ROLE OF THYROID FUNCTION TEST IN CASES WITH PROVISIONAL DIAGNOSIS OF DYSFUNCTIONAL UTERINE BLEEDING

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ABSTRACT

BACKGROUND AND OBJECTIVES

Dysfunctional uterine bleeding is an abnormal bleeding from the uterus in absence of organic disease of genital tract and demonstrable extragenital cause. Thyroid dysfunction is marked by large number of menstrual aberrations. This study aimed at detecting thyroid dysfunction and further evaluating in patients with a provisional diagnosis of DUB.

METHODS

One hundred cases of clinically diagnosed DUB were taken from Gynaecology OPD and in patients of OBG Department VIMS, Bellary. 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 T3, T4, TSH estimations in their serum. Patients who had clinical symptoms and signs of thyroid disease, was on hormonal treatment, IUCD users, or had bleeding disorders were excluded from the study.

RESULTS

A 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 were 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 functioning should be made mandatory in all provisionally diagnosed cases of DUB to detect thyroid dysfunction.

KEYWORDS

Dysfunction Uterine Bleeding (DUB), Thyroid Dysfunction, Hypothyroidism, Subclinical Hypothyroidism, Hyperthyroidism.

HOW TO CITE THIS ARTICLE: Shiva Kumar HC, Ramaraju HE. Role of thyroid function test in cases with provisional diagnosis of dysfunctional uterine bleeding. J. Evolution Med. Dent. Sci. 2016;5(12):509-512, DOI: 10.14260/jemds/2016/117

INTRODUCTION

Dysfunctional uterine bleeding is one of the most frequently encountered conditions in gynaecology and is defined as abnormal bleeding from uterus in absence of organic disease of the genital tract. It is recognized universally that menstrual disturbances may accompany clinical alterations in thyroid function, and every clinician has encountered altered menstrual patterns among women suffering from hypothyroidism and hyperthyroidism.

Both hypothyroidism and hyperthyroidism may result in menstrual disturbances. Hyperthyroidism reduces menstruation and hypothyroidism causes menorrhagia. Hyperthyroidism in contrast is associated with a menorrhagia and oligomenorrhoea and the decrease in flow is proportional to the severity of the thyrotoxicosis.[1]

Financial or Other, Competing Interest: None.
Submission 25-12-2015, Peer Review 21-01-2016,
Acceptance 27-01-2016, Published 10-02-2016.
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DOI: 10.14260/jemds/2016/117

MATERIAL AND METHODS

Present study aimed to establish the role of Thyroid Function Tests in relation to menstrual disturbances. This study was carried out in the department of OBG, VIMS, Bellary. One hundred women who were given clinically the provisional diagnosis as dysfunctional uterine bleeding from Jan 2011 to December 2011 were selected for the study.

Inclusion Criteria

All cases provisionally diagnosed to have dysfunctional uterine bleeding from puberty to premenopausal age groups. All patient had major complaint of menstrual disturbances, e.g. menorrhagia, poly menorrhoea, poly-menorrhagia, metropathia hemorrhagica, metrorrhagia, oligo and hypomenorrhoea.

Exclusion Criteria

Patients who were on drug or hormones, IUCD users with overt clinical symptoms of thyroid dysfunction, history of bleeding disorder.

METHOD

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 dA thorough clinical examination including general physical examination, neck examination, gynaecological and systemic

examination was carried out with special reference to thyroid dysfunction; a provisional clinical 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, microscopy, bleeding time, clotting time, (To rule out coagulation defect). Then all patients were subjected for T3, T4 and TSH estimation in their sera. T3 and T4 were assayed by chemiluminescent immunoassay. TSH was estimated by ultrasensitive fully automated ADVIA centaur, Bayer USA chemiluminescent system using two-site sandwich, chemiluminescent immunoassay. Level of T3, Level of T4 and Level of TSH were noted. Patients were then grouped into 4 categories- Euthyroid, Subclinical Hypothyroid, Hypothyroid, Hyperthyroid.

Patients found to have thyroid dysfunction were further evaluated and treated for Thyroid dysfunction.

RESULTS

The total number of patients studied was 100.

Type of Bleeding	No. of Cases	Percentage
Acylical (MPH)	15	15%
Hypomenorrhoea	5	5%
Menorrhagia	**32**	**32%**
Metrorrhagia	3	3%
Oligomenorrhoea	19	19%
Polymenorrhagia	18	18%
Polymenorrhoea	8	8%
Total	**100**	**100%**

Table 1: Patients According to Symptoms

Commonest symptom was menorrhagia followed by oligomenorrhoea and polymenorrhoea.

Age in Years	No. of Cases	Acyclical (MPH)		Hypo Menorrhoea		Menorrhagia		Metrorrhagia		Oligo Menorrhoea		Poly Menorrhagia		Poly Menorrhoea	
≤ 20	23	5	21.7%	1	4.3%	9	39.1%	1	4.3%	4	17.3%	3	13.04 %	0	0
21-£ 30	30	3	13.04 %	3	13.04%	11	36.6%	0	0	7	23.3%	1	3.3%	5	16.6 %
31-£ 40	36	5	13.8%	1	2.7%	10	27.7%	2	5.5%	7	19.4%	3	8.3%	8	22.2 %
41 – 50	11	2	13%	0	0	2	18%	0	0	1	9%	1	9%	5	45.4 %
	100	**15**		**5**		**32**		**3**		**19**		**8**		**18**	

Table 2: Patients According to Age Groups and Bleeding Pattern

Thyroid Function	No. of Cases	Percentage
Euthyroid	77	77%
Hypothyroid	7	7%
Subclinical Hypothyroid	**13**	**13%**
Hyperthyroid	3	3%
Total	**100**	**100%**

Table 3: Distribution of Patients According to Thyroid Dysfunction

Parity	No. of Cases	Euthyroid	TDF			Total Thyroid Dysfunction	Percentage
			Hypo thyroid	Subclinical hypothyroid	Hyper thyroid		
Unmarried	**25**	**19**	**3**	**3**	**-**	**6**	**24%**
0	**6**	**4**	**1**	**1**	**-**	**2**	**33%**
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%
Total	**100**		**7**	**13**	**3**	**23**	**100%**

Table 4: Thyroid Dysfunction in Relation to Parity

The difference in thyroid functioning in individual type of parity is not statistically significant.

Chi square=0.62

P=0.89(NS)

Age	No. of Cases	Euthyroid	Hypo Thyroid	Sub hypothyroid	Hyper thyroid	Total Thyroid Dysfunction	Percentage
≤20	23	17	3	3	0	6	26%
21- ≤30	30	26	1	1	2	4	13.3%
31-≤ 40	**36**	**26**	**1**	**8**	**1**	**10**	**27.7%**
41- 50	11	8	2	1	0	3	27.2%
Total	**100**	**77**	**7**	**13**	**3**	**23**	**93%**

Table 5: Thyroid Dysfunction in Different Age Groups

The difference in thyroid functioning in individual age groups is not statistically significant.

Chi square=2.28

P=0.52(NS)

Types of Bleeding	No. of Cases	Euthyroid	Hypo thyroid	Subhypothyroid	Hyper thyroid	Total T.D.F	Percentage
Acylical (MPH)	15	10	3	2	-	5	33%
Hypomenorrhoea	5	5	-	-	-	-	0
Menorrhagia	32	24	2	6	-	8	25%
Metrorrhagia	3	3	-	-	-	-	0
Oligomenorrhea	19	13	2	1	3	6	31.5%
Polymenorrhagia	18	17	-	1	-	1	5.5%
Polymenorrhoea	8	5	-	3	-	3	37.5%
Total	**100**	**77**	**7**	**13**	**3**	**23**	

Table 6: Bleeding Pattern and Thyroid Dysfunction

This table shows how thyroid dysfunction which can be hypothyroidism, subclinical hypothyroidism or hyperthyroidism is related to various types of bleeding abnormalities. Thyroid dysfunction was commonest in patients with polymenorrhoea – 37.5%, next common in patients with acyclical metropathia – 33% followed with in patients with oligomenorrhoea – 31.5%. Patients with menorrhagia had thyroid dysfunction in 25% of cases. Thyroid dysfunction was least common in patients with polymenorrhagia. (5.5%) and absent in patients with metrorrhagia. The difference in thyroid functioning in individual type of DUB is not statistically significant.

Chi square=7.53 P=0.27(NS)

Types of Bleeding	No. of Cases	Euthyroid	%	Hypo thyroid	%	Subhypo thyroid	%	Hyper thyroid	%
Acylical (MPH)	15	10	66.6%	3	20%	2	13.3%	-	
Hypomenorrhoea	5	5	100%	-		-		-	
Menorrhagia	32	24	75%	2	6.2%	6	18.75%	-	
Metrorrhagia	3	3	100%	-		-		-	
Oligomenorrhea	19	13	68.4%	2	10.5%	1	5.2%	3	15%
Polymenorrhagia	18	17	94.4%	-		1	5.5%	-	
Polymenorrhoea	8	5	62.5%	-		3	37.5%	-	

Table 7: Bleeding Patterns in Hypothyroidism and Hyperthyroidism

This table shows the relationship of hypothyroidism, subclinical hypothyroidism and hyperthyroidism to the different types of clinically diagnosed cases of DUB. In acyclical MPH, patients were hypothyroid in 20% of cases and 13.3% of patients had subclinical hypothyroidism. Whereas in patients with menorrhagia only 6.2% of patients had hypothyroidism and 18.75% of patients had subclinical hypothyroidism. Patients with oligomennorrhoea had hyperthyroidism in 15%, hypothyroidism in 10.5% and subclinical hypothyroidism in 5.2%. In polymenorrhoea patients, 37.5% of cases had subclinical hypothyroidism. So patients who were subclinically hypothyroid were maximally presenting as polymenorrhoea (37.5%) and menorrhagia (18.75%) and only 5.25% of patients had oligomenorrhoea. Patient who were hypothyroid were predominantly having acyclical metropathia (MPH) 20% and 10.5% of patients were having oligomenorrhoea. On the other hand patients who were hyperthyroid were exclusively presenting as oligomenorrhoea. Subclinical hypothyroid patients have polymenorrhoea and menorrhagia as their commonest bleeding pattern.

TSH Levels	No. of Cases	Acyclical (mph)		Hypomeno		Menorrhagia		Metrorrhagia		Oligo Menorrhoea		Poly Menorrhagia		Poly Menorrhoea	
≤0.39	3	0								3	100%				
0.4 –≤ 5.6 (Normal Range)	77	10		5		24		3		13		5		17	
5.7 – ≤50.0	14	3	21%	0		6	42%			1	7.1%	3	21.4%	1	7.1 %
> 50	6	2	33.3 %	0		2	33.3%			2	33.3%				

Table 8: TSH Levels and Different Bleeding Patterns

All patients with TSH levels <0.39 had oligomenorrhoea. TSH levels moderately elevated 5.7–50.0 as seen in subclinical hypothyroidism, maximum 42% had menorrhagia, 21.45% polymenorrhoea and 21%. TSH levels profoundly elevated, i.e. >50 had acyclical MPH in 33.3% of cases, menorrhagia in 33.3% of cases and oligomenorrhoea in 33.3% of cases.

T3 Level	No. of Cases	Acyclical (mph)	Hypomeno	Menorrhagia	Metrorrhagia	Oligo Menorrhoea	Poly Menorrhoea	Poly Menorrhoea
≤60	6	**3**		1		2		
61-200	92	12	5	31	3	15	8	18
>200	2					**2**		

Table 9: T3 Levels and Different Bleeding Patterns

T3 levels <60 had acyclical MPH in 50%, 33% had oligomenorrhoea and 17% had menorrhagia. T3 levels >200 all patients had oligomenorrhoea. Only 8% showed abnormal T3 levels compared to 23% abnormal TSH levels.

T4 Levels	No. of Cases	Acyclical (mph)	Menorrhoea	Menorrhagia	Metrorrhagia	Oligo menorrhoea	Poly menorrhagia	Poly Menorrhoea
≤4.5	6	2		2		2		
4.6-12	88	13	5	29	3	13	7	18
>12	6			1		4	1	

Table 10: T4 Levels and Different Types of Bleeding Patterns

T4 level less than 4.5 equal incidence of acyclical MPH metrorrhagia and oligomenorrhoea (33.3%) each. T4 levels > 12 had predominantly oligomenorrhoea as their complaints (66%). Only 12% of the total number of patients showed abnormal T4 levels compared to 23% showed abnormal TSH levels.

DISCUSSION

Thyroid dysfunction is marked by large number of menstrual abnormalities. Our study includes <20 to >45 years and majority 31-40 years similar to Charusheela et al.[2] Maximum number of patients with thyroid dysfunction in our study were unmarried (Adolescent) 25% and multiparous 43.4%, whereas in Doifode et al., primi para 33.33% were maximum. Thyroid dysfunction was commonest in the age group (31-40 years), both in the present study (43.4%) and also in the Doifode et al. (48.33%). In less than 20 years, 26% had thyroid dysfunction, whereas it was 11.67% in Doifode et al. 23.33% of patients with thyroid dysfunction belonged to age group above 40 years in Doifode et al. compared to 13.04% in our study.

In our study and Doifode et al., the commonest complaint was menorrhagia. In our study hypothyroidism was the commonest 20% and also in Doifode et al. 28.16% and by Kaur et al. 14%.[2,3] Menorrhagia was the commonest menstrual abnormality in our hypothyroid patients 40% similar to C.D. Doi Fode et al. (63.3%), Singh et al. (44.4%), Willansky and Bernard et al. (100%).[4,5] In our study polymenorrhoea and polymenorrhagia, both together was the menstrual abnormality in 20% of hypothyroid cases. Oligomenorrhoea was the menstrual pattern in 15% of hypothyroid patient. In C.D. Doi Fode et al. Polymenorrhagia was present in 23.33% of hypothyroid patients.

Subclinical hypothyroidism is diagnosed in cases with normal levels of T3 and T4 [Low normal levels] and raised TSH levels, i.e. (Slightly raised). In our study, 13% had subclinical hypothyroidism almost similar to Douglas L et al. 18.75%.[2]

In our study less than 20 age group menorrhagic patients, 22.22% had hypothyroidism and in Jayadev Mukherji et al. 7% were hypothyroid.[6]

Among our oligomenorrhoea cases, age group ranged from <20 to >40 years, Kalyani Mukherjee et al. age ranged 25-39 years. Thyroid dysfunction in oligomenorrhoea patients in our study is 31.6% and in Kalyani Mukherjee et al. is 80%. In our study 15.3% were hyperthyroid, 15.3% were having hypothyroidism, but no cases of hyperthyroid in Kalyani Mukherjee et al.[7,8] Among cases of oligomenorrhoea Lakshmi Singh et al. conducted on infertile patients with menstrual aberrations, cases of oligomenorrhoea showed 64% of hyperthyroidism and 36% of hypothyroidism.

In our study patients with oligomenorrhoea and thyroid dysfunction showed 50% of hyperthyroid and 50% of hypothyroid cases. In our study hyperthyroidism was seen only in cases of oligomenorrhoea. In Lakshmi Singh et al. hyperthyroidism was seen in 64% of cases with oligomenorrhoea. So in both studies oligomenorrhoea was the commonest menstrual aberration among hyperthyroid patient.[4,9]

CONCLUSION

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 with thyroid dysfunction if given medical treatment avoids necessity of hormonal treatment or surgical intervention.

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