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Poster Presentations

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Down-regulation of TRPV6 calcium channel, in endometrial cells may cause repeated implantation failure

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Background: TRPV6 is an important calcium channel which translocate on the apical surface of epithelial cells by S100A10-Annexin A2 complex. Female TRPV6 knock-out mice are infertile. S100A10 is a calcium binding protein that is expressed in endometrial epithelial and stromal cells. Low expression level of it was seen in the endometrium of infertile women that their uteruses were non-receptive. The highest expression of S100A10 occurs in secretory phase, whereas TRPV6 expression is up-regulated in the proliferative phase.

Objective: The aim of the study was comparison of S100A10 and its associated calcium channels TRPV6 expression between the endometrium of repeated implantation failure (RIF) patients and fertile women.

Materials and Methods: Endometrial samples were taken from RIF women below 40 yr old, with at least three cycles of IVF failure after at least five good quality embryo transfer using piple. Endometrial samples of oocyte donors were mentioned as control group. S100A10 and TRPV6 expression in endometrium of RIF women and oocyte donors were analyzed using Real time PCR.

Results: In the endometrium of RIF women, the expression of S100A10 was significantly higher in luteal phase than follicular phase. But its expression in the secretory phase of the experimental group was not different with its expression in control group. TRPV6 expression in RIF women didn't change during proliferative and mid-secretory phases. Its expression in the RIF women was significantly lower than control group.

Conclusion: In RIF women, very low level of TRPV6 during follicular phase which remains unchanged during luteal phase could be a reason for endometrial cell dysfunction in calcium transfer and failure of embryo implantation. However, in the experimental group, the expression of S100A10 in the luteal phase was similar to control group. It shows independence of TRPV6 to S100A10, in this stage of endometrial cycle.

Key words: *S100A10, TRPV6, RIF, Calcium channel.*