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FACTORS THAT MAY INFLUENCE PREGNANCY RATE IN AN INTRACYTOPLASMIC SPERM INJECTION (ICSI) PROGRAM.

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**Objectives:** To evaluate factors that may influence pregnancy rate in an ICSI program.

**Methods:** In 1997 we had 25 patients who went through oocyte retrieval and oocytes were found in them. Of these 21 had embryo formation. In 2 cases the embryos were cryopreserved because of fear of hyperstimulation. 19 patients had embryo transfer.

**Results:** Of 19 embryos transferred 6 had gestational sacs and 5 had fetal heart beat visualized on ultrasound. They were all singletons. Therefore the clinical pregnancy rate was 32% and ongoing pregnancy rate was 26% per transfer. In 10 patients half of the oocytes were subjected to ICSI and in 15 all of the oocytes were subjected to ICSI. Full ICSI was done for the patients with very low sperm count whereas half ICSI was done for people with different causes of infertility in whom it was felt that they may benefit from having ICSI as well. The ongoing pregnancy rate for the full ICSI was 47% and for half ICSI was 17%. These values were not statistically different with a P value of 0.28. The efficacy of the type of medication used for induction of ovulation was also investigated between a product with very high FSH value versus a product with a mixture of FSH and LH. The clinical pregnancy rate was 48% and 17% respectively but these were not statistically significant with a P value of 0.19. We also compared the effect of long term down regulation versus short term down regulation. The pregnancy rate was 48% and 17% respectively but the differences were not statistically significant with a P value of 0.16. Coefficient of correlation was calculated for previous gravida status and clinical pregnancy rate. The correlation appeared to be statistically significant but in an inverse manner. There was no correlation between peak estradiol value and clinical pregnancy rate. There also did not appear to be a correlation between patient's age and clinical pregnancy rate with a P value of 0.32. There was no correlation between sperm count and clinical pregnancy rate.

**Conclusion:** In this limited study we have demonstrated that some of the factors that may influence clinical pregnancy rate in standard IVF cycles may not apply to cycles with the use of ICSI.

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Pregnancy Rate after Intracytoplasmic Sperm Injection (ICSI) of Epididymal and Testicular Sperm.

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**Objectives:** ICSI with epididymal and testicular sperm can overcome male infertility for patients with azoospermia. In this study, we report our experience over the last two years.

**Design:** Retrospective analysis of 25 ICSI cycles with epididymal and testicular spermatozoa.

**Materials & Methods:** From July 1996 until April 1998, 22 patients with azoospermia ranging from purely obstructive (n = 17) to non-obstructive (n = 5) were accepted in our ICSI program. Active spermatogenesis was confirmed in all patients by an explorative testicular needle aspiration prior to their acceptance in our program. At the time of ICSI, the urologist performed epididymal or testicular needle aspiration, and/or testicular biopsy according to each patient's previous explorative findings. If no spermatozoa were immediately observed in the first sample, other epididymal/testicular samples were collected until the laboratory confirmed presence of spermatozoa. Testicular tissues were finely minced with micro-scissors and the resulting cellular suspensions were centrifuged through an 80% PureSperm layer to remove blood traces and non-dissociated testicular tissue. Epididymal aspirates were processed by centrifugation in a similar fashion. The resuspended cellular pellets were incubated as drops under oil until the ICSI procedure. Controlled ovarian stimulation was performed in all female partners using a long protocol of GnRH $\alpha$  desensitization with recFSH/hMG. ICSI was performed on all intact mature oocytes. Fertilization and embryonic cleavage were assessed 16-18 h and 42-44 h post sperm injection, respectively. Embryo transfers were performed ~ 44 h after sperm injection. Data were analyzed by Student's *t*-test and Fisher's exact test. All women and their children are followed for up to 2 years.

**Results:** Motile spermatozoa were retrieved in all cases. A total of 226 oocytes were injected and 141 of them were fertilized (62%). 24 embryo transfers were performed and 11 patients became pregnant (46%). No significant differences in fertilization, implantation and pregnancy rates were found between patients with obstructive azoospermia and those with non-obstructive azoospermia. To date, 6 babies have been born and no major anomalies were reported. Seven pregnancies are still ongoing, four in 3<sup>rd</sup> trimester, one in 2<sup>nd</sup> trimester and two in 1<sup>st</sup> trimester.

**Conclusion:** Performance of ICSI in these cases resulted in good fertilization and high embryo transfer rates. No fetal abnormalities were reported to date but our numbers are limited. We support the monitoring and screening of pregnancies as well as evaluation and follow-up of the newborns.