P-16 배아 선별 인자로서 2세포기 조기 난할의 적용에 관한 연구

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Background & Objectives: 체외수정 (IVF) 또는 세포질내 정자주입술 (ICSI)에 의한 수정 후 25~27시간에 일어나는 2세포기로의 조기 난할이 임신을 예측할 수 있는 인자로서의 가능성을 알아보기 위하여 여성의 나이별, 시술방법에 따른 영향을 알아보고자 하였다.

Method: 배아 이식이 취소되었거나 동결 배아 이식, 임신 추적 확인이 불가능한 주기를 제외한 48주기를 연구대상으로 하였으며 수정 후 25~27시간에 2세포기로의 조기 난할을 관찰하였다. 난자채취 후 48시간 또는 72시간 후에 등급이 좋은 순서대로 최대 4개의 배아를 이식하였다. 조기 난할을 포함한 배아를 이식한 경우와 포함하지 않은 경우에서 환자군의 연령, 시술방법에 따라 구분하고 이에 따른 임신율을 비교 분석하였다.

Results: 총 48주기 중 조기 난할 배아를 포함한 군 (EC)은 29주기 (60.4%)였으며 조기 난할이 전혀 없었던 군 (NEC)은 19주기 (39.6%)였다. EC군에서 grade I, II의 good quality embryo는 38.2%로 NEC군의 22.0%보다 높게 나타났으나 통계적으로 유의하지는 않았다. 임신율은 EC군에서 유의하게 높게 나타났다 (48.3% vs. 15.8%, $p<0.05$). 21세부터 45세까지 환자를 5개 군으로 구분한 결과 조기 난할 비율이 25세 이후 급격히 감소하여 26~30세 이후 점차적으로 감소하였으며 이는 임신율의 감소 추세와 유사하였다. IVF와 ICSI군 사이의 조기 난할율을 비교하였을 때 유의한 차이는 없었다.

Conclusions: 수정 후 25~27시간 이후 조기 난할을 관찰하여 임신율을 분석한 결과 조기 난할을 포함한 군이 포함하지 않은 군에 비해 임신율이 유의하게 높은 것으로 분석되었으며 시술방법에 따른 조기 난할율의 유의한 차이는 없었으나 여성의 나이에 따라 임신율과 조기 난할율이 반비례함을 확인할 수 있었다. 그러므로 조기 난할의 관찰이 생존력과 착상력 높은 배아를 선별할 수 있는 간편하고 유용한 방법이 될 수 있을 것으로 사료된다.

P-17 The Comparison of Two Cryopreservation Methods of Human Spermatozoa; Vitrification vs Slow Freezing

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Background & Objectives: Vitrification has several advantages; avoiding ice crystallization by which the cells damaged, and reducing the time and cost of the freezing. The purpose of this study is to compare

the quality of spermatozoa after cryopreservation either by vitrification with a very fast cooling rate or slow freezing with a programmable freezer.

Method: Ejaculates were obtained from 13 male partners during routine infertility investigation. Completely liquefied ejaculates were analyzed according to the WHO criteria by computer-assisted semen analyzer (CASA). Each ejaculate was mixed with TYB-buffered freezing medium and then, divided into two parts; one for vitrification by a direct plunging into liquid nitrogen and the other for slow freezing. Thawing was achieved by plunging of the vials containing frozen sperms into 37℃ water. They were analyzed by CASA. In addition, DNA integrity of spermatozoa was examined by TUNEL assay.

Results: No significant difference was found in recovery rate of motile fraction between the two methods of cryopreservation (43.7% vs 45.2%, respectively). And also, DNA integrity of spermatozoa has no difference (35.4% vs 31.7%).

Conclusions: Sperm vitrification method can be an alternative for the cryopreservation of ejaculated human spermatozoa, which can avoid the use of the freezing equipment. The sperm qualities were similar after vitrification vs slow freezing methods. However, considering convenience of the procedure, vitrification is more favored for cryopreservation of spermatozoa.

P-18 Relationship between Genetic Polymorphisms of FSH Receptor and Outcome of Controlled Ovarian Stimulation

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Background & Objectives: Controlled ovarian hyperstimulation (COH) using exogenous FSH is a widely used treatment in most assisted reproduction techniques. FSH triggers the maturation of follicles and plays a pivotal role in the recruitment of the dominant follicle. These important actions of FSH are mediated by the FSH receptor. In this study, we evaluated the association of FSH receptor gene polymorphisms with outcome of COH in patients undergoing IVF.

Method: Genomic DNA was extracted from peripheral blood of 1020 women, including 551 women were undergoing COH. We investigated the frequency of FSH receptor variants, Thr307Ala (T/A) and Asn680Ser (N/S) polymorphisms by using polymerase chain reactions and restriction fragment length polymorphism analysis. Their clinical outcome such as basal FSH level, estradiol level at administratron of hCG, dosage of FSH treated, number of retrieved oocytes and pregnancy rates were compared related to their genotypes.

Results: In a population of 551 Korean women, the frequency of TT/NN, TA/NS and AA/SS for the variant Thr307Ala and Asn680Ser was 44.80%, 41.96% and 10.49%, respectively. The frequency of the unlinked genotypes, TA/NN, TT/NS, AA/NN and AA/NS were 1.86%, 0.29%, 0.20% and 0.29%, respec-