STUDY OF MENOPAUSAL SYMPTOMS AND OESTROGEN STATUS IN 400 PERIMENOPAUSAL WOMEN

by

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Introduction

Hot flushes and dyspareunia are two symptoms that are considered typical of oestrogen deficiency during the climacteric (Cope, 1976; Studd *et al*, 1977; Utian and Sen, 1976); and oestrogen therapy is often contemplated to relieve them. The object of the present enquiry was to study the occurrence of these symptoms in the perimenopausal years and to correlate these symptoms with the menstrual pattern and the oestrogen status of the women to avoid indiscriminate use of oestrogen replacement therapy (Doll *et al*, 1977).

Material and Methods

Four hundred women attending the perimenopausal clinic at the Mother and Child Hospital, Bombay, for routine check-up between January, 1973 and June 1978 were studied. Their symptoms, especially hot flushes and dyspareunia, were enquired into and their detailed history noted. Their age ranged between 35 and 55 years. Among these, 185 women (average age 40.44 years) were regularly menstruating, 107 women (average age 42.75 years) had irregular menses and 108 women (average age 47.76 years) had no menses for over a year.

The oestrogenic status was evaluated by serial smears taken from the upper one-third of the lateral vaginal wall, after administration of a chloramphenicol vaginal pessary for two consecutive days, and stained by a modified Papanicolaou method.

In the normally menstruating women, smears were taken from day eight to day twenty four. The maturation index was determined for the different smears.

In the irregularly menstruating group and the menopausal women, smears were taken on alternate days over a period of 30 to 40 days to ensure that any oestrogen spurt that occurred was noted.

The oestrogen status was classified as per our previous publication (Mehta 1978).

A. Good, KI 30.
B. Moderate, KI 11-30.
C. Slight KI 1-10.
D. Slight deficiency, intermediate cells only.
E. Moderate deficiency, intermediate + few parabasal cells.
F. Severe deficiency, parabasal cells only.

Results

The distribution of the menstrual pattern and oestrogen status of the 400 perimenopausal women, as studied by vaginal cytology is presented in Table I. Three hundred and thirty-one women (82.75%) showed varying degrees of

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TABLE I

Distribution of Menstrual Patterns and Oestrogen Status in 400 Perimenopausal Women

	Oestrogen Effect 331 (82.75%)			Oestrogen Deficiency 69 (17.25%)		
	Good (KI >30)	Moderate (KI 11-30)	Slight (KI 1-10)	Slight (Int. cells present	Moderate (Int. + few parabasal cells)	Severe (parabasal cells)
	161	99	71	26	5	38
Regular 185	106	63	12	4	—	—
Irregular 107	40	23	34	4	1	5
Menopause 108	15	13	25	18	4	33

oestrogen effect, and 69 women (17.25%) varying degrees of oestrogen deficiency. A striking observation is that 53 women out of 108 (49%), though they were in menopause, showed oestrogen effect in vaginal smears. Except 10 cases among 107 women with irregular menses, all had oestrogenised smears. Thus not all menopausal women may show oestrogen deficiency.

Hot flushes were present in 113 (28.25%) women (Table II) and dyspareunia in 27 (7.25%) (Table IV). The correlation of hot flushes with menstrual pattern and oestrogen status is observed in Table II. Two very conspicuous observations are that, 84 women inspite of having some circulating oestrogens had experienced hot flushes; and, amongst these, 31 were regularly menstruating.

In contrast, despite oestrogen deficiency, 40 women (including 20 menopausal women with atrophic smears) never suffered from hot flushes (Table III).

TABLE II

Distribution of 113 Cases With Hot Flushes in the Different Menstrual Patterns and Oestrogen Status Groups

	Oestrogen Effect 84 (25.37)			Oestrogen Deficiency 29 (42)		
	Good 45 (27.95)	Moderate 19 (19.19)	Slight 20 (28.16)	Slight 10 (38.46)	Moderate 3 (60)	Severe 16 (42.10)
Regular 31 (16.75)	21 (19.8)	7 (11.11)	2 (16.66)	1 (25)	— (—)	— (—)
Irregular 33 (30.84)	14 (35)	9 (39.13)	7 (20.58)	— (0)	— (0)	3 (60)
Menopausal 49 (45.37)	10 (66.66)	3 (23.07)	11 (44)	9 (50)	3 (75)	13 (39.40)

Figures in parenthesis indicate percentage out of total number in that group.

TABLE III

Distribution of 287 Cases with Absence of Hot Flushes in the Different Menstrual Patterns and Oestrogen Status Groups

	Oestrogen Effect 247 (74.62)			Oestrogen Deficiency 40 (58)		
	Good	Moderate	Slight	Slight	Moderate	Severe
	116	80	51	16	2	22
	(72.05)	(80.81)	(71.84)	(61.54)	(40)	(57.30)
Regular	85	56	10	3	—	—
154	(80.20)	(88.89)	(83.34)	(75)	(—)	(—)
(83.25)						
Irregular	26	14	27	4	1	2
74	(65)	(60.87)	(79.42)	(100)	(100)	(40)
(69.16)						
Menopausal	5	10	14	9	1	20
59	(33.33)	(76.93)	(56)	(50)	(25)	(60.6)
(54.62)						

Figures in parenthesis indicate percentage out of total number in that group.

TABLE IV

Distribution of 27 Cases of Dyspareunia in the Different Menstrual Patterns and Oestrogen Status Groups

	Oestrogen Effect 25			Oestrogen Deficiency 2		
	Good	Moderate	Slight	Slight	Moderate	Atrophic
	9	10	6	—	—	2
	(5.59)	(10.10)	(8.45)	(—)	(—)	(5.26)
Regular	5	5	3	—	—	—
13	(4.72)	(7.94)	(25)	(—)	(—)	(—)
Irregular	3	3	2	—	—	1
9	(7.5)	(13.04)	(5.88)	(—)	(—)	(20)
Menopause	1	2	1	—	—	1
5	(6.66)	(15.38)	(4)	(—)	(—)	(3.03)

Figures in parenthesis indicate percentage out of total cases in that group.

Out of the total 400 women examined, only 27 suffered from dyspareunia (Table IV). An unexplainable fact remained that 25 out of these 27 women had some circulating oestrogens.

The first occurrence of hot flushes in relation to the duration of the menopause is shown in Fig. 1. Dewhurst (1976) and Jaszmann (1976) believe that vasomotor symptoms may last for between 1 to 5 years post menopause.

Discussion

It is very tempting for any gynaecologist to initiate oestrogen replacement therapy in patients presenting with hot flushes and dyspareunia. These symptoms in the premenopausal women pose a problem for the choice of therapy. Utian (1977) also has reported that hot flushes can precede the menopause. Studd *et al* (1977) report that 20% of

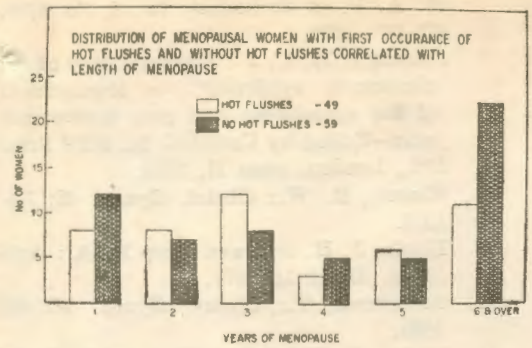

Fig. 1

the 300 patients attending the menopausal clinic for treatment of climacteric symptoms were still menstruating and had been already treated with tranquilizers and antidepressants. He also found that 25 (41.6%) of 60 premenopausal women, complained of hot flushes. In our study 64 (21.9%) out of the 292 premenopausal women had hot flushes (Table II).

Hutton *et al* (1978) who estimated hourly plasma oestrogen levels over a period of 24 hours reported that bouts of hot flushes did not coincide with the rise and fall of plasma oestrogen.

The above data show very clearly that there is no correlation between oestrogen status and the climacteric symptoms as was found by Chapman *et al* (1976), Gordon (1976), Llusia and Van Keep (1977) and Stryker (1977).

It also cannot be explained why hypophysectomised patients, with hypopituitarism, prepubertal girls and patients with primary gonadal failure, all of whom have low oestrogen levels, rarely experience these symptoms. Yet the hot flushes can be arrested by administration of low amounts of oestrogen (Studd *et al* 1975).

The average age of women with irregular cycles is 42.75 years, while the average age of menopause derived from our data is 44.89 years with S.D. of±5.21. This age interval is the critical transition period when women voluntarily seek the advice of the gynaecologists. Though these women often have a complaint of hot flushes, the gynaecologist should be careful in administering oestrogen replacement therapy as it may prove harmful in some women who may have pre-existing endometrial hyperplasia (Mehta 1978). For several years in post menopausal women Chapman *et al* (1976), Masukawa (1960), Mehta (1978) and Meisels (1966) have found oestrogen effect in vaginal smears. Untoward endometrial pathology (Kistner 1976 and Stryker 1977) may occur with unopposed exogenous estrogen therapy particularly in cases already having endogenous oestrogen.

Conclusion

No correlation was found between oestrogen status, menstrual pattern and the climacteric symptoms (hot flushes and dyspareunia).

Thus in women complaining of hot flushes and dyspareunia, oestrogen deficiency must be established before initiation of any oestrogen replacement therapy.

Summary

Four hundred perimenopausal women were studied for climacteric symptoms, oestrogen deficiency and their menstrual pattern. There was no correlation of the menopausal symptoms with estrogen status or menstrual pattern in the perimenopausal women. Hot flushes and dyspareunia can be experienced in premenopausal regularly menstruating women. At the same time women showing oestrogen deficiency may not present any menopausal symptoms. The precise pathogenesis of hot flushes has not yet

been elucidated. Occurrence of hot flushes in premenopausal age and non-occurrence of hot flushes in menopausal women with atrophic smears may be explained in future, by more information on oestrogen receptors and their mechanism of action on the target tissues.

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