days), duration of bleeding varies from (2-8 days) and mean menstrual blood loss is about 30 – 40 ml.

AUB is one of the common causes of women attending gynecology OPD, constituting around 30 percentage. It encompasses a wide spectrum of disorders such as Structural and Non structural causes. Thyroid dysfunction accounts for 30% - 40% of cases in systemic disorders causing AUB.

Thyroid disorders are 10 times more common in women than in men (1). Currently subclinical thyroid dysfunction is on the rising side than overt dysfunction.

The goal of evaluation of AUB is to arrive at an accurate and clinically useful diagnosis in the most efficient and cost effective manner possible. Thyroid function test is helpful in women presenting with AUB to detect subclinical conditions and provide an opportunity to treat the cause. This will avoid unnecessary hormonal treatment, surgery and reduce patient morbidity.

## **AIM OF THE STUDY**

To evaluate and detect the thyroid dysfunction in patients with abnormal uterine bleeding.

To assess the menstrual patterns in women with thyroid disorders.

## **MATERIALS AND METHODS**

### **STUDY DESIGN**

A hospital based prospective observational study

### **STUDY PERIOD**

2023 JUNE to JUNE 2024.

### **SAMPLE SIZE**

289 Patients

### **INCLUSION CRITERIA**

Women with undiagnosed Abnormal uterine bleeding.

#### **EXCLUSION CRITERIA**

1. Patients with previous known thyroid disorder
2. Abortion history within 3 months
3. History of childbirth within 1 year
4. Patients using contraception
5. Patients with known coagulopathy
6. Known cases of cancer of genital organs
7. Postmenopausal women.

#### **METHODOLOGY**

The present study has been carried out at the department of Obstetrics and gynecology and general medicine on 289 patients who are diagnosed with Abnormal uterine bleeding from June 2023 to June 2024. Ethical committee approval obtained.

Relevant obstetric and gynecologic history, physical findings, Detailed menstrual history and pattern of bleeding (Blood loss was quantified using Pictorial blood loss assessment chart), Laboratory values and Ultrasound imaging noted in the pro forma. The pattern of bleeding, probable causes of bleeding and thyroid disorders are analyzed and tabulated.

#### **STATISTICAL DATA**

Patients presenting with abnormal uterine bleeding will be recruited in this study.

Minimum number of patients required for the study is 152

Hypothesis Testing for Single Proportion

Population Proportion  $P_0 = .65$

Sample Proportion  $P_a = .54$

Power (%)  $\equiv 80$

Alpha Error (%)  $\equiv 5$

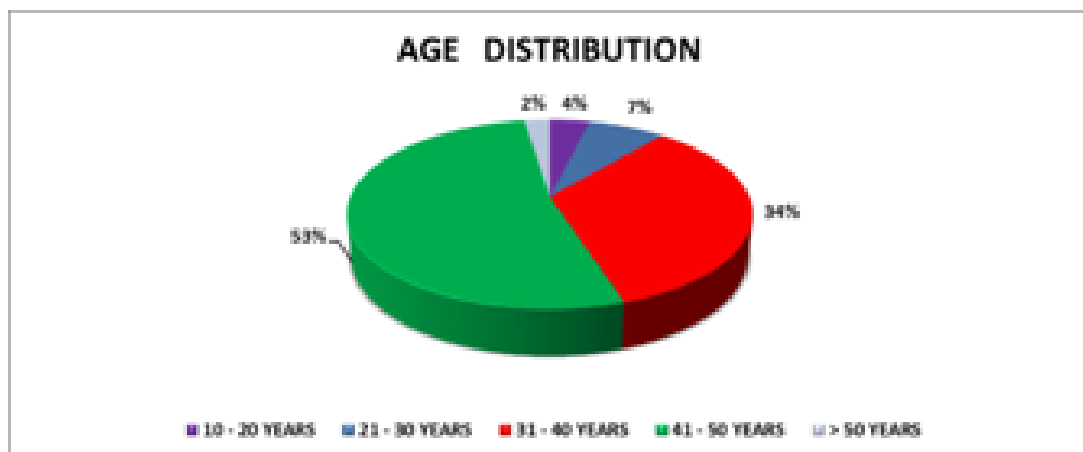
Sample size (n) = 152

The power of the study is 152, I have taken 289 patients in my study.

#### **RESULTS AND ANALYSIS**

### AGE DISTRIBUTION

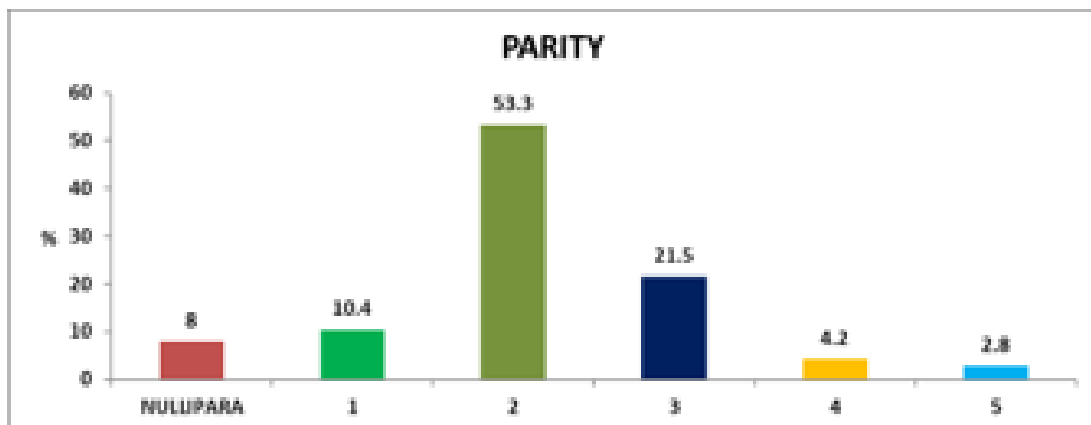
Age	No of patients N=289	Percent %
10 - 20 YEARS	11	3.8
21 - 30 YEARS	21	7.3
31 - 40 YEARS	98	33.9
41 - 50 YEARS	152	52.6
> 50 YEARS	7	2.4



Among 289 patients majority of patients belonged to the age group of 41-50 years 52.6%

**PARITY**

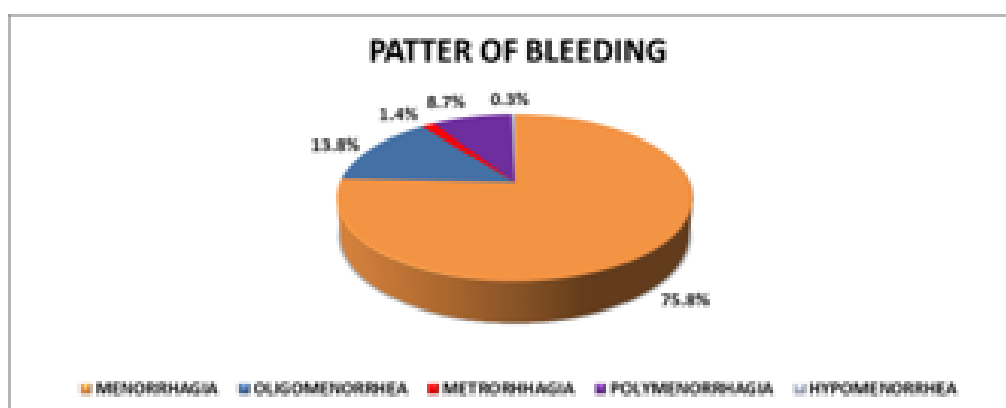
Parity	No of patients N=289	Percent %
NULLIPARA	23	8.0
1	30	10.4
2	154	53.3
3	62	21.5
4	12	4.2
5	8	2.8



Multiparous women (P2L2) constitute the major part of this study (53.3%)

**PATTERN OF BLEEDING**

Pattern of bleeding	No of patients N=289	Percent %
MENORRHAGIA	219	75.8
OLIGOMENORRHEA	40	13.8
METRRORRHAGIA	4	1.4
POLYMENORRHAGIA	25	8.7
HYPOMENORRHEA	1	.3
Total	289	100.0



The commonest thyroid abnormality noticed is subclinical hypothyroid 43.3%.

**CAUSES OF BLEEDING AND THYROID ABNORMALITY**

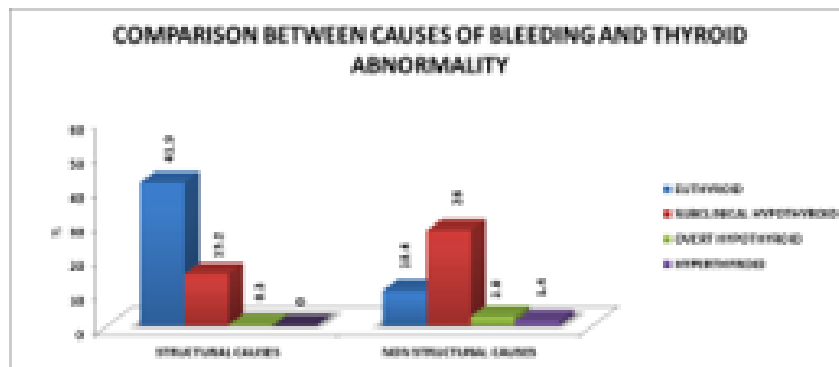
CAUSES OF BLEEDING	THYROID ABNORMALITY				Total
	EUTHYROID	SUBCLINICAL HYPOTHYROID	OVERT HYPOTHYROID	HYPERTHYROID	
STRUCTURAL CAUSES	Count 121 % of Total 41.9%	Count 44 % of Total 15.2%	Count 1 % of Total .3%	Count 0 % of Total .0%	Count 166 % of Total 57.4%
<u>NON-STRUCTURAL CAUSES</u>	Count 30 % of Total 10.4%	Count 81 % of Total 28.0%	Count 8 % of Total 2.8%	Count 4 % of Total 1.4%	Count 123 % of Total 42.6%
Total	Count 151 % of Total 52.2%	Count 125 % of Total 43.3%	Count 9 % of Total 3.1%	Count 4 % of Total 1.4%	Count 289 % of Total 100.0%

Chi-Square Tests				
		Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square		70.398 <sup>a</sup>	3	.000

a.

3 cells (37.5%) have expected count less than 5.

The minimum expected count is 1.70.



18.2% of the patients with structural causes have associated thyroid dysfunction causing AUB

10.4% of patients have no cause of AUB

32.2% of patients have AUB with only cause being thyroid



dysfunction.

**NON STRUCTURAL CAUSE AND THYROID DYSFUNCTION**

Thyroid status	No of cases N=123	Percentage %
EUTHYROID	30	24.4
SUBCLINICAL HYPOTHYROID	81	65.8
OVERT HYPOTHYROID	8	6.5
HYPERTHYROID	4	3.3

Amongst then on structural causes Subclinical hypothyroid is the only cause of AUB in 65.8% of the patients.

**CAUSES OF BLEEDING AND THYROID ABNO:**

CAUSES OF BLEEDING		THYROID ABNO:		
		EUTHYROI D	SUBCLINICAL HYPOTHYROID	HY
POLYP	Count	17	4	
	% of Total	5.9%	1.4%	
ADENOMYOSIS	Count	18	6	
	% of Total	6.2%	2.1%	
FIBROID	Count	78	28	
	% of Total	27.0%	9.7%	
<u>OVARIAN</u> <u>CAUSES</u>	Count	8	6	
	% of Total	2.8%	2.1%	
<u>NON</u> <u>STRUCTURAL</u> CAUSES	Count	30	81	
	% of Total	10.4%	28.0%	

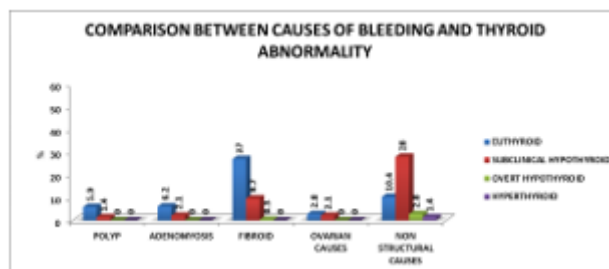
**CAUSES OF BLEEDING AND THYROID AB**

CAUSES OF BLEEDING		THYROID ABNO		
		EUTHYROI D	SUBCLINICAL HYPOTHYROID	HY
POLYP	Count	17	4	
	% of Total	5.9%	1.4%	
Total	Count	151	125	
	% of Total	52.2%	43.3%	

**Chi-Square Tests**

	Value	df	Asymp. Sig. (2- sided)
Pearson Chi-Square	72.602 <sup>a</sup>	12	.000

a. 10 cells (50.0%) have expected count less than 5. The minimum expected count is .19.



Thyroid abnormalities are also associated with structural causes and cause AUB

Commonly associated structural cause with thyroid abnormality is fibroid -10%

**PATTER OF BLEEDING AND THYROID ABNORMALITY**

PATTER OF BLEEDING	THYROID ABNORMALITY				Total
	EUTHYROID	SUBCLINICAL HYPOTHYROID	OVERT HYPOTHYROID	HYPERTHYROID	
MENORRHAGIA Count % of Total	119 41.2%	92 31.8%	5 1.7%	3 1.0%	219 75.8%
OLIGOMENORRHEA Count % of Total	21 7.3%	16 5.5%	3 1.0%	0 .0%	40 13.8%
METORRHAGIA Count % of	0 .0%	3 1.0%	1 .3%	0 .0%	4 1.4%

**PATTER OF BLEEDING AND THYROID ABNORMALITY**

PATTER OF BLEEDING	THYROID ABNORMALITY				Total
	EUTHYROID	SUBCLINICAL HYPOTHYROID	OVERT HYPOTHYROID	HYPERTHYROID	
MENORRHAGIA Count % of Total	119 41.2%	92 31.8%	5 1.7%	3 1.0%	219 75.8%
TOTAL					
POLYMENORRHAGIA Count % of Total	10 3.5%	14 4.8%	0 .0%	1 .3%	25 8.7%
HYPOMENORRHEA Count	1	0	0	0	1

PATTER OF BLEEDING AND THYROID ABNORMALITY

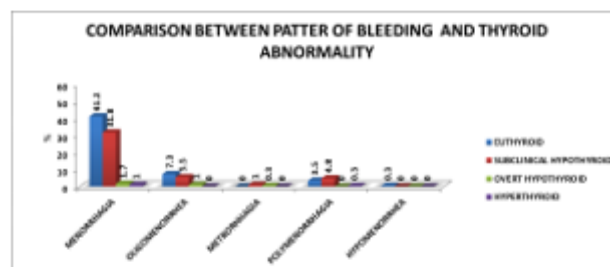
PATTER OF BLEEDING	THYROID ABNORMALITY				Total	
	EUTHYROID	SUBCLINICAL HYPOTHYROID	OVERT HYPOTHYROID	HYPERTHYROID		
MENORRHAGIA	Count	119	92	5	3	219
	% of Total	41.2%	31.8%	1.7%	1.0%	75.8%
Total	Count	151	125	9	4	289
	% of Total	52.2%	43.3%	3.1%	1.4%	100.0%

Chi-Square Tests

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	17.685 <sup>a</sup>	12	.126

a. 13 cells (65.0%) have expected count less than 5.

The minimum expected count is .01.



The commonest pattern of bleeding in AUB in this study is Menorrhagia -75.8%.

34.5% of the Patients with thyroid dysfunction had Menorrhagia as their bleeding pattern.

The commonest thyroid abnormality noted is Subclinical hypothyroid.

DISCUSSION

The Present study was conducted in the Department of Obstetrics and Gynecology and General medicine. It comprises of 289 Patients with Abnormal Uterine Bleeding.

AUB is a benign yet debilitating disease with a strong association with thyroid disorders. Our study highlights the association between AUB and thyroid dysfunction by measurement of FT4 and TSH in women with AUB.

Age distribution

STUDY	AGE	PERCENTAGE
G.Lakshmi et al(24)	25-35	48.5%
Bhavani et al(25)	41-50 years	40%
Present study	41-50 years	52.6%

The most common age group studied was between 41-50 years (52.6%), similar to study by Dr.Bhavani et al. A study done by Dr.G.Lakshmi et al showed the common age group was 25-35 years, however in this study age limit was 40 years, hence the difference. However many studies haven't taken age as a parameter as there is no significant association.

Parity

STUDY	PARITY	PERCENTAGE
G.Lakshmi et al (24)	Para 2	54.5%
Bhavani et al (25)	Para 2	21.5%
Present study	Para 2	53.3%

Multiparous women (P2L2) constitute the major part of the study 53.3% similar to the above studies. There is no significant association between parity, AUB and thyroid dysfunction.

Pattern of bleeding

STUDY	PATTER OF BLEEDING	PERCENTAGE
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G.Lakshmi et al (24)	Menorrhagia	43.6%
Bhavani et al (25)	Menorrhagia	54%
Present study	Menorrhagia	75.8%

The most common type of AUB presentation is Menorrhagia 75.8% similar to above studies.

#### Thyroid abnormality

STUDY	THYROID ABNORMALITY	PERCENTAGE
Pushpakha rom et al (22)	Hypothyroid	82.5%
Bhavani et al (25)	Subclinical hypothyroid	10%
Present study	Subclinical hypothyroid	43.3%

The commonest thyroid abnormality was subclinical hypothyroid-43.3%, similar to above studies.

#### PATTERN OF BLEEDING IN THYROID DYSFUNCTION

STUDY	PATTERN OF BLEEDING	PERCENTAGE
Prentice (20)	Menorrhagia	36%
Kaur (21)	Menorrhagia	64.3%
Pushpakha rom et al (22)	Menorrhagia	40%
G.Lakshmi et al (24)	Menorrhagia	43.6%
Bhavani et al (25)	Polymenorrhea	57.1 %
Veena et al (26)	Menorrhagia	75%
Present study	Menorrhagia	34.5%

This study concludes that the commonest pattern of bleeding associated with thyroid dysfunction is Menorrhagia similar to above studies.

Study by Bhavani et al is the only study that shows the pattern of bleeding associated with thyroid dysfunction is polymenorrhea.

#### CONCLUSION

Our study concludes that thyroid dysfunction should be considered as an important etiological factor for menstrual abnormality.

Thus biochemical evaluation of T3, T4 and TSH estimations should be made mandatory in AUB cases to detect apparent and occult thyroid dysfunction.

Thyroid dysfunction can be associated even in a patient with obvious structural cause hence evaluation of thyroid dysfunction is mandatory.

These patients with thyroid dysfunction if given medical treatment avoids necessity of hormonal treatment or surgical intervention.