OVARIAN FUNCTION FOLLOWING ABDOMINAL HYSTERECTOMY WITH AND WITHOUT UNILATERAL OOPHORECTOMY

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Introduction

The ovaries have a significant role in endocrine function not only during the reproductive years and perimenopause but also in the postmenopausal stage. The question as to whether normal ovaries should be removed or preserved during abdominal hysterectomy in pre-menopausal women has not yet been resolved. There is no consensus concerning the removal or conservation of the ovaries, nor whether there should be a cut-off age. The main problem associated with conservation of the ovaries is that ovarian cancer may subsequently develop. However, cessation of ovarian function is associated with an increased risk of osteoporosis and coronary artery disease. Other complaints, which are associated with lack of estrogen production, include vasomotor hot flushes, urogenital, anal or sexual dysfunction, and emotional disturbances.

Aim of the work

was to compare residual ovarian function after abdominal hysterectomy with preservation of one or both ovaries.

Patients and Methods

PATIENTS: This is a prospective study which was conducted on 70 patients undergoing abdominal hysterectomy.

Following informed consent, detailed benefit of retaining one or both ovaries, the patients were allocated randomly after approval to be included in the study and sequentially into two groups:

Group I:

Those who had total abdominal hysterectomy with bilateral salpingectomy and unilateral oophorectomy and this group comprised 35 patients.

Group II:

Those who had total abdominal hysterectomy with bilateral salpingectomy with preservation of both ovaries and this group comprised 35 patients.

Inclusion Criteria:

-Aged around 45 years.

-Undergoing total abdominal hysterectomy for bengin lesions.

Exclusion Criteria:

-Malignancy. - Postmenopausal women.

-Any patient in this study presented gonadotropin levels within the postmenopausal range before surgery, and none of them took exogenous hormones before or during the study.

- Family history of ovarian cancer, breast cancer, colorectal cancer and BRCA gene mutation.

-Ovarian lesions.

-No patients were lost on follow-up.

METHODS: *All patients in the study were subjected to the following preoperative, 1, 3 and 6 months after the operation:*

• Detailed medical history including symptoms of menopause.

• Clinical examination.

• Ultrasound examination using Trans-vaginal ultrasound to detect if there is ovulation or development of any ovarian lesion.

• Measurement of the level of serum FSH in the follicular phase.

• Measurement of the level of serum estradiol (E2).

Disturbed ovarian function is categorized if FSH level in follicular phase more than 20 mIU/ml and E2 level less than 20 pg/ml.

Results

Table 1: Comparison between the levels of serum FSH in the two studied groups

Serum FSH	TAH + USO (n = 35)	TAH only (n = 35)	p
Preoperative			
Min. – Max.	10.0 –13.64	6.14 –14.27	0.069
Mean ± SD.	11.47 ±1.12	10.64 ±2.42	
postoperative			
1 month			
Min. – Max.	10.93 –20.15	6.28 –14.44	<0.001*
Mean ± SD.	12.97 ±1.52	10.79 ±2.47	
3 months			
Min. – Max.	12.12 –27.74	6.56 –14.82	<0.001*
Mean ± SD.	16.94 ±5.04	11.03 ±2.54	
6 months			
Min. – Max.	13.44 –43.08	6.73 –14.96	<0.001*
Mean ± SD.	21.33 ±9.45	11.23 ±2.59	

TAH: total abdominal hysterectomy **USO:** unilateral salping-oophorectomy **SD:** Standard deviation
p: p value for comparing between the two studied operations. *: Statistically significant at $p \leq 0.05$

Table 2: Comparison between the levels of serum estradiol (E2) in two studied operations

Serum estradiol (E2)	TAH + USO (n = 35)	TAH only (n = 35)	p
Preoperative			
Min. – Max.	46.44 –192.1	61.35 –228.2	0.304
Mean ± SD.	137.3 ±34.07	151.6 ±51.96	
postoperative			
1 month			
Min. – Max.	19.73 –145.2	57.96 –225.1	<0.001*
Mean ± SD.	101.2 ±27.61	148.4 ±54.50	
3 months			
Min. – Max.	16.73 –122.4	51.77 –223.7	<0.001*
Mean ± SD.	58.53 ±32.10	141.5 ±57.34	
6 months			
Min. – Max.	12.16 –85.0	50.50 –221.1	<0.001*
Mean ± SD.	41.46 ±23.36	137.1 ±58.71	

TAH: total abdominal hysterectomy
USO: unilateral salping-oophorectomy
SD: Standard deviation
p: p value for comparing between the two studied operations.
*: Statistically significant at $p \leq 0.05$

Table 3: Distribution of the studied cases according to ovarian function in both groups

Ovarian function	TAH + USO (n = 35)		TAH only (n = 35)	
	No.	%	No.	%
Normal (FSH after 6m ≤20)	23	65.7	35	100%
Disturbed (FSH after 6m >20)	12	34.3	0	0

TAH: total abdominal hysterectomy
USO: unilateral salping-oophorectomy

Conclusion

- Unilateral oophorectomy during abdominal hysterectomy for benign reasonsmay be conducted after discovering accidentally intraoperative an apparently unhealthy ovary or pathological lesion or adhesion on one side which made conservation not feasible.
- Six months following an abdominal hysterectomy and unilateral oophorectomy, 34% of patients experienced reduced ovarian function. On the hand, none of the individuals who had both conserved ovaries displayed ovarian dysfunction after 6 months of operation. Bilateral ovarian conservation seems to be better than unilateral oophorectomy.