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Impact of Oocyte Denuding Time on Intracytoplasmic Sperm Injection Outcomes

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Objectives: Intracytoplasmic sperm injection (ICSI) is now very successful micromanipulation technique used in the assisted reproduction, especially in couples with severe male factor infertility. In preparation for ICSI, oocytes have to be denuded from cumulus and corona cells using a combination of enzymatic (hyaluronidase) and mechanical (pipetting) method. Although it is well known that the best IVF results are obtained when the oocytes are inseminated 2~6 hr after retrieval, there are controversies regarding the timing of oocyte denudation and microinjection in ICSI. The purpose of this study is to investigate the effect of timing of oocyte denudation and microinjection on ICSI outcomes and determine optimal denudation timing.

Methods: Retrospective analysis was done on 135 ICSI cycles performed in 2006 where the time of oocyte retrieval and denudation were recorded. We divided ICSI cycles into three groups according to the taking time from oocyte retrieval to denudation: group 1 included cases with <2 hr, group 2 included cases with ≥ 2 hr and <4 hr and group 3 included cases with ≥ 4 hr. And the minimum time after oocyte retrieval for microinjection is 3hr. Chi square and One Way ANOVA were used for statistic analysis.

Results: The mean age of the women (34.4 ± 3.4 , 34.7 ± 3.4 , and 34.1 ± 3.8 years respectively) and the number of retrieved oocytes (11.3 ± 6.9 , 10.1 ± 8.6 , and 11.1 ± 8.8 respectively) in each group did not differ statistically. Analysis of three groups showed no statistically significant differences in the rate of matured oocytes (80.1 ± 16.6 , 80.5 ± 19.3 , and $80.7 \pm 17.3\%$ respectively), fertilization rate (73.8 ± 19.0 , 74.1 ± 19.0 , and $73.9 \pm 20.3\%$ respectively), and pregnancy rate (31.3, 26.3, and 32.3% respectively).

Conclusion: Although it is clear that pre-incubation of oocytes prior to IVF induce cytoplasmic maturation that may eventually increase fertilization and pregnancy rates, this study shows conflicting finding the effect of pre-incubation time on ICSI. However, it is necessary to have optimal time for pre-incubation in ICSI as in IVF because too early injection makes it difficult to observe an pronuclei on proper time and too early injection results in in-vitro ageing.

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Risk of Birth Defects in Pregnancies Associated with IVF/ICSI: Ten Years Experience of a Single IVF Center

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Objectives: To determine the risk of birth defects in infants conceived through IVF/ICSI as compared with naturally