

17th World Congress of the Academy of Human Reproduction

15–18 March 2017
Rome, Italy

TITLE

SIGNALING MOLECULES AS MARKERS OF ENDOMETRIAL RECEPTIVITY

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ABSTRACT

Context. Development of immunohistochemistry has opened new perspectives in the development of clinically relevant biomarkers of endometrial receptivity to develop panels of markers appropriate to provide a personalized approach to the treatment of infertility in the planning of IVF.

Objective. The verification of diagnostically significant markers of endometrial receptivity to develop an algorithm of personalized approach to infertility treatment and improve the efficiency of IVF.

Methods. Expression of signaling molecules such as leukemia inhibitory factor (LIF), integrin $\alpha V\beta 3$, prolactin, estrogens, tumor growth factor β (TGF β 1), vasoactive endothelial growth factor A (VEGF-A), which play key role in paracrine regulation of embryo implantation have been studied in “implantation window” period in endometrial biopsies of women with various infertility factors by laser confocal microscopy. Using automated morphometric analysis we evaluated the expression area (in %). The quantitative data were processed by the method of variation statistics.

Results. Expression of signalling molecules, involved in endometrial receptivity process were analysed and IVF outcome prediction algorithm was designed for different patient groups. It was found that for women with male factor infertility are most important the expression of following molecules: LIF, integrin $\alpha V\beta 3$ and TGF β 1. In the group of women with tubal-peritoneal factor infertility the most informative markers are: LIF, integrin $\alpha V\beta 3$ and ratio PR/ER expression. For a group with external genital endometriosis prognostically significant are: TGF β 1, VEGF-A, LIF, integrin $\alpha V\beta 3$.

Conclusion. The algorithm for predicting of IVF outcome on the basis of assessment of the functional state of the endometrium by immunohistochemical verification of key signaling molecules involved in providing endometrial receptivity is design.

INSTITUTE

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