



A PROSPECTIVE OBSERVATIONAL STUDY OF THYROID DYSFUNCTION IN WOMEN WITH ABNORMAL UTERINE BLEEDING HAVING CLINICALLY EUTHYROID STATUS

Obstetrics & Gynaecology

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ABSTRACT

It is recognized universally that menstrual disturbances may accompany and even may precede thyroid dysfunction. Treating thyroid dysfunction can reverse menstrual abnormalities and thus improve fertility. A close interplay between thyroid hormones and normal steroid action and secretion exists, necessary for normal ovarian function and thus fertility. In the present study thyroid status of patients presenting with abnormal uterine bleeding was assessed by TSH, FT3, and FT4 assay.

MATERIALS AND METHODS : Hospital based study at R G KAR MCH, among the patients attending gynaecology OPD. Various exclusion and inclusion criteria were used. Analysis was based on intention to treat. Statistical significance in the final calculations was defined as $P < 0.05$.

RESULTS : A total of 260 patients with AUB were included in the present study. In our study 19% women with AUB had thyroid abnormalities. 17.6% were with hypothyroidism, 1.4% with overt hyperthyroidism and 81% were euthyroid.

CONCLUSION : Thyroid dysfunction should be considered as an important etiological factor for menstrual abnormality. Biochemical estimation of T3, T4, TSH should be made mandatory in Abnormal uterine bleeding especially in non-structural causes and also in those presenting with fatigue, obesity, lethargy in addition to infertility, delayed puberty and recurrent abortions.

KEYWORDS

INTRODUCTION

A relationship between the thyroid gland and the female gonads is suggested by the far more frequent occurrence of thyroid disorders in women than in men and by the common appearance of goitre during puberty, pregnancy and the menopause¹. While activity of the thyroid is closely linked with the process of ovarian maturation, the thyroid gland is itself dependent on direct and indirect stimuli from the ovary to discharge its own function².

Hypothyroidism causes menorrhagia and hyperthyroidism in contrast is associated with oligomenorrhoea and the decrease in flow is proportional to the severity of the thyrotoxicosis³.

Subclinical hypothyroidism has recently been challenged as data have indicated that physiological free T₄ (FT₄) variations are narrower in one individual than those observed within the reference range of a population. These data might reflect an abnormally low FT₄ value for patients who present a mildly increased serum TSH^{4,5}. Some authors have proposed restricting the upper normality limit of serum TSH to 2.5 mIU/l. Today, however, there is no agreement among endocrinologists about the most appropriate (i.e. physiologically relevant) upper limit of normality for serum TSH⁶.

Recently "occult" menorrhagia has been found to be an early manifestation of sub clinical hypothyroidism with disease becoming symptomatic later⁷. Treating thyroid dysfunction can reverse menstrual abnormalities and thus improve fertility. In the present study thyroid status of patients presenting with abnormal uterine bleeding was assessed by TSH, FT3, and FT4 assay.

MATERIALS AND METHODS

- Study setting : R G KAR MEDICAL COLLEGE & HOSPITAL among the patients attending gynaecology OPD in department of obstetrics & gynaecology.
- **Place of study:** Department of Obstetrics & Gynaecology, RGMCH
- **Period of study:** 18 months (JANUARY 2018- JUNE 2019)
- **Study population:** Patients attending gynaecology OPD of OBSTETRICS & GYNAECOLOGY, RGMCH with abnormal uterine bleeding.
- **Inclusion criteria:** Patients presenting with complaints of abnormal uterine bleeding in the age group of 15 to 45 years.
- **Exclusion criteria**
- 1) patients with goitre, carcinoma thyroid, with known thyroid dysfunction.
- 2) patients with BMI ≥ 30 .

- 3) patients on drugs (likely to alter menstrual pattern), hormones, IUCD users.
- 4) patients with history of bleeding disorders.
- 5) diagnosed cases of genital malignancies and any tumour likely to alter the menstrual pattern (like pituitary adenoma, granulosa cell tumour of ovary).

Data was analysed by SPSS Version 15.0. Statistical significance was defined as $P < 0.05$.

RESULTS

Among 260 women recruited majority belong to the age group more than equals to 41 years (38.4%) followed by 31-40 years (33.69%) and 12.3% were in the age group < 20 yrs.

It was observed that most of them belong to the category of 2nd (23%) and 3rd para (20.3%) and 38 patients (14.6%) were unmarried. 51 patients were nulliparous (married) and 10.3% of patients belonged to 4th para.

TABLE 1 : THYROID DYSFUNCTION IN AUB PATIENTS

THYROID STATUS	CASES	%
EUTHYROID	210	81
OVERT HYPOTHYROIDISM	20	7.6
SUBCLINICAL HYPOTHYROIDISM	26	10
HYPERTHYROIDISM	4	1.4

This table shows that maximum number of apparently normal patients with abnormal uterine bleeding belong to category of sub clinical hypothyroid (10%). Overt hypothyroidism with symptoms were present in only 7.6% of cases. 1.4% of cases had hyperthyroidism though they were clinically normal.

CHART 1

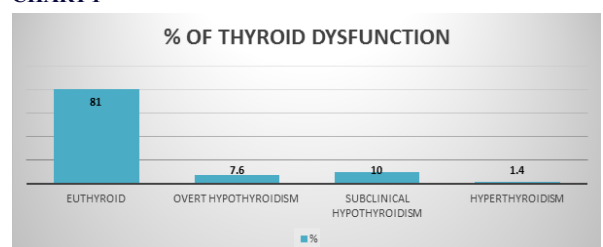


TABLE 2

PATTERN OF BLEEDING	CASES	%
MENORRHAGIA	140	54
ACYCLICAL	70	26.80
HYPOMENORRHOEA	11	4.2
OLIGOMENORRHOEA	08	3.07
POLYMERORRHOEA	09	3.40
POLYMERORRHAGIA	22	8.46
TOTAL	260	100

Above table depicts commonest pattern of bleeding was menorrhagia (54%) followed by metropathica haemorrhagica (26.80%). Among others 8.46% of them presented with polymenorrhagia, 3% with oligomenorrhoea, 4.2 % with hypomenorrhoea and 8.4% with polymenorrhoea.

TABLE 3

PATTERN OF BLEEDING	NO. OF CASES	EUTHYROID	OVERT (DETECTED) HYPOTHYROIDISM	SUB – CLINICAL HYPOTHYROIDISM	HYPER-THYROIDISM	TOTAL THYROID DYSFUNCTION
MENORRHAGIA	140	110	16	13	0	21.42%
ACYCLICAL	70	62	2	6	0	23.08%
HYPOMENORRHOEA	11	9	0	1	1	18.18%
POLYMERORRHOEA	8	3	2	2	1	62.5%
OLIGOMENORRHOEA	9	6	0	1	2	33.33%
POLYMERORRHAGIA	22	20	0	2	0	9.09%

This table revealed that thyroid dysfunction is related to menorrhagia, polymenorrhoea & various types of bleeding abnormalities. Thyroid dysfunction was least common in patients with polymenorrhagia. Patients with polymenorrhoea had maximum (62.5%) thyroid dysfunction.

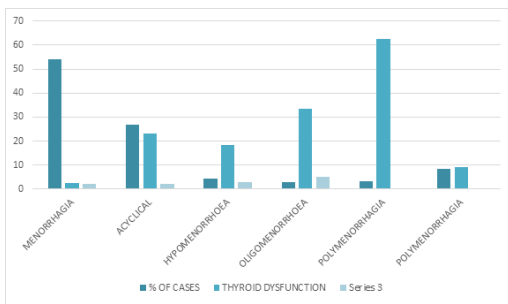


CHART 3: COMPARISON TABLE BETWEEN THE TWO MAJOR TYPES OF THYROID DYSFUNCTION AND PATTERN OF BLEEDING

The chi-square statistic, p-value and statement of significance have been calculated for this table. Chi-square statistics have been calculated with the popular Yates correction. There's possibly a consensus now that the correction is over-cautious in its desire to avoid type 1 error, but the statistic is there.

Pattern Of Bleeding	Hypothyroidism (overt+occult)	Hyperthyroidism	Marginal Row Totals
Heavy Menstrual Bleeding	18(15.83) (0.3)	1(3.17) (1.48)	19
Reduced blood flow	2(4.17) (1.13)	3(0.83) (5.63)	5
Marginal Column Table	20	4	24 (grand Table)

Heavy menstrual bleeding includes menorrhagia, polymenorrhoea and polymenorrhagia. Reduced blood flow includes both hypomenorrhoea and oligomenorrhoea.

The Chi-square statistic is 8.5389. The p-value is 0.003476.

This result is significant at $p < 0.5$ The Chi-square with Yates correction is 5.0526.

The p-value is .024589. (Significant at $p < 0.05$.)

Thus, it holds true that **Hypothyroidism is most commonly associated with Heavy menstrual bleeding and Hyperthyroidism is most commonly associated with reduced blood flow patterns.**

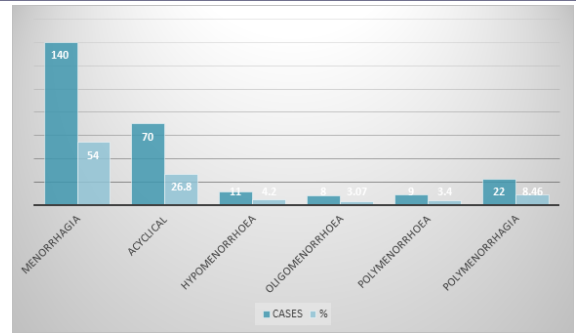


CHART 2

DISCUSSION

Thyroid abnormalities are common in women with menstrual irregularities and even precede the onset of overt and subclinical thyroid abnormalities that is both hypo and hyperthyroidism. Menstrual irregularities range from oligomenorrhoea to menorrhagia.

A total of 260 patients with AUB (as per inclusion and exclusion criteria) were included in the present study. Our study included patients in the age group less than 20 years till up to age group of more than equal to 41 years. Patients attending GOPD had to undergo weight and height assessment in order to exclude obese patients from our study, as obesity per se has been found to be a confounding factor associated with abnormal uterine bleeding.

A study conducted by Sahai Sharma et al⁷ had the result that there is a definite correlation between high BMI and abnormal uterine bleeding. Therefore, there is a need to emphasize on weight reduction as a preventive measure for AUB and as a part of conservative treatment.

In our study, 75.3% of menstrual abnormalities were noted in the women between the ages of 31-45 years which is corresponding to Bhavani et al⁸ (77% between the age group 31-50 years).

In our study, majority of the patients with AUB were in the group of parity 2 and above. Nulliparous constituted for about 34.2% and multigravida together accounted for 50.6%. Similar results were found in a study conducted by Verma SK et al⁹, where maximum patients with AUB were in the para 2-5. Study conducted by Swarupa Rani et al¹⁰, nulliparous group however consisted of minority 10%. Majority again fell in the range of para 2 and more i.e. 84%.

Thus we can conclude that patients tend to develop abnormal uterine bleeding mostly with an increase in parity owing to different causes of AUB.

In our study 19% women with AUB had thyroid abnormalities. 17.6% were with hypothyroidism, 1.4% with overt hyperthyroidism and 81% were euthyroid which is correlating with studies done by Bhavani et al⁸, 81% euthyroid; 19% had thyroid dysfunction of which subclinical hypothyroidism was more common than overt thyroidism. Similar results were found in another study conducted by Sangeeta Pahwa et al¹², 22% had hypothyroidism and 2% hyperthyroidism. In another study conducted by Kavitha Marimuthu et al¹¹ hypothyroidism comprised about 15.6%, subclinical hypothyroidism in 3.2%, subclinical hyperthyroidism 1.2% and overt hyperthyroidism around 7.2%. Sangeeta Pahwa et al observed in their study that 22% of cases were hypothyroid, 2% hyperthyroid and 76% euthyroid.

CONCLUSION

Thyroid dysfunction should be considered as an important etiological factor for menstrual abnormality. Biochemical estimation of FT₃, FT₄, and TSH should be made mandatory in abnormal uterine bleeding.

cases especially in non-structural causes and also in those presenting with fatigue, obesity, lethargy in addition to infertility delayed puberty and recurrent abortions. The menstrual irregularities most often seen in patients with dysfunctional uterine bleeding are menorrhagia, polymenorrhoea and polymenorrhagia in patients with hypothyroidism. In hyperthyroidism irregularity most commonly seen is hypomenorrhoea and oligomenorrhoea.

Thyroid dysfunction should be considered in the evaluation of dysfunctional uterine bleeding especially in women of age greater than or equal to 30 yrs. Thyroid disorder is the most common and treatable cause of DUB. As there is high incidence of thyroid dysfunction in our area, evaluation of thyroid in abnormal uterine bleeding can avoid unnecessary surgeries and exposure to hormones.

Conflicts of interest: The authors declare no conflict of interest

Disclosures and funding: None

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