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Clinical Usefulness of Basal FSH as a Prognostic Factor in Patients undergoing Intracytoplasmic Sperm Injection

HD Chae, EH Kang, HS Chu, CH Kim, BM Kang, YS Chang.

Department of Obstetrics and Gynecology, College of Medicine, University of Ulsan, Asan Medical center, Seoul, Korea

Objective: To determine if basal serum follicle stimulating hormone (FSH) level could be a prognostic factor of the clinical outcome in in vitro fertilization and embryo transfer (IVF-ET) with intracytoplasmic sperm injection (ICSI) in the couples with male factor infertility

Materials and Method: From December 1995 to March 1998, total 118 patients with male factor infertility were included in this study. Patients were allocated to the low basal FSH group (<8.5 mIU/ml) and the high basal FSH group (≥8.5 mIU/ml). The basal levels of FSH were measured in the 3rd day of menstrual cycle preceding ovarian stimulation cycle in total IVF cycles by immunoradiometric assay (IRMA). Statistical analysis was performed using Student's t-test, Fisher's exact test, and χ^2 test as appropriate. Statistical significance was defined as $p < 0.05$.

Results: The total dose of exogeneous gonadotropin required in the patients of the high basal FSH group was significantly higher than that of the patients with the low basal FSH group ($p < 0.05$). The numbers of retrieved oocytes and oocytes with grade I, II were significantly higher in the low basal FSH group ($p < 0.05$). The clinical pregnancy rate per cycle in the low basal FSH group (15.7%) seemed to be higher than that in the high basal FSH group (3.4%) ($p = 0.08$), however, there was no statistically significant difference between the two groups.

Conclusion: These results suggested that the basal FSH levels could be predictive of pregnancy outcome and the results of ovarian stimulation in IVF-ET using ICSI.

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Prevention of recurrent abortion and delivery of normal baby from chromosome translocation carrier patient by preimplantation genetic diagnosis using fluorescence in-situ hybridization.

SI Roh, DR Lee, HR Paik, JH Cho and HS Yoon.

Infertility Research Center, YoungDong Jeil Hospital, Seoul, Korea.

Objective : Preimplantation Genetic Diagnosis (PGD) would allow selection of normal embryos prior to transfer during IVF-ET program. This offers a valuable alternative to a couple at high risk of having children with an inherited disease since it avoids the possibility of terminating an affected pregnancy. Furthermore, normal pregnancy by PGD can prevent damage of uterine endometrium from recurrent therapeutic abortion. The purpose of this study was to achieve normal pregnancy and to avoid repeated therapeutic abortion in Robertsonian translocation carrier.

Patients and Methods : This study was performed on the patient, 33 years old female with 45 XX t (14:21) Robertsonian translocation carrier. Husband was normal karyotype with 46 XY. The woman had been pregnant five times and had abortion four times. The first live born baby died of valvular heart disease at age of 2 years 3 months. The patient had spontaneous abortion three times and had a therapeutic abortion due to Down syndrome which was detected by prenatal genetic diagnosis. The patient underwent ovarian stimulation with GnRH analog /FSH/hMG/hCG and oocytes were retrieved. Oocytes were fertilized by intracytoplasmic sperm injection (ICSI) to obtain more fertilized eggs. One or two blastomeres from 8-cell stage embryos were taken for biopsy by micromanipulation. And, FISH was performed using 21 chromosome locus specific and 18 chromosome α-satellite probe in isolated blastomeres. Embryo of blastomere showed each two signal was transferred.

Results : Seven of 9 oocytes were fertilized by ICSI and after zygotes were cultured for 3 days. Blastomeres from five embryos at 8-cell stage were biopsied. After FISH, four of 5 blastomeres were aneuploidy. Only one was normal. The normal embryo was transferred in the uterus and became pregnant. Chorionic villi sampling was carried out at the 9th week of pregnancy and the fetus was diagnosed as 46 XY normal in karyotype. The patient delivered a healthy male baby by normal spontaneous vaginal delivery at the 38.5th week of pregnancy.

Conclusion : We present here a case report of pregnancy and delivery of normal baby from a chromosome translocation carrier patient, a couple with high risk of having children with chromosomal aneuploidy after successful PGD using FISH.