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**Original Research Article**

# The Frequency of Thyroid Dysfunction and Abnormal Uterine Bleeding in North East Medical College and Hospital, Sylhet

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**Abstract:** ***Objective:*** In this study our main goal is to evaluate the frequency of thyroid dysfunction and abnormal uterine bleeding. ***Method:*** This cross-sectional study was carried out at North East Medical College and Hospital, Sylhet from January 2019 to August 2019. A convenient sample of 40 women with AUB was selected after eligibility to inclusion and exclusion criteria. Another sample of 40women with normal cycle selected as control cases. ***Results:*** During the study, comparing AUB women with control women with no AUB revealed no significant differences regarding occupation (p=0.9), marital status (p=0.2), parity (p=0.3), BMI (p=0.3), and euthyroid women wile on thyroid replacement therapy (p=1.0). There was a significant association between positive contraception history and women with AUB (p=0.001). No significant differences were observed between AUB women and controls regarding post coital bleeding (p=0.1) and history of Pap smear (p=0.07). There was a significant association between intermenstrual bleeding and women with AUB (p=0.02). The common interesting findings in our study were the significant association between high TSH level and women with AUB (p=0.002). No significant differences were observed between AUB women and controls regarding T3 level (p=0.5). Women with AUB were significantly associated with low T4 level (p=0.04); 10% of AUB women had low T4 level. a significant association was observed between women with AUB and hypothyroidism (p=0.003); 22% of AUB women had hypothyroidism while 2% of controls had hypothyroidism. ***Conclusion:*** A significant cause of thyroid dysfunction is abnormal uterine bleeding in women of reproductive age. Thyroid hormones should be taken into account in the evaluation of patients with unexplained uterine bleeding.

**Keywords:** Thyroid dysfunction, abnormal uterine bleeding (AUB), thyroid hormones.



## INTRODUCTION

Abnormal uterine blood circulation (AUB) is a symptom and is the common concern of people visiting clinics of gynecology. In pre- and postmenopausal ages, the AUB affects women [1]. It is described clinically in multiple ways such as menorrhagia, metrorrhagia, menometrorrhagia, polymenorrhagia, and olimenorrhoea [2]. New scheme for categorizing causes in reproductive age and by acronym is established by the International Federation of Gynecology and Obstetrics (polyps, adenomyosis, leiomyoma, malignancy and hyperplasia-coagulopathy, ovulatory disorders, iatrogenic, not classified) [3].

AUB factors may be linked to hormone balance disorders or a clinical representation of female reproductive age group with benign or malignant lesions of the female genital tract. In the absence of abnormal pathological modifications, the dysfunction-al uterine bleeding (dUB) is taken [4]. AUB is considered to be primarily unstable in most Iraqi women less than 60 years of age. However, among others it is associated with abnormal pathology [5].

Thyroid dysfunctions are widespread in the world and 10 times as common in women as among men. Thyroid disorders are frequent [6]. In Iraq there are about a third of women with non-toxic goiters, and about 25% of females with toxic goiters, while about 14.5% of women suffer from hypothyroidism [7]. Thyroid disease is associated with the menstrual cycle of women [8]. Thyroid hormones initiate a variety of physiological processes in women such as puberty, development, menstruation, and menopause [9, 10]. Our primary objective in this study is to assess the prevalence of thyroid dysfunction and uterine bleeding.

## OBJECTIVE

- To evaluate the incidence of thyroid dysfunction and abnormal uterine bleeding.

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# METHODOLOGY

**Study design**

- This study was a cross sectional study.

**Study population**

- A convenient sample of 40 women with AUB was selected after eligibility to inclusion and exclusion criteria. Another sample of 40women with normal cycle selected as control cases.

# METHOD

- The data was collected by researcher through direct interview with the selected women and completed prepared questionnaire. The questionnaire was designed by the supervisor and researcher. It included the sociodemographic characteristics of the participants (age, occupation and marital status), parity history, body mass index, smoking history, contraception history, drugs history (anti-coagulants and anti-thyroid), LMP frequency, menstrual bleeding patterns, post coital bleeding, intermenstrual bleeding, thyroid stimulating hormone level, triiodothyronine level, thyroxin level.

# DATA ANALYSIS

- A semi-structured, pre-tested and modified questionnaire designed was used to collect the information. All the data were entered and analyzed by using Statistical Package for Social Science (SPSS).

# RESULTS

In figure-1 shows age distribution of the patients where most of the patients belong to 30-39 years age group, 31%. The following figure is given below in detail:

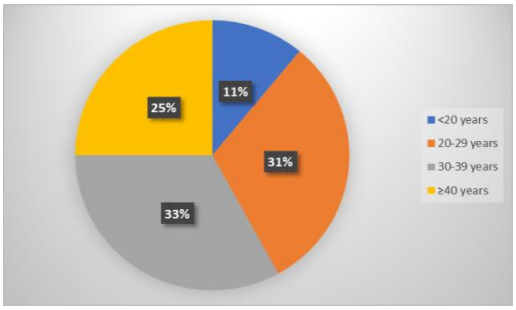


**Fig-1: Age distribution of the patients.**

In table-1 shows baseline characteristics of study group where comparing AUB women with control women with no AUB revealed no significant differences regarding occupation (p=0.9), marital status (p=0.2), parity (p=0.3), BMI (p=0.3), and euthyroid women wile on thyroid replacement therapy (p=1.0). There was a significant association between positive contraception history and women with AUB (p=0.001). The following table is given below in detail:

**Table-1: Baseline characteristics of study group**

| **Occupation** | **Case, %** | **Control, %** | **P value** |
|---|---|---|---|
| Housewife | 70 | 66 | 0.912 |
| Student | 18 | 20 | |
| Employed | 12 | 14 | |
| **Marital Status** | **Case, %** | **Control, %** | **P value** |
| Married | 80 | 70 | 0.21 |
| Single | 20 | 30 | |
| **Parity** | **Case, %** | **Control, %** | **P value** |
| Nulliparous | 20 | 5 | 0.3 |
| Multiparous | 80 | 95 | |
| **BMI** | **Case, %** | **Control, %** | **P value** |
| Normal | 32 | 36 | 0.3 |
| Overweight | 26 | 34 | |
| Obese | 42 | 30 | |
| **History of Contraception** | **Case, %** | **Control, %** | **P value** |
| Yes | 34 | 10 | 0.001 |
| No | 66 | 90 | |
| **History of Anti-Thyroid Drugs** | **Case, %** | **Control, %** | **P value** |
| Yes | 4 | 2 | 1.0 |
| No | 96 | 98 | |

In table-2 shows menstrual disturbances of the study group where No significant differences were observed between AUB women and controls regarding post coital bleeding (p=0.1) and history of Pap smear (p=0.07). There was a significant association between intermenstrual bleeding and women with AUB (p=0.02). The common interesting findings in our study were the significant association between high TSH level and women with AUB (p=0.002). No significant differences were observed between AUB women and

controls regarding T3 level (p=0.5). Women with AUB were significantly associated with low T4 level (p=0.04); 10% of AUB women had low T4 level. The following table is given below in detail:

**Table-2: Menstrual disturbances of the study**

| **LMP Frequency** | **Case, %** | **Control, %** | **P value** |
|---|---|---|---|
| Regular | 36 | 96 | <0.001 |
| Irregular | 64 | 4 | |
| **Menstrual Cycle Problems** | **Case, %** | **Control, %** | **P value** |
| Normal | 10 | 90 | <0.001 |
| Menorrhagia | 42 | 10 | |
| Oligomenorrhea | 46 | | |
| Polymenorrhea | 2.0 | | |
| **Post Coital Bleeding** | **Case, %** | **Control, %** | **P value** |
| Yes | 4 | | 0.1 |
| No | 96 | 100 | |
| **Inter-Menstrual Bleeding** | **Case, %** | **Control, %** | **P value** |
| Yes | 10 | | 0.02 |
| No | 90 | 100 | |
| **History of Pap Smear** | **Case, %** | **Control, %** | **P value** |
| Yes | 6 | | 0.07 |
| No | 94 | 100 | |
| **TS H** | **Case, %** | **Control,%** | **P value** |
| Normal | 70 | 96 | 0.002 |
| Low | 6 | 2 | |
| High | 24 | 2 | |
| **T3** | **Case, %** | **Control, %** | **P value** |
| Normal | 98 | 96 | 0.5 |
| Low | 2 | 4 | |
| **T4** | **Case, %** | **Control, %** | **P value** |
| Normal | 90 | 98 | 0.04 |
| Low | 10 | 0 | |
| High | 0 | 2 | |

Table-3 shows distribution of thyroid function in study group where a significant association was observed between women with AUB and hypothyroidism (p=0.003); 22% of AUB women had hypothyroidism while 2% of controls had hypothyroidism. The following table is given below in detail:

**Table-3: Distribution of thyroid function in study group**

| **Thyroid function** | **Case, %** | **Control, %** | **P value** |
|---|---|---|---|
| Euthyroid | 72 | 96 | 0.003 |
| Hypothyroidism | 22 | 2 | |
| Hyperthyroidism | 6 | 2 | |

## DISCUSSION

A poor quality of life is associated with abnormal uterine bleeding, resulting in bleeding and high blood losses such as tiredness and anemia [6]. In pathogenesis of abnormal uterine bleeding, endocrine disorders play a significant role [7].

Oligomenorrhea (23%) accompanied by menorrhagia (21%) followed by menstrual bleeding, were the commonest AUBs in our research (5 percent). These results consist of studies from a study in the USA that included oligomenorrhea and menorrhagia under the concept of uterine pathological bleeding [8]. The menorrhagia was the most prevalent form of AUB in another study [9].

Intermenstrual bleeding was strongly linked to AUB women in our sample (p = 0.02). Another research has found that the repeated occurrence of unexplained uterine bleeding is menstrual bleeding [10]. Our research found that the tradition of AUB contraception among women (p=0.001) was predominant.

In contrast with the monitors, this study showed a slightly higher thyroid stimulating hormone level in women with AUB (p=0.002). These findings agree with studies in Egypt that showed a significant

TSH distinction between AUB and control women [5]. Our research has also shown an important connection between low T4 levels of hormone and AUB women (p=0.04).The findings of a major US cohort trial, which showed that low T4 hormone levels have strong links to AUB, are in agreement with these results. Abnormal volume of thyroid hormones led to disruptions and irregular bleeding of the ovulatory hormones [11].

Our research has shown that 22% of women with AUB have hypothyroidism, and 6% have hyperthyroidism. These results are higher than the results of the earlier Iraqi analysis that showed hypothyroidism in 16, 1% of women with menstrual disorders and hyperthyroidism in 3,4% [12].

This disparity between two researches of thyroid dysfunction can be caused by geographical variation and by the high incidence of thyroid disorders in Kurdistan [13]. Our research on hypothyroidism is also 14 per cent higher than that of menstrually ill women in India [5]. Current research has shown that AUB and hypothyroidism are an important link for women (p=0.003).

## CONCLUSION

A significant cause of thyroid dysfunction is abnormal uterine bleeding in women of reproductive age. Thyroid hormones should be taken into account in the evaluation of patients with unexplained uterine bleeding.

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