A CLINICO-HORMONAL ASSESSMENT IN PREMENSTRUAL SYNDROME

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SUMMARY

This study aims to find out the biological basis of the premenstrual syndrome, its relationship with hormonal cycle and its social aspects. Hundred symptomatic female patients suffering from premenstrual syndrome and twenty-five healthy age matched female patients were studied. A detailed history and examination were done in every case. Apart from routine haematology, special investigations of hormones like FSH, LH, oestrogen, progesterone and prolactin levels were assayed in second half of the cycles. The results are compared with a parallel study of normal women done in a similar way. The mean age in PMT was 27 years, 68% were nulliparae and 48.0% were unmarried.

The 17-ß oestradiol is higher in study group as compared to control group which is statistically significant P < 0.05. The plasma progesterone level were lower than those in control group (p < 0.05).

The mean FSH & LH levels were higher as compared to control group but they were not statistically significant. The mean prolactin level was raised (424.65 ± 86.25) in study group as compared to control group (279.94 ± 59.6). This was statistically significant (P < 0.05).

INTRODUCTION

Despite increasing attention, premenstrual syndrome (PMS) remains poorly understood. This may be due to methodological limitation noted in many studies. Premenstrual syndrome is defined as the recurrence of symptoms in premen-

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struam with absence of symptoms in the post menstruam. The present study aims to find out the biological basis of the PMS, its relationship with hormonal cycle and its social aspects.

MATERIAL AND METHODS

The study included 125 (100 study group and 25 control) patients attending outpatient department of S.R.N. Hospital and students of Medical College. A detailed history including economic status, literacy, family history and diet, menstrual and obstetric history, use of contraceptives (oral, IUCD and others) were noted. Symptoms like headache, feeling of tension, weight gain, mastalgia, appetite changes, bowel and bladder symptoms were noted.

Physical examination for blood pressure, pallor, weight gain and breast changes were done.

Apart from routine studies, like, Hb%, blood count, blood grouping, Rh factor and urine examination, special investigations like, FSH, LH, prolactin, oestrogen and progesterone levels were done in second half of the cycles. These hormones were assayed using reagents provided by WHO Geneva, under their matched reagent programme.

Volunteers from subjects with definite signs and symptoms of PMS were taken for hormonal study. All the patients were followed up carefully. Maximum follow up was 9 months. A parallel study of healthy female population was done in a similar way.

OBSERVATIONS AND DISCUSSIONS

The present study showed that the premenstrual tension was more common between 26-30 years of age with a mean age of 27 years i.e. at the peak of reproductive life. This corresponds to the findings of Morton et al (1953). The maximum number of cases in this study were nulliparous (68%). Wood et al (1979) reported similar findings. In the present study 58% patients belonged to higher socio-economic status as was also seen in the study of Mukherjee (1954).

In the present study 48% cases were unmarried and most of the patients were either students or employed. Premenstrual symptoms were much less common in women on the pills than in women using other methods of contraception (Table I).

The various symptoms of PMS in our study were headache, feeling of tension, weight gain, cyclical mastalgia, mood changes, lethargy, fatigue and insomnia. Headache was the most common symptom present in about 76% cases. Rees (1953) also observed an almost identical incidence. Feeling of tension, depression, irritability, loss of interest and impatience were present in 74% cases out of which in 40% cases it presented as a prominent one. Our finding are comparable with these of Mukherjee (1954).

The calculated premenstrual weight gain of 2 kg was observed in 40% of cases, $t = 1.36$ and $P < 0.05$ which is statistically significant. Reeves et al (1971) showed an average weight gain of 1.25 lbs. in 82% cases. Cyclical mastalgia was found in 48.0% patients in our study group.

In the present study, the mean ± SD value of 17-B oestradiol in control group

Table I

Percentage incidence of cases in relation to type of contraception used

Type of Contraception	Control Group		Study Group	
	Number	Percentage	Number	Percentage
Oral pills	7	28	12	12
I.U.D.	3	12	6	6
Diaphragm or Condom	–	-	4	4
Had been on Pills in past	-	-	16	16
Never had any contraception	15	60	62	62
Total	25		100	

Table II

Levels of hormones oestrogen and progesterone

Hormones	Cases	Levels mean ± SD	't'	'p'	Inference
17 B oestradiol p mol/L	Control	164.86 ± 25.82	25.91	.05	significant
	Study	351.87 ± 30.70			
Progesterone n mol/L	Control	27.92 ± 12.63	2.93	.05	Significant
	Study	14.34 ± 20.98			

Table III

Showing plasma level of FSH

Cases	No. of cases	FSH IU/L Mean ± SD	'P' value
Control group	25	9.33 ± 7.91	
Study group	100	7.82 ± 3.61	> 0.05

Table IV

Showing plasma level of Luteinizing Hormone (LH)

Cases	No. of cases	LH IV/L Mean ± SD	'P' value
Control group	25	25.33 ± 14.33	
Study group	100	21.29 ± 17.0	> 0.05

Table V

Showing plasma prolactin level

Cases	No. of cases	PRL mu/L Mean ± SD	'P' value
Control group	25	279.94 ± 59.6	
Study group	100	424.65 ± 86.25	> 0.05

was 164.86 ± 25.82 and in study group it was 351.87 ± 30.70 P mol/lit. So the level of 17-B oestradiol was found to be significantly higher in luteal phase of patients with PMS ($P < 0.05$). Backstrom and Carstensen (1974) found higher levels of oestrogen in plasma of patients with PMS. In the present study, the plasma progesterone level in control group was 27.92 ± 12.63 and in study group 14.34 ± 20.98. So the luteal phase plasma progesterone levels were lower than in controls and their t value = 2.93, $P < .05$ were significant. Our results coincides with the result of Backstrom and Carstensen (1974) (Table II).

Plasma levels of FSH in control group was 9.33 ± 7.91 and it was 7.82 ± 3.61 in 100 women with premenstrual syndrome which is lower as control group but this decrease was not statistically significant ($P > 0.05$). This result was similar to the result of Kumar et al (1984) in contrast Backstrom et al 1976 found higher level of FSH in their PMS group in early luteal phase (Table III).

Mean ± SD value of LH was 25.33 ± 14.30 l.u/L in controls and 21.29 ± 17.0 l.u/L women with premenstrual tension. This difference was not statistically significant ($P > 0.05$) (Table IV).

The mean ± SD value of plasma prolactin in control group was 279.94 ± 59.4 and in study group was 424.65 ± 86.25. The level in study group was significantly higher ($P < 0.05$) than in control group (Table V). Our findings were comparable with those of Kumar et al (1984).

CONCLUSION

Premenstrual syndrome occurs in young unmarried women of higher socio-economic status. The main symptoms are headache, insomnia, weight gain and mastalgia. In luteal phase, there is statistically significant decrease in progesterone level and increase in prolactin level in women with premenstrual syndrome.

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