The relationship between chromosomal abnormalities in unfertilized oocytes and female factors in IVF cycles

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Abstract

Introduction: Using Assisted Reproductive Techniques (ART) may result in the birth of a neonate and help solve the infertility problem. However, 10-15% of oocytes fail to fertilize and this is called a Total Fertilization Failure (TFF). This failure may impose financial burden on the infertile couples and be time consuming to IVF team. The aim of this study was to determine the relationship between chromosomal abnormalities of unfertilized eggs and female hormones, FSH and LH.
Materials & Methods: Unfertilized oocytes from IVF treatment cycles were prepared by Tarkowski method for chromosomal studies and after staining by Giemsa method, they were chromosomally analyzed. For hormonal evaluations of FSH and LH, ELISA was used. The results were analyzed by ANOVA and correlation coefficient calculations through using SPSS software and p-values <0.05 were considered significant.
Results: From 52 treatment cycles, 362 oocytes were left for IVF from which 285 oocytes were fertilized and 77 oocytes were unfertilized. Considering the elimination of 26 fertilized oocytes chromosomal analyses were done on 51 ova and sixteen oocytes from nine treatment cycles had chromosomal abnormalities. Most abnormalities were in the C group and the minimum were observed in the G group of the standard classification of chromosomes. There were no significant relationships between chromosomal abnormalities and FSH, LH levels (with mean values of 16.22 ± 8.1 *IU/L* and 7.74 ± 3.8 *IU/L* respectively), age and duration of infertility.
Conclusion: The results of this study showed that there were no relationships between chromosomal abnormalities of oocytes and female factors. Therefore, it seems that for the identification of the main causes of TFF in infertility cycles, it is necessary to consider other related factors such as sperm function, when there is no oocyte or female hormone abnormalities.

Key Words: Chromosomal abnormalities, Female hormones, Infertility, IVF, unfertilized oocytes.

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