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CORRELATION BETWEEN ABNORMAL THYROID PROFILE AND PATTERN OF MENSTRUAL DISORDER IN PERIMENOPAUSAL WOMEN.

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ABSTRACT Abnormal uterine bleeding is a common gynecological problem in perimeopausal period. **Objective:** To find correlation between thyroid dysfunction and patterns of AUB in perimenopausal women. **Material & Methods:** Present study was conducted at Kamineni Institute of Medical Sciences, Narketpally. Total 116 AUB patients were evaluated including thyroid profile. **Results & Discussion:** Among 116 women, 41 had hypothyroidism, 9 had hyperthyroidism and rest 66 were euthyroid. In hypothyroidism (65.85%) had menorrhagia due to anvoulation and unopposed oestrogen activity. Whereas, in hyperthyroidism oligomenorrhea and hypomenorrhoea was seen. There was a significant correlation of thyroid dysfunction with abnormal uterine bleeding ($p < 0.05$). **Conclusion:** The menstrual irregularities are significantly more in patients with thyroid dysfunction and menorrhagia was the commonest presentation. Therefore, evaluation of thyroid function should be made mandatory in all cases of AUB.

KEYWORDS : Abnormal uterine bleeding (AUB), Perimeopausal, Thyroid dysfunction.

1. INTRODUCTION

Abnormal uterine bleeding is frequently encountered conditions in gynaecology. Perimenopause is defined by WHO as " period in time beginning 2-8 years before final menstrual period (FMP) and lasting up to 12 months after the FMP"[1]. The Perimenopausal abnormal uterine bleeding (AUB) is defined as uterine blood flow that is erratic [2,3]. It is characterized by irregularities in menstrual cycle in volume and frequency due to fluctuating estrogen levels & anovulation [4].

The menstrual pattern is influenced by thyroid hormones directly through impact on the ovaries and indirectly through impact on sex hormone-binding globulin (SHBG), prolactin, GnRH secretion and coagulation factors [4].

It affects quality of life, imposing financial burden and ultimately have a significant impact on the health care system [5]. Hence, present study was undertaken to find to find correlation between thyroid dysfunction and patterns of AUB in perimenopausal women.

2. MATERIAL & METHODS

Present prospective study was conducted in Kamineni Institute of Medical Sciences, Narketpally, Nalgonda Dist,Telangana from October 2019 to Nov 2021 after obtaining clearance from the institutional ethics committee. Total 116 perimenopausal women who presented with abnormal uterine bleeding were included.

The sample size was calculated as 116 by using formula,

$n = Z^2 \times p \times q / e^2$

by keeping prevalence of 43.52% , margin of error of 9%, and confidence level of 95%.

INCLUSION CRITERIA:

Women with AUB between 40-55 years.

EXCLUSION CRITERIA:

Refusal for participation in study

Patients known to have cervical or uterine malignancy, fibromyoma, polyp, coagulation disorders, or on medications like steroids, anticoagulants, cytotoxic drugs and on hormone replacement therapy.

All patients were informed about study and written consent was taken. A detailed gynaecology history was obtained regarding age, bleeding pattern, onset, duration, quantity of bleeding and complaints related to thyroid dysfunction were noted. A thorough clinical examination including general physical examination, neck examination, systemic and gynecologic examinations were done. All patients were subjected to routine investigations like complete blood count, complete urine examination, bleeding time, clotting time, renal function test, thyroid function test, ultrasound abdomen and pelvis, pap smear. Serum TSH is more sensitive indicator of diminished thyroid function reserve since it become elevated before circulating thyroxine levels fall below the normal range [6]. Patients with TSH <0.5 µIU/Ml were hyperthyroid and TSH >5.5 µIU/Ml were considered as hypothyroid.

STATISTICAL ANALYSIS:

was done using SPSS (statistical package of social science) 20.0 version. The data was compared using chi square test and independent t-test, p-value <0.05 was considered statistically significant.

3. RESULTS

The mean age of patients was 48.2 ± 4.3 years. The majority 49 (42.8%) of women were overweight. The mean BMI was 28.8 ± 4.8. The mean levels of the TSH were 4.4 ± 2.5 µIU/L while the levels for triiodothyronine and thyroxine were 1.5 ± 0.9 ng/mL and 4.2 ± 1.9 µg/dL.

Table 1: Distribution of patients according to Thyroid status

S. no	Thyroid status	Number of patients (n=116)	Percentage (%)
1	Euthyroid	66	56.9
2	Hypothyroid	41	35.34
3	Hyperthyroid	9	7.76

Table 2: Correlation of Pattern of Abnormal uterine bleeding in Thyroid dysfunction.

AUB Pattern	Euthyroid	Hypothyroid	Hyperthyroid	Total
	n(%)	n(%)	n(%)	(n=116)
Menorrhagia	27(41.25)	27(65.85)	0 (0)	54
Polymenorrhea	11(16.24)	7(17.1)	0(0)	18
Acyclic Bleeding	14(21.3)	4(9.75)	1(11.11)	19
Oligomenorrhoea	5(7.8)	2(4.87)	4(44.44)	11
Hypomenorrhoea	6(9.3)	0(0)	4(44.44)	10
Metrorrhagia	3(4.1)	1(2.43)	0(0)	4
Total patients	66(56.9)	41(35.34)	9(7.76%)	116

(Chi square test, $p < 0.05$).

Overall, Menorrhagia (46.55%) was most common presentation. Of 41 hypothyroid patients, 27 had menorrhagia which was significant. (Table2)

4. DISCUSSION

Thyroid hormone play an important role in regulation of menstrual function. Thyroid disorders is associated with menstrual irregularities ranging from menorrhagia to oligomenorrhea.

In present study, 56.9 % were euthyroid , 35.34% were hypothyroid and 7.76% patients were hyperthyroidism. Which was similar to study done by Sree VS et al [4], Singh P et al [6], Thakur et al [7], Kolli SN et al [8], Komathi R et al [9], Ajmani NS et al [10] and N Bhavani et al [11]. Of 41 hypothyroid patients, 27(65.85%) had menorrhagia, which was similar to study done by [4,6,7,8,9,10,11]. The cause of menorrhagia in hypothyroidism is multifactorial and explanations are TRH induced hyperprolactinemia alter the GnRH pulsatile secretion leading to defective or delay in LH response leading to luteal phase defect and anovulation. Hypothyroidism also lowers the synthesis of sex hormone-binding globulin (SHBG) [12] and affects the peripheral consumption of estrogen, which causes endometrial hyperplasia which may outgrow the blood supply and may cause local areas of necrosis that breaks down and produces bleeding. Apart from effect on ovulation, it also interrupts the production of coagulation factors i.e., decrease in factors VII, VIII, IX, XI.[6]

Hyperthyroid patients presents with hypo/oligomenorrhea which was similar to study done by [4,6,7,8,9,10,11]. In cases of hyperthyroidism, production of SHBG increases. The synthesis of estrogens from androgens in the periphery is augmented, and estrogen metabolism is disrupted [12]. Elevated baseline Gonadotropin concentrations and increased Gonadotropin response to GnRH, Affects the haemostatic factors, including the synthesis of factor VII, results in decrease in menstrual flow. Despite of all these metabolic alterations, usually there is maintenance of ovulation in Hyperthyroid women [3,8].

5. CONCLUSION

It was concluded that there is a significant correlation of thyroid dysfunction with abnormal uterine bleeding. Therefore, thyroid function tests, should be done in all patient for appropriate treatment with good outcome. Supplementation of thyroxin in hypothyroidism and anti-thyroid drugs in hyperthyroidism can avoid unnecessary surgical intervention, thereby reducing patient morbidity and in turn their financial burden.

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