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

하였다. 사출된 원 정액 또는 세척용 배양액에 항산화제인 EDTA와 Catalase를 농도를 달리하여 첨가하고 각각 실온보관 및 세척 후 실온보관 1시간, 24시간 후에 CASA를 이용하여 이들 정자의 다양한 운동지수를 (Motility, VCL, VSL, VAP, ALH, BCF, HYP) 측정 비교하였다. 또한 첨가된 항산화제가 정자의 첨체반응 유도 (Con A-FITC 염색) 및 DNA fragmentation 억제에 (comet assay 분석) 미치는 영향을 조사하였다.

Results: 원 정액에 항산화제를 첨가하였을 경우, 낮은 농도의 EDTA첨가군에서 전반적인 정자의 운동지수가 향상되는 결과를 나타내었으나 대조군과 유의한 차이는 없었다. 세척용 배양액에 항산화제를 첨가하여 세척하였을 경우, 1시간 후에 EDTA 10 μM 첨가군이 대조군에 비해 유의하게 향상된 높은 정자의 운동지수를 ($p>.05$) 나타내었으나 24시간 후에는 EDTA 보다는 Catalase 10U, 1U 첨가군에서 보다 높은 운동지수를 나타내었다. 반면 1 mM 고농도의 EDTA 첨가는 원 정액 및 세척된 정액 내 정자의 운동지수를 유의하게 감소시키는 ($p>.05$) 결과를 나타내었다. 정자의 첨체반응에는 EDTA 1 mM 첨가군과 Catalase 첨가군에서 유의하게 높은 첨체반응율 나타내었다. 항산화제의 첨가는 DNA fragmentation rate를 유의하게 감소시키는 효과를 나타내었다.

Conclusions: 원 정액 보다는 세척한 정액의 운동지수가 전반적으로 향상되었고 적정농도의 항산화제 첨가는 정자의 운동지수의 향상에 효과적인 도움이 되었다. 또한 첨가된 항산화제는 첨체반응율을 향상시킬 뿐 아니라 활성화산소 (ROS)의 해로운 효과를 감소시켜 정자의 DNA fragmentation rate를 감소시켰다.

O-13(임상) Ovarian Response to Controlled Ovarian Hyperstimulation in Patients Treated with Cystectomy for Unilateral Ovarian Endometrioma

Chang Won Jeong[1], Yeon Kyung Chung[1], Young Min Choi[1,2], Byung Chul Jee[1], Seung-Yup Ku[1,2], Chang Suk Suh[1,2], Seok Hyun Kim[1,2], Jung Gu Kim[1], Shin Yong Moon[1,2]

[1]Department of Obstetrics and Gynecology, College of Medicine,
[2]Institute of Reproductive Medicine and Population, Medical Research Center,
Seoul National University, Seoul, Korea

Background & Objectives: To compare ovarian response to controlled ovarian hyperstimulation (COH) between ovaries previously treated surgically and contralateral ovaries in patients who had unilateral ovarian endometrioma.

Method: Seventeen patients with unilateral ovarian endometrioma previously treated surgically underwent 32 cycles of IVF. The number of dominant follicles (≥14 mm) observed on the day of hCG administration and the number of eggs retrieved were compared between ovaries previously treated with cystectomy and contralateral ovaries.

Results: The number of dominant follicles from diseased ovaries previously treated with cystectomy was not significantly different from contralateral normal ovaries after controlled ovarian hyperstimulation