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Original Research Article

Review of thyroid profile in patients with heavy menstrual bleeding in a tertiary care hospital

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ABSTRACT

Background: Heavy menstrual bleeding (HMB) is defined as excessive menstrual blood loss which interferes with a woman's physical, social, emotional and/or material quality of life. It can occur alone or in combination with other symptoms. Thyroid hormone affects menstrual pattern. The objective of this study was to evaluate thyroid function in women with menorrhagia (HMB).

Methods: It is a type of journal article. Study design- retrospective study. The present study was conducted in the Department of obstetrics and Gynecology, Cama and Albes Hospital, Mumbai, Maharashtra, India, from a period of January 2021 to July 2021, 51 women of reproductive age group between menarche-menopause with HMB. Quantitative determination of T3, T4 and TSH by CLIA estimated in autoanalyser.

Results: About 51 women participated in the study in which most of the subjects belong to 45-49 years of age group. Maximum patients are multipara. Commonest cause of menorrhagia is fibroid. Most females with menorrhagia are euthyroid. Most of patients with HMB are O +ve. In most of the patients, anaemia due to HMB is treated by blood transfusion.

Conclusions: Biochemical evaluation of thyroid function tests should be compulsory in all patients with menorrhagia to detect thyroid dysfunction. Most females with menorrhagia are euthyroid.

Keywords: Heavy menstrual bleeding, Menorrhagia, Thyroid function

INTRODUCTION

Heavy menstrual bleeding (HMB) is defined as excessive menstrual blood loss which interferes with a woman's physical, social, emotional and/or material quality of life. It can occur alone or in combination with other symptoms. It is a type of abnormal uterine bleeding (AUB).^{1,2}

Abnormal uterine bleeding can be caused by structural abnormalities in the reproductive tract, anovulation, bleeding disorders, hormone issues (such as hypothyroidism) or cancer of the reproductive tract. Initial evaluation aims at figuring out pregnancy status, menopausal status, and the source of bleeding. One

definition is bleeding lasting more than 7 days or the loss of more than 80 mL of blood heavy flow.^{3,4}

Initial treatment often involve birth control pills. Tranexamic acid, danazol, progesterone IUDs, and NSAIDs are also helpful.⁵ Surgery can be an effective for those whose symptoms are not well-controlled with other treatments.⁶

HMB is one of the most common reasons for gynaecological consultations in both primary and secondary care. About 1 in 20 women aged between 30 and 49 years consult their GP each year because of heavy periods or menstrual problems, and menstrual disorders comprise 12% of all referrals to gynaecology services.

The focus of this guideline is on women of reproductive age (after puberty and before the menopause) with HMB, including women with suspected or confirmed fibroids, and women with suspected or confirmed adenomyosis. The guideline does not primarily cover women with gynaecological bleeding other than HMB (for example, intermenstrual bleeding or postcoital bleeding) or with gynaecological conditions in which HMB is not the main symptom (such as endometriosis). Outpatient management comprising insertion of a levonorgestrel-releasing intrauterine system (LNG-IUS) has increased in popularity in recent years, and there has been a reduction in surgical procedures.

Thyroid disorders have profound effect on female reproductive system in terms of delayed puberty, AUB, infertility, RPL, premature menopause. Thyroid disorders are 10 times more common in females than males.⁷⁻⁹

The underlying cause of AUB is uncertain but most common associated basic pathology is ovarian dysfunction and consequent hormonal imbalance. Ovarian dysfunction may be primary (pathological lesion of ovary) or secondary to endocrine dysfunction example- Hypothalamus, pituitary and thyroid.

Majority of cases of subclinical hypothyroidism patients are asymptomatic.^{10,11} Serum TSH assay is a sensitive indicator of hypothyroidism because TSH levels elevates before circulating thyroxin level fall below normal range. Thyroid gland is one of the most vital endocrine organs which plays a major role in growth, development, metabolism and function of every organ in the body. Both Hypo and Hyperthyroidism can result in menstrual irregularities.

The mechanism by which the thyroid disorders is associated with AUB may be explained by altering thyroid stimulating hormone (TSH) response, increasing prolactin levels, altering luteinizing hormone (LH) response, affecting peripheral conversion of androgens to estrogens, altering sex hormone binding globulin (SHBG) and affecting coagulation pathways in addition to effect on lipid profile.¹²

The objective of this study was to estimate the prevalence of thyroid dysfunctions in women with HMB from puberty to menopause; and to evaluate thyroid function test in women with HMB; and to assess the menstrual pattern in women with thyroid dysfunction.

METHODS

The present study is a type of research article was conducted in the department of obstetrics and gynaecology, Cama hospital, Mumbai from January 2021 to July 2021, 51 women of reproductive age, menarche to menopause with heavy menstrual bleeding were selected.

Selection criteria

Women of reproductive age group with heavy menstrual bleeding, non-pregnant.

Study design

The study design was retrospective.

Procedure

After taking detailed history regarding age, parity, marital status, menstrual complaints such as heavy menstrual bleeding, general Physical examination along with pelvic examination was carried out. Complete blood count, T3, T4 and TSH, FBS, PPBS, blood group.

Special investigations were done in necessary cases such as transvaginal scan, endometrial sampling and hysteroscopy.

Statistical analysis

Statistical analysis is done by Statistical package for social sciences (SPSS) software and Difference with a p value of <0.05 was considered statistically significant.

RESULTS

There were 51 women included in the study.

Table 1: Distribution of patients according to age intervals.

Age (years)	No. of patients	Percentage
Menarche-19	4	7.8
20-24	3	5.88
25-29	2	3.92
30-34	1	1.96
35-39	6	11.76
40-44	9	17.64
45-49	20	39.2
≥50- menopause	6	11.76

Table 2: Distribution of patients according to marital status.

Marital status	No. of patients	Percentage
Married	44	86.24
Unmarried	7	13.72

Most of the subjects belong to 45-49 years followed by 40-44 years showing 40-49 years age group are most effected group in this study (Table 1). Among 51 cases of HMB, most of the subjects are married (86.27 %) and 13.72 % are unmarried (Table 2). Most of the patients are multipara -35 patients (68.62%) followed by nullipara -9 patients (17.64 %) and primipara -7 patients (13.72%) (table 3).

Most of the subjects of HMB are O +ve (27.45 %) followed by B+ve (25.49) (Table 4).

Table 4: Distribution of patients according to parity.

Parity	No. of patients	Percentage
Nullipara	9	17.64
Primipara	7	13.72
Multipara	35	68.60

Table 5: Distribution of patients according to blood group.

Blood group	No. of patients	Percentage
A+	8	15.68
A-	2	3.92
B+	13	25.48
O+	8	15.68
O-	2	3.92
AB+	14	27.44
AB-	1	1.96

Table 5: Distribution of patients according to thyroid function.

Thyroid status	No. of patients	Percentage
Euthyroid	36	70.5
Subclinical hypothyroidism	10	19.6
Profound Hypothyroidism	3	5.88
Hyperthyroidism	2	3.92

Table 6: Distribution of patients according to causes of HMB (USG based).

Causes of hmb	No. of patients	Percentage
Fibroid	20	39.20
Adenomyosis	7	13.72
Carcinoma	1	1.96
Thickened Endometrium	9	17.64
Polyp	5	9.8
Ovarian cyst	1	1.96
Normal usg	8	15.68

In the present study, 70.5% of women are euthyroid, 5.88 % of women were profound hypothyroid, 19.6 % had subclinical hypothyroidism and 3.92% of women had hyperthyroidism (Table 5).

Table 7: Modalities to treat anaemia due to HMB.

Modality	No. of patients	Percentage
Blood transfusion	22	78.57
Inj FCM	4	14.28
Inj iron sucrose	2	7.14

Table 8: Different methods for treating HMB.

Methods	No. of patients	Percentage
Mirena	2	4.8
Polypectomy	3	7.31
CT,RT	2	4.8
OCP	7	17.07
Progesterone support	4	9.75
Inj Leuprolide(Gnrh analogue)	3	7.31
Hysteroscopic D and C	3	7.31
D And C	8	19.2
LAVH	1	2.4
TAH	8	19.2

Most common cause of HMB in this study is fibroid (39.21%) (Table 6). In this study, 27.45% are having diabetes mellitus, 13.72% have hypertension (Table 7). About 43.13% of subjects are transfused by blood, 8% by inj FCM, 4% by inj iron sucrose to treat anaemia due to HMB (Table 8).

DISCUSSION

Heavy menstrual bleeding is accompanied by low quality of life attributed to treatment efforts of bleeding and outcomes of high blood loss like fatigability and anemia.¹⁴ The endocrine disturbances play a major role in pathogenesis of heavy menstrual bleeding.¹⁴ It needs repeated curettage and hysterectomy associated with its mortality and morbidity. In many of the cases, the cause is usually not apparent. Sometimes heavy menstrual bleeding may be only presenting complain in hypothyroid women.

Gowri et al, showed prevalence of hypothyroidism in women in the reproductive age (20-40 years) varies between 2-4%. In the general population, the prevalence of subclinical hyperthyroidism is around 1.5%.¹⁵

In the present study, 70.5% of women are euthyroid, 5.88 % of women were profound hypothyroid, 19.6% had subclinical hypothyroidism and 3.92% of women had hyperthyroidism.

Joshi et al, found 68% of menstrual abnormalities in 22 women with hypothyroidism compared to only 12% in 49 controls.¹⁶

In the study by Krassas et al, the prevalence of menstrual irregularities (mainly oligomenorrhoea) reached 23% among 171 hypothyroid patients, while being only 8% in 214 controls (p<0.05).¹⁷

Timely detection of thyroid dysfunction in women presenting with AUB and its proper management can prevent unnecessary surgical interventions and helps to reduce financial burden and improves quality of life. Hence this study is undertaken to evaluate the thyroid dysfunction in women with heavy menstrual bleeding.

The mechanism by which the hypothyroidism can affect the menstrual cycle is not fully understood. However, some authors attributed this relationship to irregular or no ovulation that decreases the luteinizing hormone and elevating the estrogen leading to menstrual bleeding.

Limitations

Detailed menstrual history should be collected. Medical causes of heavy menstrual bleeding should be ruled out. All basic lab investigation to be done to come for diagnosis.

CONCLUSION

As there is high incidence of thyroid diseases in women with abnormal uterine bleeding are to be screened. This would also avoid unnecessary hormonal treatment and surgery in these patients. It concludes that thyroid disorder should be considered as an important aetiological factor for menstrual abnormality. Thus, biochemical evaluation T3, T4 and TSH estimations should be made mandatory in AUB cases to detect profound and subclinical thyroid dysfunction. We found most of the women with heavy menstrual bleeding were euthyroid. In our study among hypothyroid patients most common complaint of abnormal uterine bleeding was heavy menstrual bleeding.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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