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Role Of Thyroid Dysfunction In Patients With Menstrual Disorders

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Abstract: ***OBJECTIVE-*** *To study the prevalence of thyroid disorders and its correlation with menstrual disorders* ***METHOD-****This cross-sectional study was done on 100 women attending gynae OPD in Nalanda medical college, Patna, Bihar in the time period of one year between March 2018 to March 2019. 100 women aged between 15 and 45 yrs were selected and divided into two groups, Study and Control. The study group consisted of 50 patients with menstrual disorders, while control group consisted of other 50 patients without menstrual disorders. Thyroid profile, anti-TPO antibody estimation, Transvaginal sonography and endometrial sampling were done in all patients.*
RESULTS-*In patients with menstrual disorders, 40% had thyroid dysfunction, with 20% having subclinical hypothyroidism, 14% with overt hypothyroidism and 6% with hyperthyroidism. Anti-TPO antibodies were present in 28% of patients with menstrual disorders. On endometrial sampling, most of patients with hypothyroidism had proliferative endometrium (45%), whereas patients with hyperthyroidism had atrophic endometrium (55%).*
CONCLUSION-*Thyroid dysfunction is an important cause of menstrual disorders. Thyroid function test should be done in all patients with menstrual disorders to avoid unnecessary interventions like D&C and hysterectomy.*
Keywords- *Menstrual disorders, Thyroid dysfunction, Subclinical hypothyroidism, Thyroid autoimmunity.*

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I. Introduction

Thyroid gland is a small butterfly shaped gland found at base of neck anteriorly. Thyroid gland produces thyroid hormone which controls body's metabolism. Both hyper and hypothyroidism may result in menstrual disturbances. In hyperthyroidism, amenorrhea was described as early as 1840 by Von Basedow. The most common manifestation is simple oligomenorrhea in hyperthyroidism [1,2]. Anovulatory cycles are very common. Increased bleeding may occur, but rare in hyperthyroidism. Nowadays, hyperthyroidism is diagnosed earlier than it once was and so the clinical picture is generally milder. In hypothyroidism on the contrary, polymenorrheais more common [3]. Fertility is reduced in both hyper and hypothyroidism and the outcome of pregnancy is more often abnormal than in euthyroid [4,5]. Nevertheless, even in several recent studies of women with menstrual disorders or infertility, a substantial proportion have been shown to have various endocrine disturbances, especially hypothyroidism but also hyperthyroidism, increased androgen production, hyperprolactinemia and other disorders [6,7]. The high prevalence of the endocrinal disorders in fertility and menstrual abnormalities are probably due to the sensitivity of modern diagnostic tests. Now subclinical hyper and hypothyroidism can be diagnosed easily. Thyroid function should be checked in every case of unexplained menstrual disorders or fertility problems.Thyroid autoimmunity has been shown to have associated with various kind of thyroid dysfunction [8,9]. Timely detection of thyroid disorder in patients presenting with menstrual disorders and their management can prevent surgical interventions, minor procedure like curettage and major like hysterectomy.

Objective

To study the prevalence and correlation of thyroid dysfunction and thyroid autoimmunity in patients with menstrual disorders

Methods

This study was done in department of obstetrics and gynaecology, Nalanda medical college and hospital, Patna in the period of 12 months between March2018 to March2019. 100 women aged 15 to 45yrs attending gynae OPD were selected and divided into Study and Control group. Study group comprised of 50

women with menstrual disorders like menorrhagia, polymenorrhea, oligomenorrhea, hypomenorrhea, metrorrhagia and amenorrhea. Control group comprised of 50 women with complaints other than menstrual disorders. Patients with known organic pathology like uterine fibroids, adenomyosis, tubercular endometriosis, IUCD in utero, uterine malignancy etc. were excluded from study.

Detailed history, general physical along with pelvic examination was carried out in all patients. Routine investigations like complete blood count, ESR, ABO/Rh and thyroid profile including T3, T4 and S.TSH and anti-TPO antibody was performed in all patients. Direct quantitative determination of T3, T4 and S.TSH by ELISA using human serum based calibration was performed. Transvaginal ultrasound and endometrial sampling were also performed on all patients. Patients were considered as

1. Euthyroid – S.TSH, T3, T4 within normal range (TSH level- 0.39-6.16µIU/mL, Free T3 level- 1.4-4.2pg/ml, Free T4- 0.8-2ng/ml)
2. Subclinical hypothyroidism – S.TSH high with normal T3 and T4
3. Overt hypothyroidism- high S.TSH with low T3 and T4
4. Subclinical hyperthyroidism- low S.TSH with normal T3 and T4
5. Overt hyperthyroidism- low S.TSH with high T3 and T4

Difference with a p value<0.05 was considered statistically significant.

II. Results

In study group, most of patients presented with menorrhagia (50%), 16% had hypo/oligomenorrhea, 20% had polymenorrhea, 10% had metrorrhagia and 4% had amenorrhea [table 1].

Table 1. Presenting complaint in study group

Presenting complaints	Number	Percentage(%)
Menorrhagia	25	50
Hypo/oligomenorrhea	08	16
Polymenorrhea	10	20
Metrorrhagia	05	10
Amenorrhea	02	04
Total	50	100

In study group, 60%(n=30) of patients were euthyroid. Rest 40%(n=20) were having thyroid dysfunction. In control group, 80%(n=40) patients were euthyroid, while 20%(n=10) were having thyroid dysfunction.

In study group, 34% of the patients were having hypothyroidism (20% were subclinical and 14% were overt), while in control group, 18% had hypothyroidism (12% subclinical and 6% overt hypothyroidism).

In study group, 6% were hyperthyroidism (4% subclinical and 1%overt hyperthyroidism) while in control group, 2% presented with hypothyroidism. The difference was statistically significant with p value = 0.03(table 2).

Table 2. Distribution of patients in study and control group regarding thyroid status.

Thyroid status	Study group		Control group	
	number	Percentage (%)	number	Percentage (%)
Euthyroid	30	60	40	80
Subclinical hypothyroidism	10	20	6	12
Overt hypothyroidism	7	14	3	6
Subclinical hyperthyroidism	2	4	0	0
Overt hyperthyroidism	1	2	1	2

Anti TPO antibodies were present in 28%(n=14) of patients in study group compared to 6%(n=3) of patients in control. Calculated p value was 0.005, statistically significant (table 3).

Table 3. Distribution of patients with respect to anti TPO antibody

Anti-TPO Ab	Study group		Control group	
	Number	Percentage (%)	Number	Percentage(%)
Present	14	28	3	6
Absent	36	72	47	94
Total	50	100	50	100

Among the patients with hypothyroidism, 45% had proliferative endometrium, 26.98% had secretory endometrium, 20.32% had hyperplastic and 7.5% had atrophic endometrium.

Among patients of hyperthyroidism, 55% had atrophic endometrium while, 20% had secretory and 25% had proliferative endometrium. Calculated p value=0.02, statistically significant (table 4).

Table 4. Correlation of histopathological finding with S.TSH level

TSH level	Histopathological finding			
	Proliferative	Secretory	Hypertrophic	Atrophic
High	45%	26.98%	20.32%	7.5%
Low	25%	20%	0	55%

III. Discussion

Thyroid disorders in general and hypothyroidism in particular are common cause of menstrual disorders in women. Menarche, pubertal development, menstrual cycle, fertility, fetal development, postpartum period and postmenopausal phase are influenced by the thyroid status of women. Menorrhagia was the most common complaint among patients with menstrual disorders. This was similar tothe study done by Andrew Dweek. In his study, out of 28 patients with menstrual irregularity, 18 had menorrhagia and out of these 18 patients, 15 had hypothyroidism [10]. Thyroid dysfunction is the systemic disease most often associated with abnormal uterine bleeding [11]. Prevalence of menstrual irregularities in patients with untreated hypothyroidism was reported by Krass as to be 23.4% [12].

In astudy by Doufas, 68.2% of hypothyroidism women had menstrual abnormalities, compared to 12.2% of control [13], similar to this study.

Indeed, patients with severe hypothyroidism have a higher prevalence (34.8%) of menstrual disturbances than mild moderate cases (10.2%) as reported in study from Japan by Kakuno[14].

Hypothyroidism can result in menorrhagia, oligomenorrhea, metrorrhagia, polymenorrhea, amenorrhea [15]. In this study, the prevalence of anti-thyroid peroxidase antibodies in patients with menstrual disorders is almost four times higher than in control. This emphasizes the significance of estimation of thyroid antibodies in patients with menstrual disorder.

In this study, the most common complaint was hypo/oligomenorrhea followed by amenorrhea in patients with hyperthyroidism. Also, proliferative endometrium followed by secretory endometrium in endometrial sampling was found in hypothyroid patients. Similar toan Indian study by Kaur [16], who found 36.36% proliferative, 36.36% secretory and 27.27% atrophic endometrium in hypothyroid patients. In study by Padmalella, the most common finding in endometrial biopsy was proliferative (59.1%) both in hypothyroid and hyperthyroid. Cystic glandular hyperplasia was found only in 13.3% and secretory endometrium in 26.7% of hypothyroid patients[17].

IV. Conclusion

From this study, it may be concluded that there is a strong correlation of thyroid dysfunction with menstrual disorders. Menstrual irregularities can settle if thyroid disorder in patients with menstrual dysfunction are timely diagnosed and treated. Unnecessary interventions like hormonal treatment and surgery can also be avoided. Thyroid profile should be done in every patient with menstrual disorder since thyroid dysfunction is an important treatable cause of menstrual irregularity.

The prevalence of subclinical hypothyroidism in patients with menstrual disorder emphasizes the need to detect hypothyroidism at this stage, so that treatment can be initiated and progression to overt disease can be slowed down as a part of management of menstrual disorder.

References

[1]. Christy forter and Hiba al Zubeidi. Menstrual irregularities, 47, 1, (23), 2018
[2]. LivioCasarini, Danielle santi, Giulia Brigante and Manuela simoni. Two hormones for one receptor: evolution, biochemistry, action and pathophysiology of LH and HCG, 10.1210/2018-00065, 39, 5, (549-592), 2018
[3]. Janid Pigmental, Melisa chambers, Madhia shahid, Reetichawla. Comorbidities of thyroid disease, 63, 1, 2016
[4]. NangiaSangita Ajmani, Vinita Sarbhai, Namrata Yadav, Mohini Paul, Ayesha Ahmad, A.K. ajmani. Role of thyroid dysfunction in patients with menstrual disorder in tertiary care center of walled city of delhi, journal of obstetrics and gynaecology of india,66, 2, (115), 2016
[5]. James X Wu, Stephanie Young, Kevin RO, Ning li, Angela M Lung, Harvey k Chiu, Avital Harari, Michael W Yeh. Reproductive outcome and nonocologic complication after radioactive iodine ablation for well differentiated thyroid cases. 25, 1, (133), 2015
[6]. Ralf Nass, Kretin d. Heln, William s Evans. Pathophysiological alterations of neuroendocrine axis. (439-484.e13), 2014
[7]. SiohanDHarlow, Gayle CWindham, PangajaParasmothy. Menstrual and menstrual disorder, women and health (163-177), 2013
[8]. Abraham R Murugan vs, Puleazvanthen P et al. thyroid disorder in women of Puducherry: Indian jelinbiochem, 24(1):52-9. 2009
[9]. Thomas R, Reid RL. Thyroid disease and reproductive dysfunction: a review obstetgynecol; 70:789-98. 1987
[10]. Andrew dweek . menorrhagia and hypothyroidism. British medical journal. 2000;320(7235):649
[11]. Cowan BD, Morrison JC. Management of abnormal genital bleeding in girls and women. N eng j med 324:1717-1715.1991
[12]. Krassas GE. Thyroid disease and female reproduction. Fertile steril 74:1063-1070. 2000
[13]. Doufas AG, Mastorkaos G. the hypothalamic pituitary thyroid axis and female reproductive system. Ann nyacad sci 900:65-76. 2000

[14]. Kakuno Y, Amino N, Kanon M, Kawai M, fujwana et al. menstrual disorders in various thyroid endocrinal disease. 57:1017-1022.2010
[15]. Brenner PF. Differential diagnosis of AUB. Am J obstetgynaecol 174:766-769. 1996
[16]. Kaur T, Aseeja V, Sharma. S. thyroid dysfunction in DUB. Webmed central obstetgynaecol 2011;2(9):1-7
[17]. Padmalella K. Thomas V, Lavanya KM, et al. thyroid disorder in DUB among reproductive age group women- a cross sectional study in a tertiary care hospital in Andhra Pradesh. Int j med pharma sci, 2013;4(1):41-6

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