

## Cetrorelix in ICSI Cycles of Women with one Ovary

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### INTRODUCTION

A significant number of single ovary women participate in programs of assisted reproductive technologies (ART) and consequently a number of studies have tried to answer whether these women have the same capability for conception comparing with women having both ovaries (1-10). In all these studies, the stimulation protocols included either clomiphane citrate (CC) and human menopausal gonadotropins (hMG) or gonadotropin releasing hormone agonists (GnRH-agonists) with hMG or recombinant follicular releasing hormone (rFSH). Recently, gonadotropin releasing hormone antagonists (GnRH-antagonists) have been introduced into the clinical practice, offering immediate suppression of serum luteinizing hormone (LH) and avoidance of the flare-up effect (11-16). So far, two GnRH-antagonists are available: cetrorelix and ganirelix. In the use of cetrorelix, two different stimulation protocols have been developed: the single dose protocol and the multiple dose one (11-16).

In the present study, the multiple protocol of cetrorelix was evaluated retrospectively in a group of women with one ovary.

### MATERIALS AND METHODS

Seven women with one ovary underwent 12 treatment cycles (group A). The control group (group B) included 39 treatment cycles from 31 women of comparable age. Male factor was the cause of infertility in all cases. In both groups, the ovarian stimulation protocol included suppression with the GnRH-antagonist cetrorelix (Cetrotide®, ASTA Medica AG, Frankfurt/Main, Germany and Serono International S.A., Geneva, Switzerland) in a multiple dose schedule (Lübeck protocol):

0.25mg per day from cycle day 6 onwards until ovulation induction. The stimulation was achieved with hMG (Menogon®, Ferring Arzneimittel GmbH, Kiel, Germany) or rFSH (Gonal-F®, Serono International S.A., Geneva, Switzerland). The administration of hMG/rFSH was individually adjusted according to serum estradiol levels and ovarian sonography. Ovulation was induced by injection of 10000 IU human chorionic gonadotropin (hCG) when the serum estradiol concentration increased to about 300-500 pg/ml per follicle >17mm. Oocyte retrieval was performed 36 hours following hCG injection.

Sperm preparation and Intracytoplasmic Sperm Injection (ICSI) were performed as previously described. (17,18). Embryo transfers were carried out 48 hours after oocyte retrieval. In each embryo transfer, according to the degree of embryos' fragmentation, the number of blastomeres and the regularity of blastomeres, the cumulative embryo score (CES) was calculated (19). Clinical pregnancies were defined by the presence of positive foetal heartbeats. In that case, progesterone was administrated up to 12<sup>th</sup> week of gestation.

### RESULTS

There were no significant differences in any of the analysed parameters between the two groups. In group A, 2 pregnancies were achieved and 4 children were born. In group B, there were 10 pregnancies and 9 children were born.

### CONCLUSIONS

Women with one ovary have the same response to multiple dose protocol of cetrorelix/hMG/rFSH as women having both ovaries; al-

though they have a lower, but not statistical significant, pregnancy rate.

Table 1

Comparison of ovarian response and ICSI/ET outcome between women with one ovary and women with two ovaries

	One ovary (group A)	two ovaries (group B)	p
No of cycles	12	39	
Age (years)	30.17±4.41	33.31±5.62	n.s.●
Cycles of poor response	3	9	n.s.#
Days of stimulation	11.22±1.48	11.25±2.78	n.s.*
No of gonadotropin ampoules	40.00±21.07	32.5±15.84	n.s.*
Peak estradiol (pg/ml)	1836.33±1439.97	1534.42±979.41	n.s.*
No of follicles	8.78±2.49	9.56±3.95	n.s.●
No of retrieved oocytes	6.58±4.1	6.54±3.32	n.s.●
No of 2PN oocytes	4.08±3.37	3.95±2.21	n.s.*
Fertilisation rate (%)	62.03	60.39	n.s.#
No of transferred embryos	2.17±1.19	2.41±0.68	n.s.*
CES	17.25±13.92	23.51±11.59	n.s.●
No of pregnancies	2	10	n.s.#
No of born children	4	9	n.s.#

All values are mean±SD deviation. ●: Student t-test was used. \*: K-S and U-test were used. #: Chi-square and v-square were used.

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