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ORIGINAL ARTICLE

ROLE OF THYROID DYSFUNCTION IN PATIENTS WITH A PROVISIONAL DIAGNOSIS OF DYSFUNCTIONAL UTERINE BLEEDING

Mrinal Kanti Kundu[1], Nibedita Chattopadhyay[2], Sajal Kumar Mondal[3], Manami Roy[4], Manas Kumar Saha[5], V. Aruna Kumari[6], Arati Biswas[7]

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ABSTRACT: Introduction and Objectives: Dysfunctional uterine bleeding is an abnormal bleeding from the uterus in absence of organic disease of genital tract and demonstrable extragenital cause. Dysfunctional uterine bleeding is synonymous with anovulatory bleeding. Thyroid dysfunction is marked by large number of menstrual aberrations. This study aimed at detecting thyroid dysfunction in patients with a provisional diagnosis of DUB and refers positive cases to physician for further evaluation. **METHODS:** 100 cases of clinically diagnosed DUB were taken from gynecology OPD and inpatients of Calcutta National Medical College and Hospital. All patients from puberty to premenopausal age groups presenting as menorrhagia, acyclical metropathia, polymenorrhagia, metrorrhagia, oligomenorrhoea, polymenorrhoea and hypomenorrhoea were tested for their thyroid function by free thyroxine (fT4), TSH estimations in their serum. Patients who had clinical symptoms and signs of thyroid disease, already on hormonal treatment, IUCD users, or had bleeding disorders were excluded from the study. **RESULTS:** 23% of patients who were studied had thyroid dysfunction of which 13% of patients had subclinical hypothyroidism, 7% of patients had hypothyroidism and only 3% of patients had hyperthyroidism. The commonest bleeding abnormality in subclinical hypothyroid patients was polymenorrhoea and menorrhagia. All hyperthyroid cases were oligomenorrhoeic. **CONCLUSION:** Both subclinical hypothyroid and profoundly hypothyroid cases together were the commonest thyroid dysfunction and menorrhagia was their commonest menstrual abnormality. So this study concludes that biochemical evaluation of thyroid function should be made mandatory in all provisionally diagnosed cases of DUB to detect thyroid dysfunction.

KEYWORDS: Dysfunctional uterine bleeding (DUB), Thyroid dysfunction, Hypothyroidism, Subclinical hypothyroidism, Hyperthyroidism.

INTRODUCTION: Dysfunctional uterine bleeding is an abnormal bleeding from the uterus in the absence of organic disease of genital tract and demonstrable extragenital cause.[1] DUB accounts for 10% of the gynecology related complaints. Up to one half of women with abnormal uterine bleeding will have DUB.[2] Thyroid dysfunction is also marked by large number of menstrual aberrations.

Both hypothyroidism as well as hyperthyroidism is associated with a variety of changes in reproductive function including delayed onset of puberty, anovulatory cycles and abnormally high fetal wastage.[3] Clinical experiences show increased menstrual flow to be the most common reproductive system manifestation of hypothyroidism.

Although the occurrence of menstrual disturbances in hypothyroid woman has been documented, the number of hypothyroid patient originally requiring treatment for menorrhagia has not been carefully elicited.[4] Moreover majority of the cases has subclinical hypothyroidism and easily

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pass unrecognized. Danese MD et al recommend hypothyroidism is frequent enough to warrant consideration in older women, justifying screening even in asymptomatic older women.[5]

The introduction of serum free thyroxine (fT4) and serum thyroid stimulating hormone (TSH) radioimmunoassays has increased the sensitivity and specificity of thyroid function testing. The serum TSH assay has been shown to be a sensitive indicator of diminished thyroid functional reserve, since TSH levels become elevated before circulating serum thyroxine levels fall below the normal range.[6]

Hence this study is to evaluate the thyroid function in patients having abnormal menstrual bleeding from puberty to premenopausal age groups which will be interesting and justifiable and will help in further management of DUB.

OBJECTIVES:

1. To evaluate and detect the thyroid dysfunction in patients with dysfunctional uterine bleeding. (all age groups).
2. To refer positive cases to the physician for further management/treatment.

MATERIALS AND METHODS: Present study aimed to establish the role of thyroid dysfunctions in relation to menstrual disturbances.

This study was carried out in the department of OBG, Calcutta National Medical College and Hospital, Kolkata. 100 women who were detected clinically with the provisional diagnosis as dysfunctional uterine bleeding during the period June 2010 to May 2011 were selected for the study.

Criteria for selection of Cases: All cases provisionally diagnosed to have dysfunctional uterine bleeding from puberty to premenopausal age groups with major complaint of menstrual disturbances.e.g. menorrhagia, polymenorrhagia, metrorrhagia, oligomenorrhoea, polymenorrhoea and hypomenorrhoea.

Exclusion Criteria: Patients already on any drug or hormones, IUCD users, with overt clinical symptoms of thyroid dysfunction and history of bleeding disorders.

METHODS: A detailed history was obtained with special relevance to age, bleeding pattern (Onset, duration, amount of bleeding). Complaints related to thyroid dysfunction were noted in detail. A thorough clinical examination including general physical examination, neck examination, gynecological and systemic examination was carried out, with special reference to thyroid dysfunction; a provisional diagnosis of DUB was attained.

Patients with clinical signs and symptoms of thyroid disease were excluded. All these patients were subjected to routine investigations like hemoglobin percentage, blood counts, urine examination for albumin, sugar and microscopy, bleeding time, clotting time. (to rule out coagulation defect).

Then all patients were subjected for free thyroxine (fT4) and TSH estimation in the sera.

TSH was estimated by ultrasensitive fully automated ADVIA centaur, Bayer USA chemiluminescent system using two site sandwich chemiluminescent immunoassay.

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These tests were done in random blood samples as the variation in TSH secretion due to circadian rhythm with a peak at 01.00hrs and nadir at 11.00hrs is small and does not influence the timing of blood sampling.

Patients were then grouped into 4 categories:

- EUTHYROID (normal TSH and fT4).
- SUBCLINICAL HYPOTHYROID (raised TSH with low normal fT4).
- HYPOTHYROID (raised TSH with low fT4).
- HYPERTHYROID (low TSH and raised fT4).

Patients found to have thyroid dysfunction were referred to physician for further management.

RESULTS:

Age in years	No of patients	Acy-clical	Hypome-norrhoea	Menor-rhagia	Metrom-enorhagia	Oligome-norrhoea	Polym-enorhagia	Polyme-norrhoea
15-20	23	5	1	9	1	4	3	0
21-30	30	3	3	11	0	7	1	5
31-40	36	5	1	10	2	7	3	8
41-45	11	2	0	2	0	1	1	5
Total	**100**	**15**	**5**	**32**	**3**	**19**	**8**	**18**

Table 1

Patients with age between 15 to 20years, most common bleeding pattern was menorrhagia (39.1%, followed by acyclical metropathia (21.7%). Whereas in the patients with age >41 had polymenorrhoea as their commonest bleeding pattern.

Thyroid Function	No. of cases	Percentage (%)
Euthyroid	77	77
Hypothyroid	7	7
Subclinical hypothyroidism	13	13
Hyperthyroid	3	3

Table 2: Distribution of patients according to thyroid function (n=100)

According to this table maximum number of apparently normal patients with DUB along with thyroid dysfunction belonged to the category of subclinical hypothyroidism (13%).

Parity	No. of cases	Euthyroid	TDF			Total thyroid dysfunction	%
			Hypothyroid	Subclinical hypothyroidism	Hyperthyroid		
Unmarried	25	19	3	3	-	6	24
0	6	4	1	1	-	2	33

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1	9	8	0	0	1	1	11
2	22	17	1	3	1	5	22.7
3	21	16	2	3	0	5	23.8
4	10	7	0	2	1	3	30
5	7	6	0	1	0	1	14.2

Table 3: Thyroid dysfunction in relation to parity (n=100)

Thyroid dysfunction was commonest among nulliparous patients about 33% and next common among patients who were para 4, i.e. 30%. 24% of unmarried patients had thyroid dysfunction. The difference in thyroid functioning in individual type of parity is not statistically significant. Chi square=0.62 P=0.89 (Not significant).

TSH levels Micro-IU/ml	No. of cases	Aclyclical (MPH)	Hypo-thyroid	Menor-rhagia	Metror-rhagia	Oligome-norrhoea	Polymen-orrhagia	Polymen-orrhoea
< 0.35	3	0				3		
0.35-5.5	77	10	5	24	3	13	5	17
5.6-10	14	3 (21%)	0	6 (42%)		1 (7.1%)	3 (21.4%)	1 (7.1%)
> 10	6	2 (33.3%)	0	2 (33.3%)		2 (33.3%)		

Table 4: TSH levels and different bleeding patterns (n=100)

Patients with TSH levels <0.35 all of them presented with symptoms of oligomenorrhoea. Patients with TSH levels moderately elevated 5.6-<10 as seen in subclinical hypothyroidism, 42% of patients presented with menorrhagia, 21.45% of patients presented with polymenorrhoea and 21% presented with acyclical MPH. Patients with TSH levels profoundly elevated i.e. >10 had acyclical MPH in 33.3% of cases, menorrhagia in 33.3% of cases and oligomenorrhoea in 33.3% of cases.

Free T4 Level (ng/dl)	No. of cases	Acyclical (MPH)	Hypome-norrhoea	Menor-rhagia	Metror-rhagia	Oligome-norrhoea	Poly menorrhagia	Polyme-norrhoea
≤0.8	6	2		2		2		
0.8-1.8 (normal range)	88	13	5	29	3	13	7	18
>1.8	6			1		4	1	

Table 5: Free T4 (fT4) levels and different bleeding patterns (n=100)

This table shows relationship of fT4 levels to different types of bleeding pattern. Patients with fT4 level ≤ 0.8ng/dl, equal incidence of acyclical MPH, metrorrhagia and oligomenorrhoea (33.3%) each.

Patients with fT4 levels >1.8ng/dl had predominantly oligomenorrhoea as their complaint (66%).

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Only 12% of the total number of patients showed abnormal fT4 levels compared to 23% of patients who showed abnormal TSH levels.

DISCUSSION: Thyroid dysfunction is marked by large number of menstrual aberrations.

In the present study patients were taken from all age groups (15-45) and maximum number of patients belonged in the age group of 31-40years. In study by Charusheela D. Doifode et al also, the maximum number of patients belonged in age group 31-40years. In our study patients with clinical symptoms of thyroid dysfunction were excluded, but in their study all patients with menstrual aberrations irrespective of the presence of signs and symptoms of thyroid dysfunction were included.

In our study hypothyroidism was the commonest (i.e. 20%) thyroid dysfunction seen in patient with seven different types of menstrual disturbances, which is less compared to the study by C. D. Doifode et al of 28.17%.

Menorrhagia in hypothyroidism was the commonest menstrual abnormality seen in our study (40%) which is similar to Singh et al study result of 44.4%.

In our study oligomenorrhoea patients had both hypo and hyperthyroidism (50% & 50%) which is similar to study by Lakshmi Singh et al (36.3% & 63.3% respectively).

If the bleeding workup does not provide any clue to the etiology of the menorrhagia, a patient often is given the diagnosis of dysfunctional uterine bleeding (DUB). Most cases of DUB are secondary to anovulation. Without ovulation, the corpus luteum fails to form, resulting in no progesterone secretion. Unopposed estrogen allows the endometrium to proliferate and thicken. The endometrium finally outgrows its blood supply and degenerates.

The end result is asynchronous breakdown of the endometrial lining at different levels of maturation. This also is why anovulatory bleeding is heavier than normal menstrual flow. Both hypothyroidism and hyperthyroidism result in menorrhagia. Even subclinical cases of hypothyroidism produce heavy uterine bleeding in 20% of patients. Menorrhagia usually resolves with correction of the thyroid disorder.[8]

Hypothyroidism tends to cause menorrhagia or polymenorrhoea. These symptoms being present in 30-40 % of cases, thyroid function should be especially evaluated in cases of menorrhagia.[9]

CONCLUSION: Our study concludes that thyroid dysfunction should be considered as an important etiological factor for menstrual abnormality. Thus biochemical evaluation of T3, T4 and TSH estimations should be made mandatory in DUB cases to detect apparent and occult thyroid dysfunction. These patients of DUB associated with thyroid dysfunction if given medical treatment avoid necessity of hormonal treatment or surgical intervention.

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AUTHORS:

1. Mrinal Kanti Kundu
2. Nibedita Chattopadhyay
3. Sajal Kumar Mondal
4. Manami Roy
5. Manas Kumar Saha
6. V. Aruna Kumari
7. Arati Biswas

PARTICULARS OF CONTRIBUTORS:

1. Associate Professor, Department of Obstetrics and Gynaecology, CNMCH.
2. Professor, Department of Obstetrics and Gynaecology, CNMCH.
3. Assistant Professor, Department of Obstetrics and Gynaecology, CNMCH.
4. RMO cum Clinical Tutor, Department of Obstetrics and Gynaecology, CNMCH.
5. RMO cum Clinical Tutor, Department of Obstetrics and Gynaecology, CNMCH.
6. Senior Resident, Department of Obstetrics and Gynaecology, AIIMS, New Delhi.
7. Professor and HOD, Department of Obstetrics and Gynaecology, CNMCH.

NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:

Dr. Manas Kumar Saha,
Sonarpur Ghosh Para,
Station Road,
Ujwala Bhabon,
Flat No. 3C/1,
Kolkata-700150.
Email: drmanas.saha@gmail.com

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