P-42 시험관 아기 시술에서 서로 다른 산소농도의 조건에 따른 체외수정 및 배양시 배발생 및 이식 후 임신율의 비교

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Background & Objectives: 마우스를 비롯한 다양한 포유류의 체외 발생에서 낮은 O_2 조건이 높은 배발생율을 보인다는 보고가 있어 왔다. 따라서 인간의 배발생에서 있어서도 낮은 O_2 조건이 어떠한 영향을 끼치는지 조사하여 불임치료를 위해 내원하는 환자들의 체외 수정 및 수정란 배양시 적절한 배양조건을 확립하고자 하였다.

Method: 포천중문의과대학 분당차병원에서 2004년 1월부터 9월까지 시술된 시험관 아기 시술 (ART) 프로그램에서 3일째 수정란 이식을 시행하는 179명의 환자를 대상으로 서로 다른 산소농도의 조건에 따른 체외수정 및 체외배양시 배발생 및 이식 후 임신율을 비교하였다.

Results: 체외수정 및 체외배양시 20% O_2의 조건을 갖춘 control group (59 case)과 체외수정시 20% O_2의 조건 이후 5% O_2의 조건에서 체외배양을 한 group 1 (63 case), 그리고 체외수정 및 체외배양 모두 5% O_2의 조건을 갖춘 group 2 (57 case)를 분석한 결과에 따르면 임신율은 control group (45.8%), group 1 (52.4%), group 2 (54.4%)이며, 6세포기 이상이고 grade 1-2로서 good quality로 평가되는 수정란의 분포도 control group (61.9%), group 1 (70.5%), group 2 (76.0%)로서 체외수정 및 체외배양시 5% O_2의 조건을 갖춘 group 1, 2가 20% O_2의 조건을 갖춘 control group에 대하여 배발생 및 임신율이 향상되는 것이 보였다.

Conclusions: 20% O_2의 조건에 비교할 때 체외배양 전기간에 걸쳐 5% O_2의 낮은 산소농도를 지닌 배양조건으로 배양한 수정란이 배발생에 있어 개선된 결과를 얻을 수 있었고 그에 따른 수정란 이식 후 임신율에 있어서도 높은 결과를 얻을 수 있었다. 따라서 5% O_2의 낮은 산소농도가 체외수정된 수정란의 배발생에 있어 보다 이로울 것으로 사료된다.

P-43 Proteomic analysis of Polycystic Ovary Syndrome (PCOS): Identification of Differentially Expressed Proteins

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Background & Objectives: The goal of this study was to identify potential protein markers in polycystic

ovary syndrome (PCOS) that is a wide-spread endocrine disorder characterized by obesity, hyperandrogenism, and insulin resistance.

Method: Ovary and follicular fluids from normal and PCOS patients were examined for quantitative differences in protein expression using two-dimensional polyacrylamide gel electrophoresis (PAGE). Spot detection was accompanied by using ImageMaster™ 2D Platinum software. About 30 candidate proteins were identified using matrix-assisted laser desorption/ionization-time of flight-mass spectrometry (MALD-TOF-MS) or peptide sequencing.

Results: Elongation factor Tu (EF-Tu), Isocitrate dehydrogenase (IDH), Aldehyde dehydrogenase 1A1, Fibrinogen β-chain precursor, Fascin, TATA-binding protein, Septin 11, Aconitase 1, hnRNP 2H9B, Aldehyde reductase, Esterase D, Ribose-phosphate pyrophosphokinase I, and PGAM1 were identified as being significantly overexpressed in patients with polycystic ovary syndrome. The expression of these proteins was increased from 1.4- to 10.6-fold as compared with normal ovary tissues. On the other hand, the expression level of carbonic anhydrase I, ubiquitin-conjugating enzyme E2N, and histone H2A.5 was decreased from 1.5- to 2.5-fold.

Conclusions: Two-dimensional PAGE and mass spectrometry can identify proteins showing increased (or decreased) expression in polycystic ovary syndrome. The association of these proteins with clinical variables and understanding the regulation of their expression will aid in determination of their potential use as biomarkers in this syndrome.

P-44 The Efficacy of Simple Assessment System of Oocyte Maturity in IVF-ET Cycles

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Background & Objectives: The purpose of this study was to investigate the effect of simple assessment system of oocyte maturity on the outcome in IVF-ET cycles.

Method: Patients were grouped into two different groups, group I without evaluation and II with evaluation of oocyte maturity. In group I, all oocytes were inseminated at 6 h after ovum pick-up. In group II, oocyte maturity was rapidly categorized by simple assessment system. In mature form, oocytes were inseminated at 3~4 h after ovum pick-up when oocyte corona complexes (OCC) exbited ring-like halo (RLH) and well expanded cumulus cells (CC) or at 5~6 h when OCC exhibited RLH and a few clumped and/or dark CC, respectively. In intermediate form, oocytes were inseminated at 8~10 h when RLH around OCC was not formed and CC were clumped and/or dark. Immature oocytes were not included in this study.

Results: Normal fertilization rate was significantly higher ($p<0.05$) in group II (76.5%) than that in group I (58.0%). However, abnormal fertilization rate was significantly higher ($p<0.05$) in group I (11.3%) than that in group II (3.6%). Cleavage rate was not statistically differences in each group (82.6% vs. 90.0%).