



## **EVALUATION OF WOMEN FOLLOWING HYSTERECTOMY WITH AND WITHOUT CONSERVATION OF OVARIES**

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### **ABSTRACT**

The onset and nature of different postmenopausal symptoms and hormonal status in women following hysterectomy with and without conservation of ovaries has been studied. Forty patients aged 35-50 years, who had undergone hysterectomy (abdominal or vaginal) for benign indications, within last five years were selected. 20 patients had undergone hysterectomy with bilateral salpingo-oophorectomy (BSO) and the rest 50% had undergone hysterectomy with conservation of both ovaries. These two groups of women were followed up by clinical symptoms (vasomotor, urogenital, psychological), hormonal evaluation (serum FSH, LH and estradiol) and measurement of bone density. 50% of the patients became symptomatic (vasomotor) within one year following hysterectomy with BSO whereas 40% within there to five years in the ovarian conservation group. Psychological symptoms developed in 25% cases in hysterectomy with BSO group and 20% cases in ovarian conservation group but genitourinary symptoms developed in 25% cases in both the groups. There was acute rise of both FSH and LH in hysterectomy with BSO group within one year of operation but in ovarian conservation group, FSH and LH started to rise after one year of operation. It was reverse in case of estradiol. Bone densitometry showed osteoporosis in 30% hysterectomised women with BSO whereas in 25% of women in ovarian conservation group.

From the present study, it is clearly evident that most of the menopausal symptoms and hormonal changes developed earlier in hysterectomy with BSO group but gradually the scenario become almost same in both the groups of hysterectomy within there to five years of operation. So basically the clinical, metabolic and hormonal milieu assume the same status in both the groups within three to five years of operation.

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## **INTRODUCTION**

Hysterectomy is the second most common major operation after caesarean section<sup>1</sup> in the field of Obstetrics & Gynaecology. Following hysterectomy women enter into the phase of menopause. Menopause is derived from the Greek word Men (month) and Pao (to stop) i. e. cessation of menstruation natural or iatrogenic. Women are regarded as postmenopausal only if they had experienced estrogen deficiency symptoms, amenorrhoeic for more than six months and serum F.S.H. greater than 40 iu / L.

### **Objectives**

The aims of the present study were –

- (i) To compare the date of onset and varied presentations of different postmenopausal symptomatology and behavioural patterns in women following hysterectomy with and without conservation of ovaries.
- (ii) To find out hormonal, biochemical and metabolic status between these two groups of women and
- (iii) To note the ovarian function after hysterectomy, where ovaries were preserved.

## **EXPERIMENTAL**

### **Materials and methods**

The study was conducted in the Department of Gynaecology & Obstetrics, Calcutta National Medical & Hospital. Forty patients aged between 35 to 50 years, who had undergone hysterectomy either abdominally or vaginally, were selected from indoor admission & follow up clinics of out patient department. Indications of operation were leiomyomas, genital prolapse, dysfunctional uterine bleeding (DUB) and endometriosis. Equal number of age-matched women (20 patients in each group), who had undergone hysterectomy with bilateral salpingo-oophorectomy (Group A) and with conservation of both ovaries (Group B), were recruited for the study.. All the women, who had irregular menstruation before operation, genital malignancy and co-existent any other significant medical disease like diabetes, hypertension, and endocrine disorders were excluded from the study. Patients who had undergone hysterectomy within five years and were not under any hormone replacement therapy (HRT) are included in this study. These two groups of women were followed up to note clinical parameters of menopausal symptoms like

vasomotor, urogenital, psychological, and symptoms of osteoporosis; and to evaluate hormonal status (serum FSH, LH and estradiol ). Measurement of bone density and ultrasonic evaluation of conserved ovaries were also performed. Results were analyzed and compared.

## RESULTS AND DISCUSSION

50% (10 out of 20) of the patients in Group A, following hysterectomy with bilateral salpingo-oophorectomy (BSO) develops postmenopausal symptoms compared to 40% of the patients in Group B, with conserved ovaries.

**Table 1. Total number of cases and its distribution in different age groups**

Groups of patients	No of cases (Percentage)	35-40 years	41-45 years	46-50 years
Group A (with BSO)	20 (50%)	5	7	8
Group B (with OVC)	20 (50%)	12	4	4

BSO = Hysterectomy with bilateral salpingo-oophorectomy

OVC = Hysterectomy with conservation of both the ovaries.

**Table 2. Study of symptomatic patients in relation to duration of hysterectomy**

Groups	0-1 years		1-3 years		3-5 years		Total patients symptomatic	
	N	%	N	%	N	%	N	%
Group A with BSO*	6	50	3	75	1	25	10	50
Group B without BSO**	3	25	2	50	3	75	8	40

\*Bilateral salpingo-oophorectomy

\*\*Conserved ovaries

**Table 3. Comparison of different types of symptoms between two groups**

Symptoms	Group A	Group B
Vasomotor	50%	40%
Genitourinary	25%	25%
Psychological	25%	20%
Osteoporosis	30%	25%

**Table 4. Distribution of cases according to symptoms in different age groups in different types of hysterectomy****Hysterectomy with BSO**

Symptoms	No. of patients in different age groups			
	35-40 years	41-45 years	46-50 years	Total (%)
	<b>5</b>	<b>7</b>	<b>8</b>	<b>20</b>
Vasomotor	4	3	3	10 (50%)
Genitourinary	-	2	3	5 (25%)
Psychological	3	1	1	5 (25%)
Osteoporosis	1	1	4	6 (30%)

**Hysterectomy with OVC**

Symptoms	No. of patients in different age groups			
	35-40 years	41-45 years	46-50 years	Total (%)
	<b>12</b>	<b>4</b>	<b>4</b>	<b>20</b>
Vasomotor	5	2	1	8 (40%)
Genitourinary	-	2	3	5 (25%)
Psychological	2	1	1	4 (20%)
Osteoporosis	-	2	3	5 (25%)

**Table 5. Study of hormonal profiles between these two groups**

Hormones	Years after operation	Mean value in	
		Group A	Group B
F.S.H. (IU/L)	0-1 year	50.4	16.2
	1-3 year	62.5	35.6
	3-5 year	75.6	69.2
L.H. (IU/L)	0-1 year	48.8	20.4
	1-3 year	65.4	37.5
	3-5 year	79.8	65.5
Estradiol (pg/mL)	0-1 year	15.4	80.8
	1-3 year	12.5	50.3
	3-5 year	12.2	15.5

**Table 6. Bone densitometric study of the patients**

Groups	Total patients	Normal (0 to -1 S.D.)	Osteopenic (-1 to -2.5 S.D.)	Osteoporosis (< -2.5 S.D.)
Group A	20	11 (55 %)	3 (15 %)	6 (30 %)
Group B	20	13 (65 %)	2 (10 %)	5 (25 %)

Maximum number of the patients became symptomatic within one year following hysterectomy with BSO whereas the women of ovarian conservation group took three to five years following operation to experience the symptoms. In both the groups, vasomotor symptoms, mainly hot flush, was the most common symptom. It developed in younger patients (35-40 years of age) but severity of symptoms were much less in Group B. Psychological symptoms developed in 25% cases in Group A and 20 % cases in Group B but genitourinary symptoms developed in 25% cases of both the groups. There was significant difference in FSH, LH and estradiol between these two groups within one year of operation. There was acute rise of both FSH and LH in hysterectomy with BSO group within one year of operation but in Group B, FSH and LH started to rise after one year of operation. Interestingly, within three to five years, the hormonal levels became almost equal in both the groups. In hysterectomy with BSO group, mean FSH and LH within one

year of operation were 50.4 I.U./L and 48.8 I.U./L, respectively where as in hysterectomy with ovarian conservation group, these were 16.2 I.U./L and 20.4 I.U./L. In the former group, there was a sharp fall of estradiol (15.4 pg/mL) within one year of operation but in the latter group estradiol (80.8 pg/mL) was within normal limit during this period. Bone densitometric study showed in group A, 55% of subjects were normal, 15% osteopenic and 30% osteoporotic whereas in group B, 65% normal, 10% osteopenic and 25% osteoporotic. USG study of conserved ovaries failed to extract any conclusive data.

50% of the patients were symptomatic following hysterectomy with BSO whereas 40% of the patients were symptomatic in the ovarian conservation group. According to Askel et al.<sup>2</sup> immediate symptoms specially hot flushes occurred in 37-50% of cases following bilateral oophorectomy in premenopausal women, which is in accordance with our study. But Defazio et al.<sup>3</sup> documented 76% cases of menopausal symptoms after oophorectomy .

In present study, most common symptom was hot flush which is also in accordance with several studies done by Thomson et al., Hammer et al. and Richards<sup>4</sup>.

In our study, psychological symptoms developed in 25% cases in hysterectomy with BSO group and 20 % cases in ovarian conservation group. The study done by Martin et al.<sup>5</sup> showing the incidence of depression was higher after bilateral oophorectomy than hysterectomy with ovarian conservation. The study of Perlstein<sup>6</sup> showed that in the absence of adequate HRT, simultaneous bilateral oophorectomy enhanced depression though in some reports (Ryan et al.<sup>7</sup>), concurrent bilateral oophorectomy has shown no increase in depression when compared to hysterectomy. The longitudinal study of premenopausal women was done by Everson et al.,<sup>8</sup> which indicated that hysterectomy with or without oophorectomy was not associated with a negative psychological impact among middle aged women. At present, no firm data support the view that natural menopause cause depression .

In this study, genitourinary symptoms, mostly affecting aged persons developed in 25% of cases in both the groups. The study of Greendale et al. <sup>9</sup> showed that 10-40% of all postmenopausal women had urogenital symptoms. Another study done by Van Geelen et al.<sup>10</sup> showed that 27% women complained of vaginal dryness, soreness and dyspareunia where as 36% complained of urinary symptoms such as leakage and recurrent infections.

In group A, mean FSH and LH within one year of operation were 50.4 I.U./L and 48.8 I.U./L, respectively where as in Group B, these were 16.2 I.U./L and 20.4 I.U./L. The

difference gradually decreased and within three to five years, the hormone levels of these two groups became almost equal. In group A, there was a sharp fall of estradiol (15.4 pg/mL) within one year of operation but in group B, estradiol (80.8 pg/mL) was within normal limit during this period. Within three to five years of operation, estradiol level in ovarian conservation group became almost equal to that in hysterectomy with BSO group. Laughlin et al.<sup>11</sup> also showed that in women, who had undergone hysterectomy with bilateral oophorectomy, total estradiol levels tend to be lower but oophorectomy status did not affect levels of bioavailable estradiol, estrone, or SHBG.

## CONCLUSION

From the study, it is clearly evident that most of the menopausal symptoms developed earlier with marginally greater frequency and comparatively greater severity in hysterectomy with BSO group during immediate post-operative follow up periods but gradually the clinical pictures become almost same in both the groups of hysterectomy within three to five years of operation. Hormonal levels also reveal an acute and abrupt change immediately after hysterectomy with BSO but within three to five years, the levels are almost same in both the groups. So basically the internal environment, clinical profile and hormonal milieu assume the same proportion in the two groups within three to five years post-operatively.

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