P-26 The Comparative analysis of the Protein Expression Profiles between Normal Women and Women with RSA and PCOS using Two-dimensional Electrophoresis and Image analysis Software

Kim MS[1], Kim YS[1], Park TJ[1], Lee SH[1], Lee JA[2], Kim JW[2], Choi BC[2], Cha KY[1], Baek KH[1]

[1]Cell and Gene Therapy Research Institute, Infertility Medical Center, Pochon CHA University, CHA General Hospital, Seoul, Korea, [2]Department of Obstetrics and Gynecology, CL Women's Hospital, Kwangju, Korea

Background & Objectives: Aberration of regulating processes for the normal pregnancy may lead to a lot of problems in pregnancy. Two of these problems are recurrent spontaneous abortion (RSA) and Polycystic ovary syndrome (PCOS). However, the specific genes and proteins involved in these problems are not well defined. We have reported the immunosuppression-related, angiogenesis-related and apoptosis-related genes are associated with RSA. In the case of PCOS, we studied the role of CYP17 and CYP11α. Two-dimensional (2-D) polyacrylamide gel electrophoresis (PAGE) for comparative analysis of the protein expression profiles between normal women and women with endocrine disorders (e.g. recurrent spontaneous abortion (RSA) or polycystic ovary syndrome (PCOS)) using image analysis software was carried out for more intensive study in identifying proteins that are involved in two endocrine disorders.

Method: Human follicular fluids of ovary from normal women, women with PCOS, and women with RSA (a total number of 8) were obtained from mature follicules after oocyte collection for in vitro fertilization (IVF). Follicular fluids were centrifuged at 500 g to remove blood and granulose cell contaminations. After rehydration, we processed for 2-D PAGE, and Coomassie blue and silver stainings prior to the analysis of the differential protein expressions using image analysis software.

Results: We obtained high resolution of 2-D maps and hundreds of spots. Image analysis revealed obvious differential protein expressions between normal women and patients with RSA and PCOS.

Conclusions: The molecular mechanisms for differential protein expressions have to be elucidated for the prognosis of the pregnancy of individuals with higher risk. High-quality instruments for 2-D PAGE, skilled electrophoretic operation, and efficient image processing are all essential in the reliable identification of functional proteins that involved in endocrine disorders.