Prevalence of thyroid disorders in women with abnormal uterine bleeding

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Abstract

Background: To evaluate thyroid dysfunctions in women suffering from abnormal uterine bleeding.

Materials & methods: Total of 100 diagnosed cases of Abnormal uterine bleeding were enrolled in the study. Approximately 4 ml venous blood sample was collected in a yellow capped plain vial, from antecubital vein under strict aseptic conditions following the universal precautions. Centrifugation was done at 3000rpm for 10 minutes and separated serum was stored at -20°C until analysis. Serum triiodothyronine (T3), Thyroxine (T4) and thyroid stimulating hormone (TSH) level were measured by chemiluminescence assay on autoanalyzer. Assessment of the results was done using SPSS software.

Results: Out of the total cases of abnormal uterine bleeding, 15 subjects had thyroid dysfunction. Rest 85% of total cases of AUB were euthyroid. Out of cases with thyroid dysfunction, hypothyroid was most common followed by subclinical hypothyroid and hyperthyroid.

Conclusion: Significant proportion of AUB patients are affected by thyroid dysfunction.

Key words: Thyroid Disorder, Abnormal uterine bleeding, Dysfunction

INTRODUCTION

Thyroid disease is a medical condition that affects the function of the thyroid gland. The thyroid gland is located at the front of the neck and produces thyroid hormones that travel through the blood to help regulate many other organs, meaning that it is an endocrine organ. These hormones normally act in the body to regulate energy use, infant development, and childhood development.[1]

There are five general types of thyroid disease, each with their own symptoms. A person may have one or several different types at the same time. The five groups are: Hypothyroidism (low function) caused by not having enough free thyroid hormones, Hyperthyroidism (high function) caused by having too many free thyroid hormones, Structural abnormalities, most commonly a goiter (enlargement of the thyroid gland), Tumors which can be benign (not cancerous) or cancerous, Abnormal thyroid function tests without any clinical symptoms (subclinical hypothyroidism or subclinical hyperthyroidism).

Abnormal uterine bleeding (AUB) is a broad term that describes irregularities in the menstrual cycle involving frequency, regularity, duration, and volume of flow outside of pregnancy.[2] Up to one-third of women will experience abnormal uterine bleeding in their life, with irregularities most commonly occurring at menarche and perimenopause. A normal menstrual cycle has a frequency of 24 to 38 days and lasts 2 to 7 days, with 5 to 80 milliliters of blood loss.[3] Variations in any of these 4 parameters constitute abnormal uterine bleeding. Older terms such as oligomenorrhea, menorrhagia, and dysfunctional uterine bleeding should be discarded in favor of using simple terms to describe the nature of abnormal uterine bleeding.[4] Revisions to the terminology were first published in 2007, followed by updates from the International Federation of Obstetrics and Gynecology (FIGO) in 2011 and 2018. The FIGO systems first define abnormal uterine bleeding, then give an acronym for common etiologies. These descriptions apply to chronic, nongestational AUB. In 2018, the committee added intermenstrual bleeding and defined irregular bleeding as outside the 75th percentile.[5-7]

Abnormal uterine bleeding can also be divided into acute versus chronic. Acute AUB is excessive bleeding that requires immediate intervention to prevent further blood loss.[6] Acute AUB can occur on its own or superimposed on chronic AUB, which refers to irregularities in menstrual bleeding for most of the previous 6 months.[9-12] Hence, this study was carried out to evaluate thyroid dysfunctions in women suffering from abnormal uterine bleeding.

MATERIAL AND METHODS

Total of 100 diagnosed cases of Abnormal uterine bleeding were enrolled in the study. A complete history of age, parity, menstrual history, onset and duration of menstrual problems, volume of blood flow and any other relevant complaints was taken. Approximately 4 ml venous blood sample was collected in a yellow capped plain vial, from antecubital vein under strict aseptic conditions following the universal precautions. Centrifugation was done at 3000rpm for 10 minutes and separated serum was stored at -20°C until analysis. Serum triiodothyronine (T3), Thyroxine (T4) and thyroid stimulating hormone (TSH) level were measured by chemiluminescence assay on autoanalyzer. Normal range for T3, T4 and TSH was respectively 2.5-4.16pg/ml, 0.89-1.76ng/dl and 0.34-5.12IU/ml. Assessment of the results was done using SPSS software.

RESULTS

Out of the total cases of abnormal uterine bleeding, 15 subjects had thyroid dysfunction. The mean age for patients suffering from abnormal uterine bleeding was found to be 33.4 years

and patients from the age group 24-34 years were more common 39 (39%) followed by age group 35-44 years 35 (35%). About 85 (85%) were euthyroid. 15% of total cases of AUB had thyroid dysfunction. Rest 85% of total cases of AUB were euthyroid. Out of cases with thyroid dysfunction, hypothyroid was most common followed by subclinical hypothyroid and hyperthyroid.

Table 1: Age wise distribution of occurrence of AUB.

Age group (years)	N	Percentage
15-24	14	14
25-34	39	39
35-44	35	35
>45	12	12
Total	100	100

Table 2: Thyroid status of study population.

Thyroid status	N (%)
Euthyroid	85 (85%)
Thyroid dysfunction present	15 (15%)
Total	100 (100%)

Table 3: Types of thyroid function

Type of thyroid dysfunction	Present	Absent
Hypothyroidism	7	46.67
Subclinical hypothyroidism	5	33.33
Hyperthyroid	3	20
Total	15	100

DISCUSSION

Abnormal uterine bleeding is one of the common findings among females of reproductive age. Among the wide spectrum of causes, from structural causes like polyps, leiomyoma etc. to non-structural causes, thyroid dysfunction is found as occult cause which may be readily missed out. Thyroid dysfunction, since being common in women8 and has been known to affect all events right from menarche to menopause, cannot be overlooked while treating any forms of menstrual disturbances.[13-15]

In the present study, 15% of total cases of AUB had thyroid dysfunction. Rest 85% of total cases of AUB were euthyroid. Out of cases with thyroid dysfunction, hypothyroid was most common followed by subclinical hypothyroid and hyperthyroid. Thakur M et al assessed the thyroid status of the patient with abnormal uterine bleeding. Out of 79 patients, it was found that 67 (84.8%) were euthyroid, 11 (13.9%) were hypothyroid, and 1 (1.2%) was hyperthyroidism. The most common type of abnormal uterine bleeding was menorrhagia 34 (43%), followed by polymenorrhoea 23 (29%), oligomenorrhoea 13 (16.5%), menometrorrhagia 6 (7.6%), metrorrhagia 2 (2.5%), and hypomenorrhea 1 (1.3%). The

maximum number of patients was between 20-25 years with the mean age of 31 years. Among hypothyroid, 7 (8.8%) had subclinical hypothyroidism and 4 (5%) had frank hypothyroidism. Most females with abnormal uterine bleeding were euthyroid.[16] In another study conducted by Sebtain A et al, authors assessed the incidence of subclinical hypothyroidism in women with perimenopausal AUB. Patients with a history of suspected inflammatory disease, use of oral contraceptives, and malignant lesions of the cervix were excluded from the study. All cases were evaluated for AUB and their thyroid profile was evaluated. A total of 500 women were enrolled with a mean age of 47.2 ± 7.3 years. Of these, 234 (46.8%) women were overweight and the mean levels of the thyroid-stimulating hormone were 4.4 ± 2.5 mIU/L. The mean triiodothyronine and thyroxine were 3.2 ± 1.9 and 1.5 ± 0.7 pmol/L, respectively. The rate of subclinical hypothyroidism was 33%. It was shown that the body mass index was significantly correlated with subclinical hypothyroidism (p=0.03). Furthermore, the rate of oligomenorrhea was significantly higher in patients with subclinical hypothyroidism (p=0.05). Their study highlighted the association between thyroid dysfunction in women with menstrual disorders.[17]

CONCLUSION

Significant proportion of AUB patients are affected by thyroid dysfunction.

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