

MENSTRUAL DYSFUNCTION AND THYROID DISEASE

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ABSTRACT

There are contradictory reports regarding the types of menstrual disturbances seen in hypothyroidism and hyperthyroidism and a paucity of information in the Indian literature on the subject. In the present study, 2 groups were examined. Group a consisted of 25 women in the reproductive age group with diagnosed thyroid dysfunction. Of the 12 hyperthyroid patients, who had an average age of 28.7 yrs., hypomenorrhoea was the commonest menstrual disorder. 75% of these patients showed a return to normal periods in an average treatment period (Neomercazole + Propranolol) of 4-6 months. Increased flow and frequency was the main disorder of menstruation in the 13 hypothyroid patients, who had an average age of 34.4 yrs. 66% showed normalisation of menses within 3-4 months of replacement therapy with L-Thyroxine. Group B consisted of 25 women in the reproductive age group with 'Dysfunctional Uterine Bleeding' and investigated for the presence of thyroid dysfunction on routine Thyroid Function Tests (T3, T4, TSH). Only one patient in this group was hypothyroid on investigation. Subclinical hypothyroidism could be the reason behind a significant number of cases of menorrhagia and detection would require the application of the Thyrotropin Releasing Hormone test.

INTRODUCTION

It has long been recognised that thyroid dysfunction may have profound effects on the female reproductive system. During

the investigation of abnormal sexual development, hirsutism, menstrual irregularity and infertility, the possibility of thyroid dysfunction must always be considered. The literature is replete with the reports of various investigators in the field of menstrual disorders in thyroid disease. However

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there are contradictory reports regarding the type of menstrual dysfunction seen in Hypothyroidism and Hyperthyroidism and a paucity of information in the Indian literature.

AIMS AND OBJECTIVES

This study was conducted over a period of 2 years (July '92-July '94) at the Sassoon General Hospitals, Pune, with the following aims and objectives in mind -

* To study the menstrual patterns in women with thyroid disease (hypo/hyperthyroidism).

* To study the change in menstrual pattern, if any, in these women during the course of treatment for thyroid disease.

* To assess the role played by thyroid disorders in women diagnosed to have Dysfunctional Uterine Bleeding (DUB).

METHODS

Two groups of patients were studied -

* Group 'A' : 25 women in the reproductive age group with thyroid dysfunction, 12 with hyperthyroidism and 13 with hypothyroidism, attending the Endocrine Clinic at the Sassoon Hospitals. Their menstrual history was noted and a menstrual calendar maintained for each patient. A change in pattern (either normalisation of menses or the development of a new pattern) was recorded and the response to therapy assessed. Repeat thyroid function tests were done to note the response of the thyroid abnormality to treatment. The hypothyroid patients were on replacement therapy with Tab.Eltroxin and those with hyperthyroidism were on Tab.Neomerca-

zole and/or Tab.Propranolol.

* Group B : 25 women in the reproductive age group with DUB investigated for evidence of thyroid dysfunction by routine Thyroid Function Tests (T3, T4, TSH).

(Normal Serum Values - T3 : 75 - 190ng%

- T4 : 5 - 13.5ng%

- TSH : 0.6 - 3.0 iu/ml)

ANALYSIS AND DISCUSSION

The patients with hyperthyroidism had an average age of 28.7 yrs. and those with hypothyroidism an average age of 34.4 yrs. The mean age at menarche for both groups was 14 yrs.

As seen in Table I, 5 cases of the hypothyroid group and 10 of the hypothyroid women presented with menstrual complaints in addition to those of thyroid dysfunction. This very same population could also have presented to the gynaecologist as cases of 'DUB'.

Of the 13 hypothyroid women (Table II), there were 3 cases each of menorrhagia, polymenorrhagia, hypomenorrhoea and metropathia while 1 patient had regular cycles. These findings compare well with those of Means (1948) who observed menorrhagia in 32% of 41 premenopausal women with myxoedema. It has been postulated that thyroid hormone deficiency may interfere with the ovarian response to gonadotrophins (Scanlon et al 1980). Infrequent or absent ovulation is believed to result in relative estrogen excess (Goldsmith et al 1952) which could be the reason behind the high incidence of menorrhagia seen in this condition.

Of the 12 hyperthyroid women (Table II), 6 had hypomenorrhoea, 2 had menorrhagia

Table I
Presenting complaints in patients with thyroid dysfunction

	Menstrual complaints	Symptoms of Thyroid Disease
Hyperthyroid Group	5	12
Hypothyroid Group	10	13

Table II
Types of menstrual dysfunction observed with thyroid disease

Menstrual disorder	Hyperthyroid Group	Hypothyroid Group
Menorrhagia	2	3
Polymenorrhagia	0	3
Hypomenorrhoea	6	3
Metropathia	0	3
Amenorrhoea	0	0
Regular Cycles	4	1
Total	12	13

Table III
Response of menstrual dysfunction to treatment of hyperthyroidism

Menstrual Irregularity	No. of cases	Av. duration of Irregularity	Response in	Av. duration of Therapy	Response Time
Menorrhagia	2	2 yrs.	1	1.5 yrs.	4 mths.
Oligomenorrhoea	3	3 yrs.	3	3.0 yrs.	5 mths.
Irregular cycles	3	3 yrs.	2	2.0 yrs.	6 mths.

and 4 had regular cycles. Haines and Mussey (1948) report that hypomenorrhoea is four times more common than hypermenorrhoea in hypothyroidism. According to Goldsmith et al (1952) menstrual flow is di-

minished at first and then ultimately ceases.

In addition, there were 2 cases of Primary infertility and 3 cases of Secondary infertility in the hyperthyroid and hypothyroid groups respectively. In the present

Table IV

Response of menstrual dysfunction to treatment of hypothyroidism

Menstrual Irregularity	No. of cases	Av. duration of irregularity	Response in	Av. duration of therapy	Response time
Menorrhagia	3	2 yrs.	2	1.5 yrs.	4 mths.
Hypomenorrhoea					
-Oligomenorrhoea	2	5 yrs.	1	2.0 yrs.	3 mths.
-Irregular cycles	1	5 yrs.	0	3.0 yrs.	-
Polymenorrhagia	3	1.5 yrs.	2	2.0 yrs.	4 mths.
Metropathia	3	1.0 yrs.	3	1.5 yrs.	4 mths.

study there were no cases with Hirsutism or Galactorrhoea. Chronic anovulation associated with an increased ovarian androgen production and low Sex Hormone Binding Hormone (SHBG) values have been implicated in the development of gradual but progressive hirsutism in hypothyroid women (Thomas & Reid 1987). Increased production of Thyrotropin Releasing Hormone (TRH) leading to hypersecretion of Thyroid Stimulating Hormone (TSH) and Prolactin has been held responsible for the galactorrhoea associated with hypothyroidism Kleinbergetal (1977) have reported an incidence of 1-3% of galactorrhoea among patients with long standing hypothyroidism.

Table III shows the response of menstrual dysfunction to the treatment of hyperthyroidism. Menorrhagia was seen in 2 patients for an average duration of 2 yrs. They both received Neomerazole for 1.1/2 yrs. Response was seen in 1 case 4 months after starting treatment. 3 cases with oligomenorrhagia, for an average duration of 3 yrs., responded to treatment with normalisation of flow in 5 months.

Of the 3 patients with irregular cycles, 2 showed regularization of periods within 6 months of starting antithyroid therapy. Thus out of the 8 cases of hyperthyroidism with menstrual dysfunction, 6 cases (75%) showed a return to normal menstrual function in an average treatment period of 4-6 months. In Table IV, the response of menstrual dysfunction to treatment of hypothyroidism is seen. Out of the 3 hypothyroid patients with menorrhagia, 2 showed a reduction in flow 4 months after starting Eltroxin. Of the 3 patients with hypomenorrhoea, who had the irregularity since the past 5 yrs., 2 showed normalization of flow 3 months after starting therapy. 2 of the cases with polymenorrhagia showed reduced flow within 4 months of starting therapy. All 3 cases of metropathia type of bleeding responded to thyroid treatment within 4 months of starting treatment.

The reports of the success in treating abnormal uterine bleeding in hypothyroid women date as far back as 1916 when Salzman A N (1954) obtained good results with thyroid replacement therapy. More recently, Hembree, Van der Wiele (1978)

and Wilansky & Greisman (1989) have published favourable evidence that the menstrual abnormalities associated with classic primary hypothyroidism usually respond to the administration of L/Thyroxine.

Out of a total of 12 patients of hypothyroidism with menstrual abnormalities, 8 patients (66%) showed a return to normal cycles after starting thyroid replacement therapy.

Group B consisted of 25 women in the reproductive age group who presented for abnormal uterine bleeding. They were of an average age of 35.4 yrs. with a mean of 13.8 yrs. at the menarche. The menstrual abnormalities seen in this group were menorrhagia - 10 cases, polymenorrhagia - 6, hypomenorrhoea - 6 and metropathia - 3. Of this group, only 1 patient showed evidence of thyroid dysfunction on routine thyroid function tests (T3, T4, TSH).

Although the occurrence of menstrual disturbances in hypothyroid women has been well documented (Gardiner & Smith (1927) Herraran & Buxton 1954) Scott & Mussey 1963, the incidence of hypothyroidism in patients originally requiring treatment for menorrhagia has not been fully examined. Subclinical hypothyroidism may not be readily detectable on routine TFT's. Wilansky & Greisman 1989 studied 67 apparently euthyroid subjects with menorrhagia on whom a Thyrotropin Releasing Hormone (TRH) Test was carried out. 22% had positive results to the TRH test. It is of interest to note that in their study the baseline serum T4 levels were within the normal

range in both the hypothyroid and euthyroid groups.

In the present study, the use of the TRH test has not been applied and this could probably account for the low pick up rate of early hypothyroidism in patients with menorrhagia and polymenorrhagia.

CONCLUSIONS

Our data show that hypothyroid women tend to have increased menstrual flow while women with hyperthyroidism have a tendency towards hypomenorrhoea.

66% of the hypothyroid women and 75% of the hyperthyroid women showed a return to normal periods within 3-6 months of starting appropriate thyroid therapy.

Subclinical hypothyroidism could be the reason behind a significant number of cases being treated as Dysfunctional Uterine Bleeding. A TRH test would detect the presence of hypothyroidism even if routine thyroid function tests revealed no abnormality.

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