program in the recent years has been the selection of the best quality embryos to improve the pregnancy rates by transferring only one or two embryos for the least multiple pregnancies. Among the several researches which had been applied to the selection parameters of the best quality embryos, early cleaved embryos can be used as a good parameter for this selection process. In this study, we therefore prove early cleavage as the parameter to select the best-quality embryos by comparing the pregnancy rates when early cleaved embryos and non-early cleaved embryos were transferred.

Method: This study had been performed on 863 cycles in which 5 or more oocytes were retrieved; 448 cases (51.9%) of normal IVF cases and 415 cases (48.1%) of ICSI, in one of our two ART program laboratories from August 2005 to July 2006. Average age of female patients who had average of 1.8±1.24 cycles for the control group (CG: no cleavage checked) and 1.7±1.17 cycles for the observed group (OG: cleavage checked) with 13.8±7.18 (CG) and 13.6±6.76 (OG) aspirated oocytes per cycle in the study was 34.0±3.93 (CG) and 34.1±3.98 (OG) years old. On average, 3.6±0.68 (CG) and 3.6±0.66 (OG) embryos were transferred. First, the early cleavage of embryos had been determined after 24 hours of injection and 25 hours of insemination. Then, they were transferred after being cultured separately from the non-early cleaved embryos.

Results: In total of 863 cases, 184 cases of 423 control group cases (43.5%) were successfully conceived while only 188 cases of 440 cleavage-checked cases (42.7 %) did. However, the total pregnancy rates of cleavage-checked group was 25.7% (52 of 202 cases) for non-early cleaved embryos, 41.8% (41 of 98 cases) for 1-cleaved group, 64.8% (46 of 71 cases) for 2-cleaved group, and 71.0% (49 of 69 cases) for 3 or more-cleaved group ($p<0.05$), thus showing close correlation between the early cleavage rates and the pregnancy rates. The implantation rates of the cleavage checked group (14.0%) were a little lower, but not too significantly different from that of the control group (15.2%).

Conclusions: Based on the above results, the selection of early cleaved embryos through early cleavage check proved not only to be an useful parameter to achieve high pregnancy rates, but also to lower the chances of multiple pregnancies by transferring the best embryos and avoiding selective abortion, which reduces the level of discomfort experienced by the patients.

O-11(임상) Addition of Melatonin into Maturation Medium May Improve the Human Immature Oocyte Program

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Background & Objectives: The development of collection techniques for immature oocyte combined with novel culture technique, opens new possibilities for assisted reproductive technology. Moreover, women

with polycystic ovary disease and normo-ovulatory patients risk of developing ovarian hyperstimulation syndrome might benefit from earlier retrieval of oocytes followed by IVM and embryo transfer. Melatonin (N-acetyl-5-methoxytryptamine), a major hormone of pineal gland in vertebrates, is known to be associated with regulation of the dynamic physiological functions in general. This hormone is present in human preovulatory follicular fluid and may relate reproduction. And its antioxidant properties as a scavenger are also reported. We have reported that the addition of melatonin to the in vitro maturation (IVM) medium improved nuclear maturation of the mouse GV oocytes and reduced apoptosis in cumulus cells. So, the purpose of this study was the effect of melatonin in IVM of human immature oocytes and to improve the efficacy of human in vitro maturation cycles.

Method: From periods of September 2005 to August 2006, 49 IVM-IVF cycles were subjected to this study, and divided into melatonin-added (MEL, n=32) and control group (n=17). The immature oocytes aspirated were collected and cultured in these two different types of media. Basic IVM medium (G2 medium (Vitrolife) supplemented with 20% human follicular fluid, 75 mIU/ml rFSH, 0.5 IU/ml hCG, and 1 μg/ml E2) was used for control group. 10 μM melatonin was added to basic IVM medium and used for MEL group. After in vitro maturation for 24~48 hrs, mature oocytes were fertilized by ICSI using husband's sperms. Fertilization was assessed after 16~18 hrs of injection, and subsequent development was examined during 3 days of extended culture. Maturation, fertilization, pregnancy, and implantation rates were analyzed.

Results: The maturation rate of immature oocytes in the MEL group at 24 h after culturing was higher than those of control (205/386 (53.1%) vs. 105/236 (44.5%), $p<0.05$). In matured oocytes, fertilization rate in MEL group was higher than those in control (169/205 (82.4%) vs. 77/105 (73.3%), $p<0.05$). The pregnancy rates were 40.6% (13/32) in MEL group and 29.4% (5/17) in control. However, the implantation rate in MEL group was higher than those in control (22/138 (15.9%) vs. 6/86 (7.0%) $p<0.05$).

Conclusions: These results suggest that addition of melatonin into medium for IVM promote oocyte maturation, fertilization and clinical outcome. Therefore, we conclude that addition of melatonin may improve the IVM medium for clinical trial and increase the efficacy of human IVM procedure.

O-12(임상) 사출된 원 정액 또는 정자 세척용 배양액에 첨가된 항산화제가 인간정자의 기능적 매개변수 (Functional Parameter)에 미치는 효과

지희준 · 류정순 · 이지연 · 강수만 · 박진성 · 정다연
김명희 · 천은경 · 한국선 · 노성일

미즈메디병원

Background & Objectives: 본 연구는 불임시술을 위해 사출정액을 처리하는 과정 중 활성화산소에 의한 정자의 손상을 최소화하기 위해 첨가한 항산화제가 정자의 기능적 변수에 어떠한 영향을 미치는지를 조사하고자 하였다.

Method: 본 연구에 사용된 정액은 정액검사 후 폐기되는 정액을 환자의 동의 하에 본 연구에 이용