B-1   Transport System에 의한 IVF 및 ICSI의 임상적 결과

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목 적: 본 연구는 transport system을 이용한 IVF 및 ICSI 시술 결과를 정상적인 IVF와 비교하고자 하였다. 본 연구에서는 각 실험군간의 수정율, 배아발달 및 임신율을 비교 분석하였다.

대상 및 방법: 본 연구는 바이오메드연구소와 각기 다른 곳에 소재한 4개 불임센터와의 공동연구에 의해 행해졌고, 대조군인 Normal IVF (N-IVF군)는 26주기, 실험군은 Transport IVF (T-IVF군) 24주기, Transport ICSI (T-ICSI군) 26주기를 대상으로 하였다. 배란유도는 통상적 방법에 의해 유도하였고, 실험군은 난자채취 당일 본 연구소로 이송하여 IVF 및 ICSI를 시행하였다. 난자 및 수정란은 이송간에 이동식 배양기 및 체열을 이용하여 온도를 유지하였고, 이송시간에 따른 시술 건수는 1시간 미만 9주기, 1시간 이상 41주기였다. 수정란은 난자채취 후 3일에 자궁경부를 통한 자궁강 내에 이식하였다.

결 과: 환자의 나이 (N-IVF: 31.3±5.1, T-IVF: 31.4±5.0, T-ICSI: 31.9±5.2)는 군간의 차이가 없었고, 각 군당 2주기씩 총 6주기에서 수정의 실패로 이식이 취소되었다. 수정률은 T-ICSI군이 다른 두 군에 비해 낮은 경향을 보였다 (N-IVF: 61.8%, T-IVF: 67.5%, T-ICSI: 57.8%). 각 군간의 배아발달은 IVF군간에는 차이가 없는데 비해 T-ICSI군은 통계적으로 유의하게 fragment가 증가하였다 (N-IVF: 41.6%, T-IVF: 48.9%, T-ICSI: 61.7%). 이식 주기당 임신율은 N-IVF군이 29.2%, T-IVF군이 36.4%, T-ICSI군이 33.3%로 실험군 모두 30% 이상의 임상적 임신을 얻었다. 이송시간에 따른 결과는 각 군간에 수정률은 차이가 없었으나, 배아발달 과정에서 이송시간이 1시간 미만군은 대조군과 유사하였고 1시간 이상군에서는 fragment가 증가하였다. 이송시간에 따른 임신율도 1시간 이상군이 미만군에 비해 감소되는 경향을 보였다.

결 론: 이상의 결과로 보아 Transport system에 의한 IVF 및 ICSI는 정상적인 IVF와 비슷한 수정 및 임신의 결과를 얻었다. 이는 IVF Lab의 고가 장비 및 인적 자원을 공유함으로 경제적 이득을 얻을 수 있을 뿐 아니라 질적으로 높은 시술 기술을 공유할 수 있는 장점이 있다. 이송간의 잠재적 상해를 보다 감소시키기 위한 연구가 진행되어야 한다고 생각한다.

B-2   Effect of Cryopreservation on the HSP90 Expression in Mouse Ovarian Tissue

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Objective: Heat shock protein family is related to protective mechanism of cells from the environmental changes. Our aim was to evaluate the effect of cryopreservation on the heat shock protein 90 (HSP90)

expression in mouse ovarian tissue.

Methods: Cryopreservation of mouse ovarian tissue was used by slow freezing method. The mRNA level of HSP90 expression in both fresh and cryopreserved mouse ovarian tissue was analysed by semi-quantitative RT-PCR. The protein expression of HSP90 was evaluated by Western blot analysis and immunohistochemistry.

Results: The two subunits of HSP90 (hsp90α and hsp90β) mRNA were expressed in both fresh and cryopreserved mouse ovarian tissue. The amount of hsp90α and hsp90β mRNA was increased in cryopreserved ovarian tissue after 30 minutes and 1 hour of thawing and incubation in vitro. The amount of HSP90 protein was increased in the cryopreserved ovarian tissue after 6 hours of the incubation in Western blot analysis. In immunohistochemical study, HSP90 was localized in cytoplasm of oocyte and granulosa cell from primary follicles and preantral follicles. Significant level of immunoreactive HSP90 was detected in theca cells while only traceable amount was found in ovarian epithelial cells.

Conclusions: The present study demonstrates the increase of HSP90 expression in the cryopreserved mouse ovarian tissue. It is suggested that HSP90 may play a role in the protective and/or recovery mechanism from the damage by cryopreservaiton.

B-3 The mRNA Expression Patterns of LH Receptor in Human Leutenized Granulosa Cells

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Objectives: We investigated the expression patterns of LH receptor (LH-R) in human leutenized granulosa cell (LGC)s and analyzed the relationship between LH-R mRNA expression and pregnancy rates, number of retrieved oocytes and oocyte quality, retrospectively.

Materials and Methods: LGCs were prepared at the time of oocyte retrieval from the patients undergoing IVF-ET program. The patients were divided into two groups: Group I (n=8) is poor responder (oocytes $\leq$ 4ea), Group II (n=40) is normal responder (oocytes > 4ea). After the extraction of total RNA, semiquantitative RT-PCR of LH-R mRNA was performed with same amount of RNA (30 μg/ml) and cDNA in these two groups and LH-R expression was quantified individually. The relative values of LH-R mRNA expression is represented as the results of LH-R/β-actin. Statistical analysis was performed using χ^2 test, student's t test and Pearson correlation.

Results: In Group II, LH-R expression was slightly stronger than in group I (0.516 vs 0.713), and also pregnancy rate was higher than group I (12.5% vs 48.7%, p=0.059), but there was no significant difference. LH-R expression was gradually increased when the number of retrieved oocytes was increased (p=0.014), but it was not clear that the relationship between LH-R and number of growing follicles. Also oocyte