

P29 Analysis of Clinical Outcome of IVF-ET Program Using Human Immature Oocytes

Park EA, Lee DR, Lee ES, Eum JH, Kim HK, Cho JH, Cha KY, Yoon TK

Fertility Center of CHA General Hospital, CHA Research Institute, Pochon CHA University, Seoul, Republic of Korea

Objective: *In vitro* maturation-*in vitro* fertilization (IVM-IVF) program has now been successfully applied into human ART program. This research was conducted to evaluate the efficacy of IVM-IVF depended on patients or protocols.

Materials and Methods: The clinical outcome of 83 IVM-IVF cycles undertaken in the Fertility Center of CHA General Hospital, Seoul, Korea from July 2004 to March 2006 was analyzed retrospectively. Patients were classified into PCO and non PCO groups, and then the number of aspirated oocytes, maturation, fertilization and pregnancy results were analyzed. Also, clinical outcomes were compared according to non-stimulation or FSH/hCG priming.

Results: In total of 83 IVM-IVF cycles (59 cycles in PCO and 24 cycles in non-PCO patients), embryo transfer was failed in 5 cycles (1 cycle in PCO and 4 cycles in non-PCOS). The pregnancy and implantation rates in PCO group were higher than those of non PCO group (22/58 (37.9%) and 35/307 (11.4%) vs. 2/20 (10.0%) and 3/64 (4.7%)). In PCO patients, the number of retrieved oocytes in FSH priming group with low dose, hCG priming group and non-stimulation group were 14.7 ± 5.6 , 20.0 ± 10.0 and 16.4 ± 8.4 , respectively. The maturation rate at 48 hours after aspiration were 39.3% (168/427) and 52.7% (225/427) vs. 53.3% (225/422) and 62.3% (263/422) vs. 37.4% (43/115) and 53.1% (61/115), respectively. The fertilization rates of each group were 80.4% (135/168), 78.9% (176/225) and 79.1% (34/43), respectively. The pregnancy rate and implantation rate of priming groups with low dose of FSH (37.9% (11/29) and 15.1% (18/119)) or with hCG (40.9% (9/22) and 13.5% (12/89)) were higher than those of non-stimulation group (28.6% (2/7) and 6.5% (2/31)).

Conclusion: The IVM-IVF using immature oocytes have showed better efficiency in PCO patients than in non-PCO patients. And, application of FSH or hCG priming in PCO patients for IVM-IVF might be improved the oocyte maturation, pregnancy, and implantation.

P30 Effect of ejaculated sperm quality on clinical outcome in ICSI treatments

Lee SH¹, Choi SJ¹, Park YS¹, Seo JT², Song IO³, Koong MK³, Jun JH¹

¹Laboratory of Reproductive Biology and Infertility, ²Department of Urology, ³Department of OB/GYN, Cheil General Hospital, Sungkyunkwan University School of Medicine, Seoul, Korea

Objectives: Several reports have shown the paternal effects of defected spermatogenesis and poor quality of sperm on clinical outcomes in human ART cycles. The aim of this study was to find out whether the quality of ejaculated sperm has effects on fertilization rate, pronuclear (PN) morphology, embryo development, pregnancy outcome in ICSI treatments.

Materials and Methods: Data from 156 ICSI cycles with fresh ejaculated sperm were collected for this study. The patients were classified into normal ejaculated sperm (Normal-Sp) group (n=127) and poor ejaculated sperm (Poor-Sp) group (n=29), which has low sperm count ($< 10 \times 10^6$ sperm/ml) and/or poor motility ($< 20\%$ motile sperm). Fertilization was monitored 18-20 hours after ICSI, and PN feature was classified into three morphological patterns based on the number and distribution of nucleoli within PN at 18-20 hours and 24-26 hours after ICSI. Grade of embryonic quality was examined on the basis of developmental speed, size of blastomeres, and patterns of fragmentation. Sequential embryonic score (SES) was drawn from collection of PN and embryonic scores. Clinical outcomes were statistically compared between two groups.

Results: Mean fertilization rate of Normal-Sp group was significantly higher than that of Poor-Sp group ($76.9 \pm 20.0\%$ vs $62.7 \pm 19.1\%$, $p < 0.01$). In Normal-Sp group, sum of SES was 39.8 ± 13.9 , and mean SES of transferred embryos was 12.1 ± 3.6 . In Poor-Sp group, sum of SES was 40.4 ± 12.4 and mean SES of transferred embryos was 12.3 ± 2.8 . Mean age of female partners was similar between Normal-Sp (31.1 ± 2.2) and Poor-Sp group (30.4 ± 2.2). Clinical pregnancy and delivery rates per fresh ET cycle of Normal-Sp group (43.3% and 37.8%) were higher than those of Poor-Sp group (24.1% and 20.7%), respectively. However, overall delivery rates per patient, including subsequent frozen-thawed ET, were similar between two groups as 57.5% in Normal-Sp and 62.5% in Poor-Sp group.

Conclusions: Our data showed that sperm from Poor-Sp group had lower fertilization capacity than that of Normal-Sp group. However, the embryonic development and delivery outcome were not affected by poor quality of ejaculated sperm. Contrast to other studies, we could not find the late paternal effect of poor quality of ejaculated sperm on embryonic and fetal development in ICSI treatments.

Key words: Ejaculated sperm quality, ICSI, Fertilization, Embryonic development, Delivery