

**The relationship between the number of retrieved oocyte and clinical outcome
in *in vitro* maturation, *in vitro* fertilization and embryo transfer (IVM-IVF)**

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【Objective】 IVM-IVF is beneficial especially for PCO patients, because it can prevent OHSS and be performed with lower cost than conventional IVF/ICSI. Although the clinical outcome in IVM-IVF has been improved by various strategies lately, it is still not as good as conventional IVF/ICSI. It is important to determine what factors are related to pregnancy in IVM-IVF in order to improve the clinical outcomes. The present study was conducted to investigate the relationship between the number of immature oocytes retrieved and pregnancy in IVM-IVF.

【Design and Method】 IVM-IVF-Fresh ET was performed in 63 cycles (48 cases) from January 2008 to September 2011. Follicular monitoring was begun from cycle day 7, and FSH was administered until follicular size reached 8-10mm in diameter. HCG was administered 36 hours before retrieval. Immature oocytes retrieved were cultured for maturation for 26 hours. ICSI was performed on matured oocytes. Day 2 or day 3 embryos were transferred after assisted hatching. They were divided into three groups based on the number of immature oocytes retrieved as follows, 1-5 (Group A), 6-10 (Group B), and >11 (Group C). Various parameters were analyzed retrospectively.

【Results】 Group A (63.8%) was significantly higher in maturation rate than either Group B (43.4%) or Group C (48.8%). Group B (94.5%) and Group C (91.1%) were significantly higher in fertilization rates than Group A (82.4%). Significantly more transferrable embryos were obtained in Group B (1.33) and Group C (2.65) than Group A (0.42). Transfer cancellation rate was 47.4% in Group A, 33.3% in Group B and 21.7% in Group C. Group C was significantly lower in transfer cancellation rate than Group A. There were no significant differences among Group A (10.0%), Group B (28.6%) and Group C (44.4%) in clinical pregnancy rates per transfer. Clinical pregnancy rates per retrieval were 5.3% in Group A, 19.0% in Group B and 34.8% in Group C. Group C was significantly higher in pregnancy rate per retrieval than Group A.

【Conclusion】 The more oocytes are retrieved, the better embryos can be selected and transferred. It could result in a better pregnancy rate and surplus embryos could be cryopreserved. Therefore, it is important to decide the suitable timing for retrieval in order to obtain as many oocytes as possible to improve the pregnancy rate in IVM-IVF. However, several cases with a few immature oocytes retrieved achieved pregnancy. Therefore, it is suggested that IVM-IVF might be effective not only for PCO patients but also patients with repeated IVF failure with a few oocytes retrieved.