

## PREVALENCE OF SUBCLINICAL HYPOTHYROIDISM IN REPRODUCTIVE AGE GROUP WOMEN WITH ABNORMAL UTERINE BLEEDING

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### ABSTRACT

#### BACKGROUND

In women with menstrual irregularities, thyroid dysfunction has a major share in aetiology and it brings into focus the increased incidence of hypothyroidism among women with menorrhagia and amenorrhoea. The present study by prospective evaluation method sought to find out the prevalence of subclinical hypothyroidism in reproductive age group women with abnormal uterine bleeding.

#### METHODS

The study population consisted of 250 women attending gynaecology outpatient clinic, Institute of Social Obstetrics and Government Kasturba Gandhi Hospital with the menstrual complaints in the age group of 18-45 years.

#### RESULTS

Among 250 women under study majority were in the age group of 25-35 years (41.2%); 5.6% had infertility and 8.8% had history of abortions.

Majority in the study group had menorrhagia (59.2%) and oligomenorrhoea (27.2%). Among 250 women, 20 women (8%) detected to have a subclinical hypothyroidism.

#### CONCLUSION

Our Study Highlights the Following

1. There is a significant association between thyroid disorders and abnormal uterine bleeding.
2. Increased incidence of hypothyroidism among women with menorrhagia and amenorrhoea.
3. Early detection by selective screening and specific pharmacotherapy for subclinical thyroid disease early in the course of disease was beneficial.

#### KEYWORDS

Subclinical Hypothyroidism, Abnormal Uterine Bleeding, Amenorrhoea.

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#### INTRODUCTION

Abnormal uterine bleeding is aberrant menstruation characterized by change in cycle length or duration of flow or both. AUB accounts for 10% of the gynaecology related complaints. Thyroid dysfunction is marked by large number of menstrual aberrations. Both hypothyroidism as well as hyperthyroidism is associated with change in reproductive function including delayed onset of puberty, anovulatory cycles. Menorrhagia is the common manifestation of hypothyroidism. Majority of cases has subclinical hypothyroidism and pass unrecognized and is recognized as risk factor for menstrual problems, cardiovascular diseases and abnormal mental development in foetus.

Hence, this study is to evaluate thyroid function in patients having abnormal menstrual bleeding in reproductive

age group, which will be justifiable and will help in further management of AUB.

#### Subclinical Hypothyroidism

Subclinical hypothyroidism is the term used to define a state in which serum T3 and T4 levels are within normal limits, but there is an underlying mild thyroid failure as evidenced by mild increase in serum TSH. Chronic autoimmune thyroiditis is the leading cause. The other causes are thyroid ablation with radioactive iodine, anti-thyroid drugs, drugs such as amiodarone and lithium. Subclinical hypothyroidism represents the early stage of the disease and it has been shown that there is progression to overt hypothyroidism in 4%-18% of patients who have subclinical hypothyroidism every year.

FREE T3	FREE T4	TSH	DIAGNOSIS
Normal	Normal	Normal	Euthyroid
Elevated	Elevated	Low	Hyperthyroidism
Low	Low	Elevated	Hypothyroidism
Normal	Normal	Elevated	Subclinical Hypothyroidism
Normal	Normal	Low	Subclinical Hyperthyroidism

**Laboratory Evaluation**

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**AIMS AND OBJECTIVES**

This Study Aimed Analysing the Cross Sectional Population.

- To determine the association between menstrual irregularities and thyroid function.
- To estimate the prevalence of subclinical thyroid disease among reproductive age group women with abnormal uterine bleeding.

**MATERIALS AND METHODS**

**Study Design:** Prospective Analytical Study.

**Study Period:** August 2008 to September 2009.

**Sample Population**

This study population consisted of 250 women attending gynaecology outpatient clinic in Institute of Social Obstetrics and Government Kasturba Gandhi Hospital with the following complaints,

1. Oligomenorrhoea.
2. Hypomenorrhoea.
3. Menorrhagia.
4. Polymenorrhea.
5. Amenorrhea.

**Inclusion Criteria**

- Age Group 18-45 years.
- With Menstrual Disturbances.
- No Demonstrable Pelvic Pathology.
- Not an IUCD User.
- Not on Thyroxine Replacement Therapy.
- With Symptoms of Thyroid Dysfunction.

**Exclusion Criteria**

- Presence of Palpable Pelvic Pathology.
- Known Thyroid Disorders.
- On Drugs like Aspirin, Heparin, Steroids, Amiodarone, Lithium.

After proper selection of patients, detailed menstrual history and history as to the presence of symptoms of hypothyroidism and hyperthyroidism was taken.

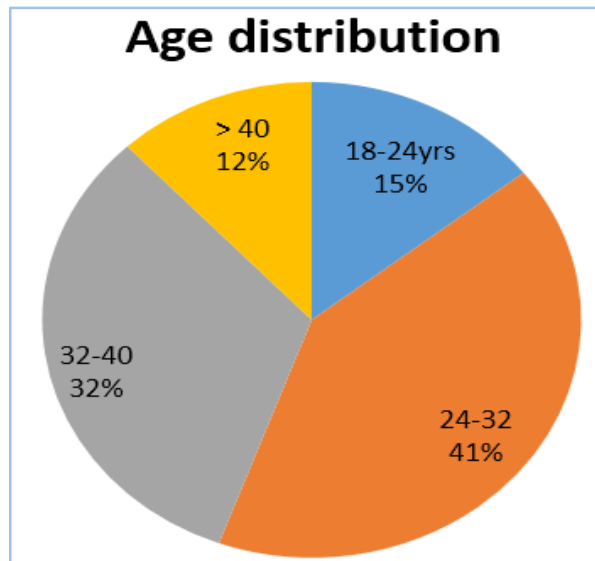
- Evaluation of General Condition of Patient.
- Cardiovascular, Respiratory, Nervous Systems were Evaluated.
- Gentle Abdominal, Speculum and Per Vaginal Examination Done.
- 5 mL of Venous Blood was taken in a Plain Glass Tube without any Anticoagulant. Morning sample in a fasting state taken and serum was separated to estimate FT3, FT4 and TSH.

HORMONE	REFERENCE RANGE
TSH	0.5-5.0 mIU/L
FREE T3	1.7-4.2 pg/mL
FREE T4	0.30-5.5 microIU/mL
<b>Thyroid Reference Value</b>	

**RESULTS AND ANALYSIS**

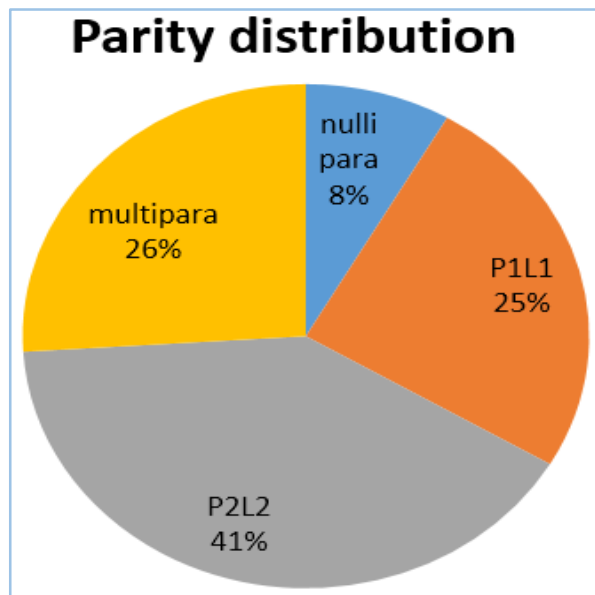
Age Group	Frequency	Percentage
18-24 years	36	14.4%
25-31 years	103	41.2%
32-39 years	81	32.4%
>40 years	30	12%

**Table 1: Age Distribution in Study Group**



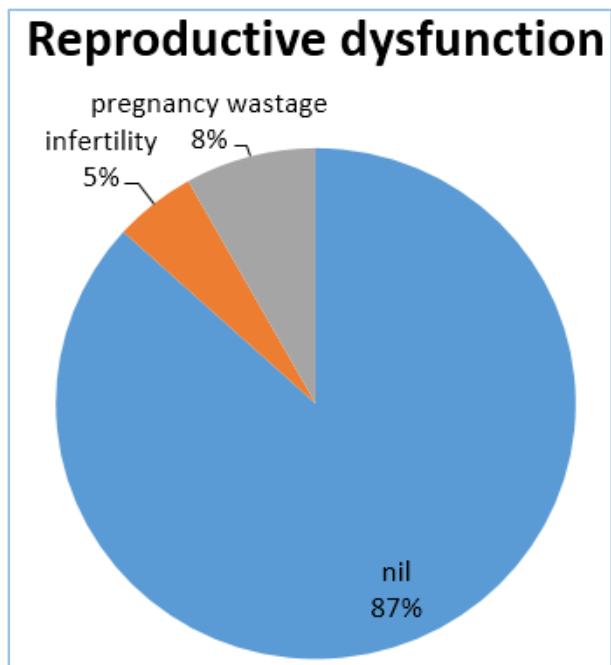
Parity	Frequency	Percentage
Nullipara	27	10.8%
P1L1	62	24.2%
P2L2	98	39%
Multipara	63	25%

**Table 2: Distribution of Cases According to Parity**



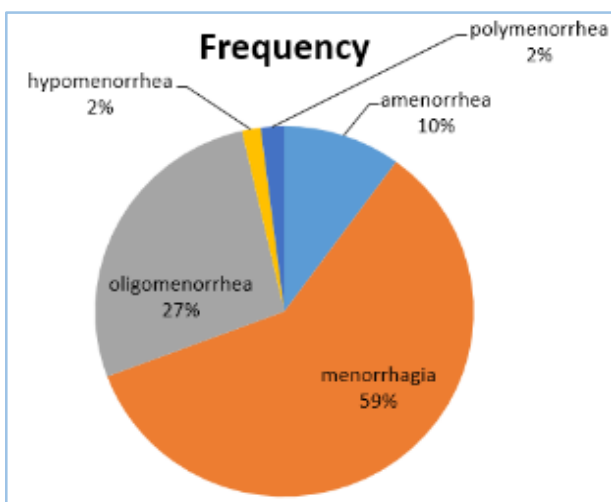
Reproductive Dysfunction	Number	Percentage
Nil	214	85.6%
Infertility	14	5.6%
Pregnancy Wastage	22	8.8%

**Table 3: Reproductive Dysfunction in Study Group**



Type	Frequency	Percentage
Amenorrhoea	25	10%
Menorrhagia	148	59.2%
Oligomenorrhoea	68	27.2%
Hypomenorrhoea	4	1.6%
Polymenorrhoea	5	2%

**Table 4: Type of AUB**



Clinical Uterine Size	Number	Percentage
Normal	242	96.8%
Bulky Uterus	8	3.2%

**Table 5: Gynaecological Examination**

Endometrial Histology	Number	Percentage
Secretory	55	22%
Proliferative	177	70.8%
Hyperplasia	18	7.2%

**Table 6: Dilatation and Curettage**

T3	Number	%
<1.7	39	15.6%
1.7-4.2	193	77.2%
>4.2	18	7.2%

**Table 7: T3 Values (1.7-4.2 pg/mL)**

T4	Number	%
<0.7	39	15.6%
0.7-1.8	193	77.2%
>1.80	18	7.2%

**Table 8: T4 Values (0.7-1.8 ng/mL)**

TSH	Number	%
<0.5	18	7.2%
0.5-5	173	69.2%
>5	59	23.6%

**Table 9: TSH Values (0.5-5.0 mIU/mL)**

Type of Thyroid Dysfunction	Number	%
Hypothyroidism	39	15.6%
Normal	173	69.2%
Hyperthyroidism	18	7.2%
Subclinical Hypothyroidism	20	88%

**Table 10: Type of Thyroid Dysfunction**

Menstrual Dysfunction	Subclinical Hypothyroidism	Percentage
Oligomenorrhoea	2	5%
Menorrhagia	14	70%
Amenorrhoea	4	25%
Hypo and Polymenorrhoea	0	0%

**Table 11: Menstrual Dysfunction in Subclinical Hypothyroidism**

**DISCUSSION**

Abnormal uterine bleeding is a benign yet debilitating disease with strong association with thyroid disorders. This study highlights the association between AUB and thyroid dysfunction.

In our study, the mean age of women with thyroid dysfunction was 36 years. C A Petta et al. 2007 in their cross-sectional study carried out in 148 women with menstrual dysfunction found a mean age of 34.6 years.<sup>1</sup> Vanderpump MP et al. 1995, in their 20 years follow-up of Whickam survey had a mean age of 34 years.<sup>2</sup> Sampath S et al. 2007, in their study on clinico-biochemical spectrum of hypothyroidism found a mean age of 36.2 years.<sup>3</sup>

In this study, the presence of infertility (5.6%) and H/O abortions (8.8%) were associated with significant thyroid abnormalities. This prevalence is not coincided with 29% prevalence of thyroid dysfunction described by Poppe et al. 2002 in their study on thyroid dysfunction in infertile women.<sup>4</sup> Because in a previous study the sample population consisted

of women with infertility, whereas in present study the sample population taken from general gynaec clinic.

In this study, we found an association in the occurrence of menorrhagia (59.2) in hypothyroid women. In a study by Andrew D Weeks 2000, 56% had menstrual disturbances and the most common complaint was menorrhagia (36%).<sup>5</sup> Col P Singh et al. 2007, in their analysis of menstrual dysfunction among hypothyroid women stated menorrhagia was seen in 32.4% of hypothyroid women.<sup>6</sup>

The overall prevalence of thyroid dysfunction in the present study was 30.8%. This correlates with other studies; Prentice et al. medical management of menorrhagia stated 36% of women with thyroid abnormalities had menstrual dysfunction.<sup>7</sup> In another study by Wilansky et al. 1999 had 22% prevalence among patients with thyroid disorder.<sup>8</sup>

The prevalence of subclinical hypothyroidism in reproductive age group women with abnormal uterine bleeding was 8%. The prevalence studies have reported incidences between 4-10% (Mark PG et al. 1995).<sup>9</sup> Hollowell JG et al. 2002 observed 8.3% prevalence of subclinical hypothyroidism in their study.<sup>10</sup> There is a good evidence to support the fact that treatment of patients with subclinical hypothyroidism prevents progression to overt hypothyroidism (Surks MI 2004).<sup>11</sup> Failed medical therapy of dysfunctional uterine bleeding may be due to underestimate of underlying thyroid disorder.

#### SUMMARY

Abnormal uterine bleeding is a benign debilitating diseases with strong association with thyroid disorder. This study highlights the association between AUB and thyroid dysfunction.

- In our study group, the main age of thyroid dysfunction was 36 years.
- In this study, we found an association in the occurrence of menorrhagia (70%) in subclinical hypothyroid women.
- In the present study, 51% detected to have a hypothyroidism.
- In this study, the presence of infertility (2.4%) and history of abortions (5.2%) were associated with thyroid disorders.
- Prevalence of subclinical hypothyroidism is around 8%.

The prevalence of preclinical hypothyroidism was 8%. Detection of this group of women is considered a major benefit of testing, because supplementation of thyroxine to these women will revert back their symptoms. Hence, testing for thyroid function is advocated early in the course of disease.

#### CONCLUSION

##### Our Study Highlights the Following

- 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 amenorrhea.
- Prevalence of subclinical hypothyroidism is around 8%.
- 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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