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**The effect of serum obtained before and after treatment for endometriosis on
in vitro fertilization rate of mouse oocyte**

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=Abstract=

The purpose of this study is to determine the effects of the serum obtained from patients diagnosed with endometriosis before treatment with the serum of these patients after treatment on developing mouse oocytes. Eleven patients diagnosed with endometriosis were selected randomly. All patients underwent laparoscopic or conservative surgery and postoperatively were followed with a 6-month course of buserelin acetate of 900µg/d. Pretreatment and posttreatment serum supplements from the patients with endometriosis were obtained and the effects of these serum on the fertilization and development on mouse oocytes were analyzed. The total number of fertilization after 24 hours and embryos that reached blastocyst stage after 72 hours of incubation were compared. Results were compared with the Student T-test analysis. In the group of pretreatment serum supplements, 47% of oocytes were fertilized and 31% of embryo reached blastocyst stage. The other group of posttreatment serum supplements showed significant increases in total fertilization and blastocyst development, especially in the patients diagnosed with stage I and stage II endometriosis.

In conclusion, the results of serum samples from endometriosis patients suggests the toxicity on fertilization and embryo development decreases after treatment.

Key words: Endometriosis/ Serum supplements/ Mouse oocyte and embryo.

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가 가 가 가 가

가 5.2% 38.5%

가 , 가 , 가 가 가

가 Interleukin-I

가 가 가

(Luteinized unruptured follicle syndrome)

가 가

1.

The American Fertility Society revised classification system

11 , 1 2 , 4 , 3
 , 2 가 5 32 (25-39)
) 3 2 2 6
 (Busereline acetate 900µg/d, Suprecur, Hoechst, Tokyo,Japan) 1
 15 3000rpm
 50°c 45 가 0.2µm filter -
 30°c

2.

10 B6C3F1
 PMSG(pregnant mare serum gonadotropin) 5 IU 48 hCG(humen chorionic gonadotropin) 5 IU . hCG 15
 가 TYH
 300µl drop 37°c 5%CO2 30
 1 10 B6C3F1 1 10⁶
 37°c 5%Co2 1 10⁶
 drop 4 washing MWM300 µl culture drop MWM 160 µl drop washing
 37°c 5%Co2 72

3.

24 2
 72
 Students T-test
 P 0.05 가

가 MWM
 가 MWM
 가

2 group
 , 24 72 11 5

가
 가
 Table 1

Table 2, Table 3, Table 4, Table 5
 가 Table 1 254 5

가 TYH MWM
 가 TYH MWM 230 2 group
 , 11 가 TYH MWM 441

가 MWM 24 254 215 가
 85% 72 134 53%
 230 24 187 가 81% 가 MWM
 56% 72 128
 가 TYH MWM 441
 가 211 가 47% 441 가 138 가 31%

Table 2
 Stage Stage 11
 , Table 3 Stage Stage

Table 3
 가 74 43 가 58% Stage 137 70 가 Stage 162 73
 가 45% Stage 68 34 가 50% Stage 51%

Stage Stage 97 64 가 66% Stage 128
 Stage 92 가 158 96 가 61% Stage 72 48 가
 67% Stage , , ,

가
 Table 4
 Table 5 1 4 11 1 4 1
 Table 5 28% 1
 74 25 48% 2
 97 47 162 40 25% 47%
 158 75 38% 43%
 3 137 52 31%
 128 55 34%
 4 68 21
 72 27
 1

P-value 0.05 P-value 가

0.05 .

가 .

가
가

가

가

가

¹
4 가

5

²

³

가

⁶

가

“(inhibitory factor)”

⁷⁻⁸

가

⁹⁻¹⁰

¹¹⁻¹²

¹³

가

CA-125,¹⁴ Interleukin -1,¹⁵ ovum capture inhibitor,¹⁶ Pregnancy protein 14^{12,17}

가

¹⁸

가

가

1996 1998 3

11

1. 가 가 M.W.M. 가 가 M.W.M. 가

2. :2 , :4 , :3 , :2) 6 (1

3. 가 (:2 , :4 , :3 , :2) 6 가

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Table 1. The effect of serum from women with endometriosis and control group on fertilization and early embryonic development.

Serum source	No.women	No. oocyte	Fertilization % & (No.)	Development % & (No.)
M.W.M		254	85 (215/254)	53 (134/254)
Fertile women	5	230	81 (187/230)	56 (128/230)
Endometriosis	11	441	47 (211/441)	31 (138/441)

Table2. Pretreatment and posttreatment fertilization in MWM medium with serum supplement in each patient with endometriosis.

Stage	Patient	No. oocyte		Fertilization	
		Pretreatment	Posttreatment	Pretreatment % & (No.)	Posttreatment % & (No.)
	a	39	45	38(15/39)	60(27/45)
	b	35	52	48(19/35)	71(37/52)
	c	37	30	54(20/37)	76(23/30)
	d	40	48	30(12/40)	52(25/48)
	e	43	36	53(23/43)	75(27/36)
	f	42	44	42(18/42)	63(28/44)
	g	40	40	42(17/40)	65(26/40)
	h	47	46	53(25/47)	74(34/46)
	i	50	42	56(28/50)	76(32/42)
	j	30	40	43(13/30)	67(27/40)
	k	38	44	55(21/38)	56(25/44)

Table 3. Pretreatment and posttreatment fertilization in MWM medium with serum supplement in patient with endometriosis of stage

Stage	No. women	No. oocyte		Fertilization	
		Pretreatment	Posttreatment	Pretreatment % & (No.)	Posttreatment % & (No.)
All	11	441	455	47(211/441)	65(300/455)
	2	74	97	58(43/74)	66(64/97)
	4	162	158	45(73/162)	61(96/158)
	3	137	128	51(70/137)	71(92/128)
	2	68	72	50(34/68)	67(48/72)

P < 0.05 versus stage , , and .

Table 4. Pretreatment and posttreatment embryo development in MWM medium with serum supplement in each patient with endometriosis.

Stage	Patient	No. oocyte		Development % & (No.)	
		Pretreatment	Posttreatment	Pretreatment	Posttreatment
	a	39	45	25 (10/39)	46(21/45)
	b	35	52	28(10/35)	50(26/52)
	c	37	30	22(8/37)	47(14/30)
	d	40	48	32(13/40)	54(26/48)
	e	43	36	18(8/43)	39(14/36)
	f	42	44	26(11/42)	47(21/44)
	g	40	40	32(13/40)	40((16/40)
	h	47	46	43(20/47)	45(21/46)
	I	50	42	38(19/50)	42(18/42)
	j	30	40	33(10/30)	40(16/40)
	k	38	44	29(11/38)	34(11/44)

Table 5. Pretreatment and posttreatment embryo development in MWM medium with serum supplement in patient with endometriosis.

Stage	No. women	No. Oocyte		Embryo development	
		Pretreatment	Posttreatment	Pretreatment	Posttreatment
All	11	441	455	31 (138/441)	41 (208/455)
	2	74	97	28 (25/74)	48 (47/97)
	4	162	158	25 (40/162)	47 (75/158)
	3	137	128	38 (52/137)	43 (55/128)
	2	68	84	31 (21/68)	34 (27/84)

P < 0.05 versus Stage I and
p > 0.05 versus Stage and

