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Oral Presentations

O-17

Expression of *CALM1*, *PSMD6*, and *AK124742 LncRNA* genes in cumulus cells of infertile PCO women: A good predictor of successful fertilization

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Background: In human assisted reproductive technology (ART), selection of high-quality embryos to transfer usually is based on morphological criteria but it cannot be always a good predictor of successful fertilization. Analyzing gene expression of cumulus cells (CCs) might lead to some important molecular information about the embryo quality. Calmodulin 1 (*CALM1*), Proteasome 26S Subunit, Non-ATPase 6 (*PSMD6*), and AK124742 expression in the CCs of pregnant patients were more significant compared to the non-pregnant ones. One of the well-known causes of female infertility is polycystic ovary syndrome (PCOS) and the number of retrieved oocytes with a higher implantation potential is limited, so the process of selecting good embryos in PCOS patients is very important.

Objective: The aim of this study was to compare the expression of *CALM1*, *PSMD6*, and *AK124742* genes in the CCs of infertile PCO patients with control fertile group.

Materials and Methods: Samples were the CCs from 33 fertile egg donor women and 33 infertile PCO women. They undergo ART and the CCs were collected and frizzed till real time PCR (RT-PCR) was performed. The expression of *CALM1*, *PSMD6*, and *AK124742* genes was detected by RT-PCR. Chemical pregnancy rates were used to assess the success of ART.

Results: Clinical pregnancy was observed in 38 of the 66 patients. Expression of all three genes *CALM1*, *PSMD6*, and *AK124742* in the pregnant group were higher than the non-pregnant group. This increase was not significant for the *CALM1* gene but for two genes *PSMD6* ($p < 0.001$) and *AK124742* ($p < 0.05$) were significant. The expression of *CALM1* and *ak124274* gene increased significantly and the expression of psmd6 decreased significantly in PCOs group compared to the control group ($p < 0.05$).

Conclusion: All three genes are proper markers for predicting embryo competence due to increased expression levels in pregnant groups.

Key words: *CALM1, Infertility, lncRNA, PCO, PSMD6.*