

THYROID PROLACTIN RELATED MENSTRUATION

by

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SUMMARY

Eighteen cases of menstrual irregularities were studied for relationship of thyroid function in causing these menstrual irregularities.

Introduction

The basis of functional disorders of menstruation lies primarily on Hypothalamico—Pituitary—Ovarian Axis (H-P-O Axis) either through their direct effect on target organs or indirectly by their effect on H-P-O Axis.

Hypothyroidism in females has been found to be associated with various menstrual aberrations like menorrhagia, oligomenorrhoea or even amenorrhoea, so there should be some other factor which may be responsible for these menstrual abnormalities in these group of cases. Increased prolactin level is known to cause oligomenorrhoea or amenorrhoea. The present study is to find out the relation between hypothyroidism, menstrual abnormalities, T.S.H. levels and related prolactin level in blood.

Material and Methods

This work was carried out in Eden Hospital, Medical College, Calcutta.

Apart from systematic clinical history taking, special interrogations were made

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of weight, features of thyroid dysfunction and menstrual history.

Investigations Done—

I^{131} uptake
 T_3 and T_4 estimation
T.S.H. level
Prolactin level

Required estimations were done in the Radiological Unit of Medical College Hospital and R.I.A. Unit of S.S.K.M. Hospital. In few cases it was done privately.

Total cases under study were 38, out of which full biochemical investigations could be done only on 18 cases. Out of the rest 20, 12 patients did not come for follow up and the rest 8 did not go for the investigations. In the present communication these 18 cases with full investigation are discussed.

Results

For discussion these 18 patients are split into Group I and Group II (Table I). Group I contains 8 patients with menorrhagia, age ranging between 11-18 years, the mean age being (15 ± 1.5) years.

TABLE I
Distribution of Cases

Group	Clinical presentation	No. of cases	Age range in yrs.	Mean \pm S.D. in yrs.
I	Menorrhagia	8	11-18	15.0 \pm 1.5
II	Oligomenorrhoea Amenorrhoea	10	25-39	31.7 \pm 2.8

Obesity was only found in Group II cases.

Group II contains 10 patients with oligomenorrhoea/amenorrhoea, age ranging between 25-39 years, the mean age being (31.7 \pm 2.8) years.

Hence Group I cases are much younger than Group II cases and obesity was only found in Group II cases.

Table II shows the biochemical results at a glance.

Group I

In 6 out of 8 cases I^{131} uptake was below normal, the mean being (21.7 \pm 6.3)% which is low, and T.S.H. level in this group showed either low or low normal levels, mean (1.2 \pm 0.26) mIU/Lit lying in the lower limit of normal.

T_3 and T_4 levels were below normal in 5 cases, mean being (58 \pm 6) ng/dl and (3.1 \pm 0.50) μ g/dl respectively, which are below normal limits.

Prolactin was within normal limits, mean being (18.9 \pm 0.95) μ g/lit. Hence hypothyroidism in these cases were due to low T.S.H. levels.

Group II

In 6 out of 10 cases I^{131} uptake was below normal, the mean (25.9 \pm 6.3)% was also low. T_3 and T_4 levels were below normal in 5 cases, the mean being (62 \pm 6) ng/dl and (3.6 \pm 0.32) μ g/dl respectively, which are below normal limits.

TABLE II
Biochemical Results

Group	I^{131} uptake \pm S.D.) %	T_3 (\pm S.D.) ng/dl	T_4 (\pm S.D.) μ g/dl	T.S.H. (\pm S.D.) mIU/lit	Prolactin (\pm S.D.) μ g/lit
Normal	30	70-170	5.5-12.5	1-4	2-25
Gr. I Menorrhagia	21.7 (\pm 6.3)	58 (\pm 6)	3.1 (\pm 0.50)	1.2 (\pm 0.26)	18.9 (\pm 0.95)
Gr. II Oligomenor- rhoea Amenorrhoea	25.9 (\pm 6.3)	62 (\pm 6)	3.6 (\pm 0.32)	4.8 (\pm 1.4)	29.2 (\pm 2.7)
Significance	N.S.	N.S.	N.S.	$p < .001$	$p < .001$

The outstanding feature was T.S.H. level which was increased in 8 cases, the mean (4.8 ± 1.04) mIU/lit is significantly higher ($p < .001$) than Group I cases.

Prolactin level is also high in 8 cases, the mean level (29.2 ± 2.7) $\mu\text{g/lit}$ is also significantly higher ($p < .001$) than Group I cases.

Here the patients are suffering from hypothyroidism inspite of high T.S.H. levels, hence the defect lies primarily in thyroid tissue which is unresponsive to high T.S.H. levels.

Discussion

In Group I cases hypothyroidism is due to low T.S.H. levels so the symptomatology i.e. menorrhagia can be due to low thyroid hormone resulting in less metabolism of oestrogen and hence relatively high oestrogen in circulation which causes menorrhagia (Fig. 1).

In Group II cases thyroid gland is dysfunctional, hence inspite of increased T.S.H. output thyroid hormone production is less and by its feed back action on pituitary, T.S.H. is further increased. This high T.S.H. level increases prolactin

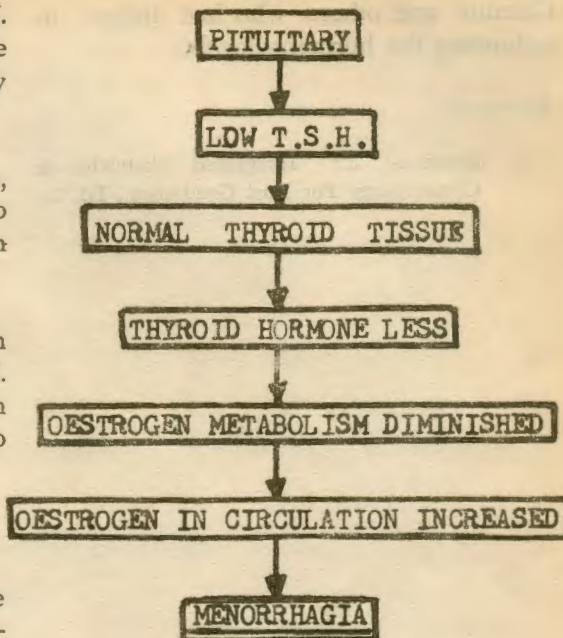


Fig. 1

secretion (Kletzky *et al* 1980, Dewhurst, 1981) which is responsible for Oligomenorrhoea or Amenorrhoea (Fig. 2).

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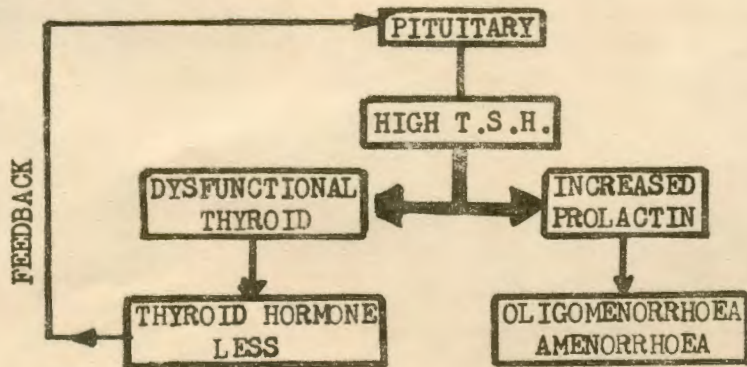


Fig. 2

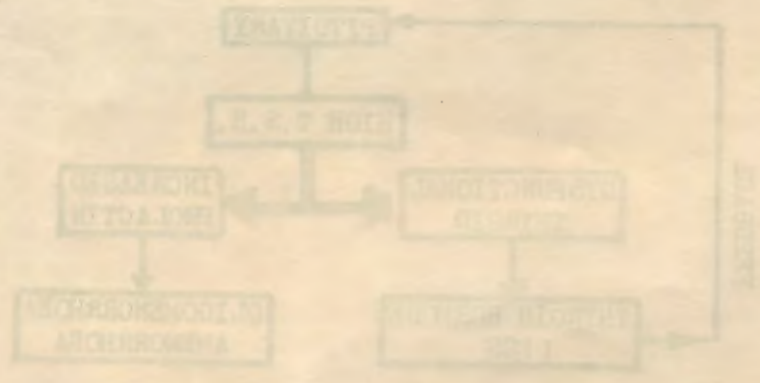
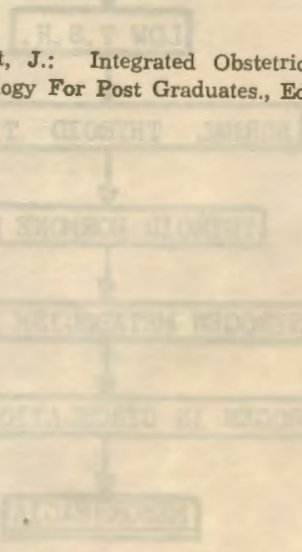
Calcutta and others who had helped in estimating the hormone levels.

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Acknowledgement

In Group I study, the mean level of TSH was 10.1 ± 2.4 mIU/ml (n = 10) which is significantly higher (p < 0.01) than the normal level (2.5 ± 0.7 mIU/ml) (n = 10). This indicates that the patients are suffering from hypothyroidism. The mean level of TSH in Group II study was 10.1 ± 2.4 mIU/ml (n = 10) which is significantly higher (p < 0.01) than the normal level (2.5 ± 0.7 mIU/ml) (n = 10). This indicates that the patients are suffering from hypothyroidism. The mean level of TSH in Group II study was 10.1 ± 2.4 mIU/ml (n = 10) which is significantly higher (p < 0.01) than the normal level (2.5 ± 0.7 mIU/ml) (n = 10). This indicates that the patients are suffering from hypothyroidism.