



## PROGESTERONE RECEPTION IN THE PERIPHERAL BLOOD MONONUCLEAR CELLS AND THE SUCCESS OF ASSISTED REPRODUCTIVE TECHNOLOGY

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**Introduction.** Increasing the pregnancy frequency in the IVF programs is one of the challenges in gynaecology nowadays. One of the approaches to enhance the efficacy of ART is to estimate the success of the forthcoming procedure by evaluating parameters crucial for implantation in each individual patient. Important factors to be considered for the success of the implantation include overall immune system status and progesterone receptor levels and their functional activity in immunocompetent cells.

**The aim of the study.** Assessing the levels of gene expression of progesterone, oestrogen receptors and PIBF in the blood mononuclear cells of women participating in the IVF program.

**Methods.** Density gradient centrifugation, peripheral blood mononuclear cells, RT-PCR.

**Results.** We have shown that the effective IVF cycle is associated with significantly higher expression level of progesterone receptors PR-A, PR-B and PGRmC1 in cells of the peripheral blood mononuclear fraction (average 25-, 28- and 2.1-fold difference, respectively, ( $P < 0.01$ ) compared to those in patients with unsuccessful attempts. Similar results were observed when analysing the gene expression level of progesterone – induced blocking factor (PIBF) (2-fold difference,  $P = 0.013$ ). This parameter can serve as a novel predictive marker to estimate the efficacy of the in vitro fertilization program.

**Conclusion.** The results of the study allow to predict the treatment success in the standard long IVF protocol. Data obtained in the study offer an opportunity to provide recommendations in IVF program patients treatment tactics, as well as allows to suspend the procedure in case of the negative results and to procure hormonal treatment for the woman before the next attempt.

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