

The Comparison of Clinical Outcomes between GnRH Agonist Long Protocol and GnRH Antagonist Short Protocol in Oocyte Donation Cycles

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Objective: To assess and compare the clinical outcomes between GnRH agonist long protocol and GnRH antagonist short protocol in oocyte donation program.

Materials and Methods: Of total 18 oocyte donation cycles, controlled ovarian hyperstimulation (COH) were performed with GnRH agonist long protocol and GnRH antagonist short protocol in initial 9 cycles and later 9 cycles, respectively. Oral estradiol valerate and progesterone in oil were administered to all recipients for endometrial preparation. Oral estradiol administration was started from donor cycle day 1 after full shut down of gonadal axis with GnRH agonist in patients with ovarian function. Progesterone was injected from oocyte retrieval day of donor initially, then continuously till pregnancy 12 weeks if pregnancy was ongoing. We compared the parameters of clinical outcomes, such as number of the retrieved oocytes, fertilization rate, high grade embryo production rate, clinical pregnancy rate, implantation rate, ongoing pregnancy rate, COH duration, total gonadotropin dose for COH between GnRH agonist long protocol group and GnRH antagonist group. Statistical analysis was performed using Mann-Whitney test, $p < 0.05$ was considered as statistically significant.

Results: The number of retrieved oocytes, fertilization rate, high grade embryo production rate, clinical pregnancy rate, implantation rate, ongoing pregnancy rate were 14.89 ± 7.83 , 81%, 64%, 78%, 31%, 78%, respectively in GnRH agonist long protocol group and 11.22 ± 8.50 , 79%, 64%, 67%, 34%, 56%, respectively in GnRH antagonist group. There was no significant differences in parameters of clinical outcomes between 2 groups (all p value > 0.05). Duration and total gonadotropin dose for COH were 10.94 ± 1.70 days and 43.78 ± 6.8 vials in 18 cycles, 12.00 ± 1.73 days and 48.00 ± 6.93 vials in agonist group, 9.88 ± 0.78 days and 39.55 ± 3.13 vials in antagonist group, respectively. In GnRH agonist long protocol group, significantly longer duration and higher gonadotropin dose for COH were needed ($p = 0.012$).

Conclusion: In oocyte donation program, clinical outcomes from controlled ovarian hyperstimulation

18 mm 가 3 (IVF-C®, LG Chemistry) 10,000 , 35 X- , , 가 , B C , 300 4

7 (Cet-rotide®, Serono) 0.25 mg 18 mm 18 9 9 (>Grade 2), (> 20), 가 Veeck 가 grade 1, 10% Mann-Whitney p<0.05 (Zoladex®, 3.6 mg, Astra Zeneca) 2

Estradiol Valerate (Progy-nova®, Shering) 1 mg, 6 9 2 mg, 10 13 6 mg, 14 2 mg 4 mg 25 mg, 3 () 3~16% 50 mg 58 4~8 14 ?-hCG 12 Estradiol Valerate 4 mg 50 mg 34) 가 36 (26~ 4 , 1 18 6 , 4 , 3 , 2 , 3 , 3 , 0 , 4 , 1 , 1 , 3 , 0 (LH, FSH, E₂, Prolactin, TSH)

Table 1. Characteristics of distribution of oocyte donor

	GnRH agonist group	GnRH antagonist group	p value	Total
Mean age (range)	32.1 (27~36)	29.9 (21~34)	0.56	31.0 (21~36)
Hormonal profile				
LH (mIU/ml)	3.22 ±1.59	2.16 ±0.66	0.11	2.69 ±1.30
FSH (mIU/ml)	4.82 ±1.08	4.59 ±1.30	0.60	4.70 ±1.17
Estradiol (pg/ml)	47.55 ±18.37	36.38 ±15.77	0.13	41.97 ±17.57
Sister (younger)	2	4		6
Sister (elder)	3	1		4
Sister in law	3	1		4
Anonymous	0	3		3
Friend	1	0		1
Total	9	9		18

Table 2. Diagnostic distribution of recipients

	GnRH agonist group	GnRH antagonist group	Total
Mean age (range)	35.1 (28~47)	36.6 (31~48)	35.8 (28~48)
POF	3	2	5
Poor response to COH	3	2	5
Poor oocyte quality	0	2	2
Turner syndrome	1	1	2
Surgical absence	1	1	2
Repeat IVF failure	1	1	2
Total	9	9	18

27~36 (32.1), 21~34 (29.9) , 28~47 (35.1) , 31~48 (36.6) , 5 , 가 5 , 3.22 ±1.59 mIU/ml, 4.82 ±1.08 mIU/ml, 47.55 ±18.37 pg/ml, 가 2 , 2 , 가 2.16 ±0.66 mIU/ml, 4.59 ±1.30 mIU/ml, 36.38 ±15.77 pg/ml 가 2 , 가 2 (Table 1). 18 28~ 2 , 2 , 1 , 1 , 1 (Table 2).

Table 3. The comparison of parameters of clinical outcomes between GnRH agonist and antagonist groups

Parameters	Groups		p value	Total
	GnRH agonist group	GnRH antagonist group		
COH duration (days)	12.00 ±1.73	9.88 ±0.78	0.012	10.94 ±1.70
Gonadotropin dose (vials)	48.00 ±6.93	39.55 ±3.13	0.012	43.78 ±6.80
No. of retrieved oocyte	14.89 ±7.83	11.22 ±8.50	0.184	13.06 ±8.15
Fertilization rate (%)	81	79	0.691	80
High grade embryo production rate (%)	64	64	0.659	64
No. of pregnancy	7	6		13
Clinical pregnancy rate (%)	78	67	0.27	72
Implantation rate (%)	31	34	0.857	33
No. of abortion	0	1		1
Ongoing pregnancy rate (%)	78	56	0.09	67
Multiple pregnancy rate (%)	33	33		33

Described values: Mean ±SD

12.00 ±1.73 , 48.00 ±6.93 , 9.88 ±0.78 , 39.55 ±3.13 , (p=0.012). , (Table 3). 가 , 가 2% , 가 0.9% , 10 , 가 , 가 20~25% , 11-14

가
1,3,19

12 Cetorelix Ganirelix

1, 2, 3, 6, 10 1, 2, 3, 6, 8, 10

가 가 32~35

10,11 가 가 가 가

가 가 가 가

1,3,4,20 Moomjy 가

가 Yaron 가 가

가 가 가 가

가 가, 가 7,21

가 2~3 가

4 11,12,15,16

가 11~40 가

0.25 mg . Younis

3 mg 12~19 , Michalas 6~11

가 12,14,17,18 Yaron E₂ Valerate 가 ,

Remohí 65

가 2

가

가

가

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