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ORIGINAL ARTICLE

Assessment of thyroid dysfunction in women with menstrual disorders

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ABSTRACT:

Background: Thyroid dysfunction may have profound effects on the female reproductive system and thus women with thyroid dysfunction often have menstrual irregularities, infertility and increased morbidity during pregnancy. The present study was conducted to assess thyroid dysfunction in women with menstrual disorders. **Materials & Methods:** 65 women with menstrual disorders and equal number of healthy women was enrolled. Direct quantitative determination of T3, T4, and TSH by ELISA using human serum-based calibration was performed. **Results:** Common complaints were amenorrhea in 17, Hypo/Oligomenorrhea in 12, Metrorrhagia in 20, menorrhagia in 9 and polymenorrhea in 6 patients in study group. Thyroid status found to be euthyroid in 32 and 48 in group I and II, subclinical hypothyroid in 14 and 10, overt hypothyroid in 10 and 5, subclinical hyperthyroid in 6 and 2 and overt hyperthyroid in 3 in group I and II respectively. **Conclusion:** Most of the patients with menstrual disorder had abnormal thyroid profile as compared to healthy women.

Key words: Thyroid dysfunction, menstrual disorders, women.

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INTRODUCTION

Menstrual problems account for much of the morbidity, affecting one in every five women during their life span. Prevalence of menstrual morbidity in developing countries is comparable to that observed in developed countries and menstrual dysfunction represents a problem for women in developing countries.[1] In developing countries, abnormal uterine bleeding appears to affect about 5-15% of women of reproductive age and probably a higher percent of women in older age groups. Others menstrual disorders include amenorrhea, dysmenorrhea etc.[2]

Thyroid disorders are among the commonest endocrine disorders worldwide. Thyroid dysfunction can interfere in multiple metabolic and physiological processes including menstrual cycle. Thyroid hormones play an important role in normal reproductive physiology through direct effects on the ovaries and indirectly by interacting with sex hormone-binding globulin.[3] Thyroid dysfunction can lead to menstrual irregularities and infertility. In India, thyroid disorders are among the most common endocrine diseases. Onset of thyroid disorders increases with age, and it is estimated that 26 % of premenopausal and menopausal women are diagnosed with thyroid disease. Thyroid disorders are more common in women than in men and in older adults compared with younger age groups.[4]

Thyroid dysfunction may have profound effects on the female reproductive system and thus women with thyroid dysfunction often have menstrual irregularities, infertility and increased morbidity during pregnancy.[5] The present study was conducted to assess thyroid dysfunction in women with menstrual disorders.

MATERIALS & METHODS

The present study comprised of 65 women with menstrual disorders. All were enrolled in the study after explaining the importance of the study to all and their written consent was obtained.

Data such as name, age etc. was recorded. Equal number of healthy women was enrolled in control group. age of menarche, menstrual disorders and dysmenorrhea, general physical examination along with pelvic examination was carried out. Parameters such as Hb, Platelet count, TLC, DLC, ESR, ABO-Rh, and thyroid profile that includes T3, T4, TSH, and anti-TPO antibody was performed in all patients. Direct quantitative determination of T3, T4, and TSH by ELISA using human serum-based calibration was performed. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of subjects

Groups	Group I	Group II
Status	Menstrual disorder	Healthy
Number	65	65

Table I shows distribution of subjects based on menstrual disorders.

Table II Complains in study group

Complaints	Number	P value
Amenorrhea	17	0.01
Hypo/Oligomenorrhea	12	
Metrorrhagia	20	
Menorrhagia	9	
Polymenorrhea	6	

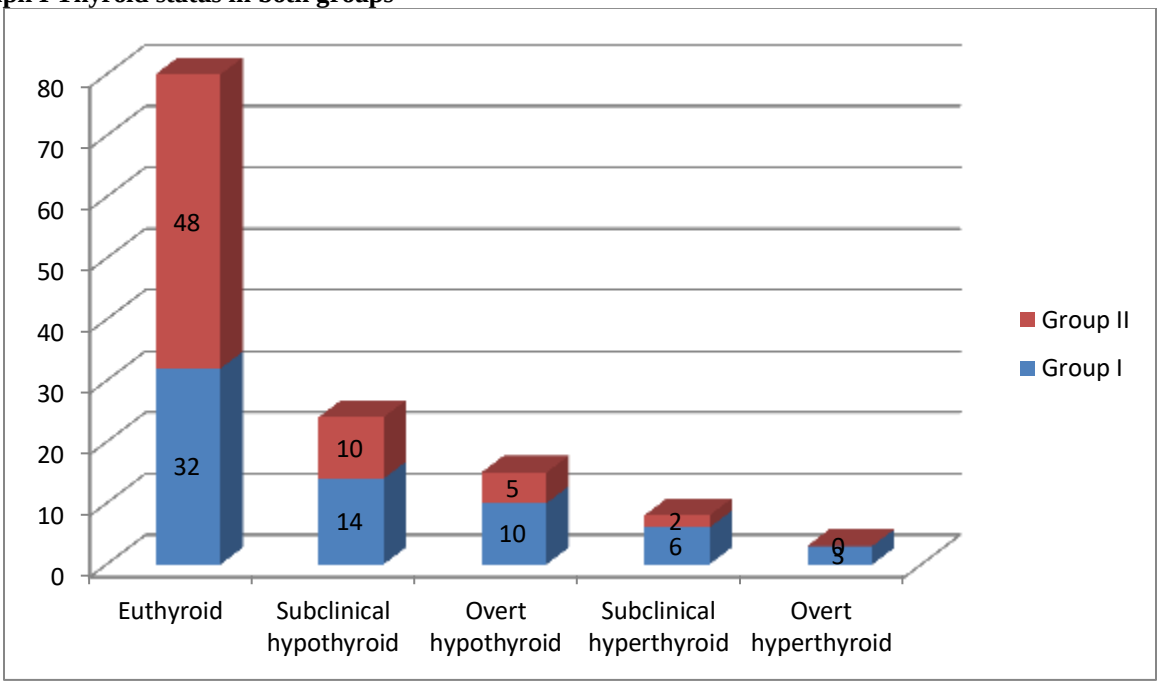
Table II shows that common complaints were amenorrhea in 17, Hypo/Oligomenorrhea in 12, Metrorrhagia in 20, menorrhagia in 9 and polymenorrhea in 6 patients in study group.

Table III Thyroid status in both groups

Groups	Group I	Group II	P value
Euthyroid	32	48	0.01
Subclinical hypothyroid	14	10	
Overt hypothyroid	10	5	
Subclinical hyperthyroid	6	2	
Overt hyperthyroid	3	0	

Table III, graph I shows that thyroid status found to be euthyroid in 32 and 48 in group I and II, subclinical hypothyroid in 14 and 10, overt hypothyroid in 10 and 5, subclinical hyperthyroid in 6 and 2 and overt hyperthyroid in 3 in group I and II respectively.

Graph I Thyroid status in both groups



DISCUSSION

Hyperthyroidism occurring before puberty has been reported to delay the onset of menses. In women of fertile age group, oligomenorrhea and amenorrhea are the commonest abnormalities associated with hyperthyroidism. These irregularities sometimes precede thyroid dysfunction. In the present times, subclinical hyper- and hypothyroidism can be diagnosed very early, whereas these would have passed unnoticed a few decades ago. Timely detection of thyroid disorder in patients presenting with menstrual disorders and their management can prevent surgical intervention like curettage and hysterectomy.[6] Thyroid disorders in general and hypothyroidism in particular are the common causes of menstrual disorders in women. Menarche, pubertal growth and development, menstrual cycles, fertility and fetal development, postpartum period, reproductive years, and postmenopausal years are profoundly influenced by the thyroid status of women. It is recognized universally that menstrual disturbances may accompany and even may precede thyroid dysfunction.[7] The present study was conducted to assess thyroid dysfunction in women with menstrual disorders.

In present study common complaints were amenorrhea in 17, Hypo/Oligomenorrhea in 12, Metrorrhagia in 20, menorrhagia in 9 and polymenorrhea in 6 patients in study group. Khatiwada et al[8] found that the mean age of study patients was 25.7±6.8 years. The most common menstrual disorder observed was irregular cycle (72.5%, n=169) followed by amenorrhea (21.9%, n=51) and menorrhagia (5.6%, n=13). Most of the patients were in the age group 15- 24 years (51.1%, n=119), followed by 25-34 years (36.1%, n=84) and 35-45 years (12.9%, n=30). Mean level of free T3 and T4 was 2.91±1.05 pg/ml, 1.42±0.57 ng/dl respectively. Median TSH was 2.0 mIU/L. Thyroid dysfunction was seen in 25.8% (n=60) women. Most common thyroid dysfunction was subclinical hypothyroidism (14.2%, n=33) followed by subclinical hyperthyroidism (6.9%, n=16), overt hyperthyroidism (3%, n=7) and overt hypothyroidism (1.7%, n=4).

We observed that thyroid status found to be euthyroid in 32 and 48 in group I and II, subclinical hypothyroid in 14 and 10, overt hypothyroid in 10 and 5, subclinical hyperthyroid in 6 and 2 and overt hyperthyroid in 3 in group I and II respectively. Ajmani et al[9] included 100 women aged between 15 and 45 years who attended gyne OPD. The study group comprised 50 patients presented with menstrual complaints. The control group consisted of 50 women of same age group with complaints other than menstrual disorders. Thyroid function tests, anti-TPO antibody estimation, and endometrial sampling were done in all patients. In patients with menstrual disorders, 44 % had thyroid disorders in which subclinical hypothyroidism was prevalent in 20 %, overt hypothyroidism in 14 %, and overt hyperthyroidism in 8 % of the women. Autoimmune thyroid antibodies were present in 30 % patients of women with menstrual disorders. On endometrial sampling, hypothyroid patients mainly had proliferative endometrium (42.85 %) whereas hyperthyroid had atrophic endometrium (60 %).

In the study by Kaur[10], 9 (64.3 %) hypothyroid patients had proliferative endometrium, 3 (21.4 %) had endometrial hyperplasia, and the rest 2 (14.3 %) had secretory endometrium. Sharma[11] found 36.36 % proliferative, 36.36 % secretory and 27.27 % atrophic endometrium in hypothyroid patients. In hyperthyroid patients, they found 42.84 % proliferative, 28.56 % secretory, and 14.28 % hyperplastic endometrium on histopathology examination.

Gowri[12] in their study thyroid dysfunction was seen in 25.8% women with menstrual disorders, and women with menorrhagia have higher TSH level and lower free T3 level than women with other menstrual disorders. Higher level of TSH and lower free T3 observed in menorrhagia than in other menstrual disorders may be due to smaller number of women with menorrhagia in the present study that had poor thyroid function. The major thyroid dysfunction was subclinical hypothyroidism followed by subclinical hyperthyroidism, overt hyperthyroidism and overt hypothyroidism.

CONCLUSION

Authors found that most of the patients with menstrual disorder had abnormal thyroid profile as compared to healthy women.

REFERENCES

1. Abraham R, Murugan VS, Pukazhvanthen P, et al. Thyroid disorders in women of puducherry. Indian J Clin Biochem. 2009;24(1):52–9.
2. Thomas R, Reid RL. Thyroid disease and reproductive dysfunction: a review. Obstet Gynecol. 1987;70:789–98.
3. Koutras DA. Disturbances of menstruation in thyroid disease. Ann NY Acad Sci. 1997;816:280–4.
4. Kakuno Y, Amino N, Kanoh M, et al. Menstrual disturbances in various thyroid disease. Endocr J. 2010;57(12):1017–22.
5. Albers JR, Hull SK, Wesley RM. Abnormal uterine bleeding. Am Fam Phys. 2004;69(8):1915–34.
6. Poppe K, Glinoer D. Thyroid autoimmunity and hypothyroidism before and during pregnancy. Human Reprod Update. 2003;9:149–61.
7. Kochupillai N. Clinical endocrinology in India. Curr Sci. 2000; 79: 1061-7.
8. Khatiwada S, Gautam S, Rajendra KC, Singh S, Shrestha S, Jha P, Baral N, Lamsal M. Pattern of thyroid dysfunction in women with menstrual disorders. Annals of Clinical Chemistry and Laboratory Medicine. 2016 May 3;2(1):3-6.

9. Ajmani NS, Sarbhai V, Yadav N, Paul M, Ahmad A, Ajmani AK. Role of thyroid dysfunction in patients with menstrual disorders in tertiary care center of walled city of Delhi. The Journal of Obstetrics and Gynecology of India. 2016 Apr;66(2):115-9.
10. Kaur T, Aseeja V, Sharma S. Thyroid dysfunction in dysfunctional uterine bleeding. Web Med Central Obstet Gynaecol. 2011;2(9):1–7.
11. Sharma N, Sharma A. Thyroid profile in menstrual disorders. JK Science. 2012;14(1):14–7.
12. Gowri M, Radhika BH, Harshini V, et al. Role of thyroid function tests in women with abnormal uterine bleeding. Int J Reprod Contracept Obstet Gynecol. 2014;3(1):54–7.