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ENDOMETRIAL SCRATCHING WITH ANALYSIS UTERINE NATURAL KILLER AND PRP (PLATELET RICH PLASMA) INCREASE EMBRYO IMPLANTATION RATE

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INTRODUCTION: Endometrial scratching is technique proposed to facilitate embryo implantation and increase probability of pregnancy in women undergoing in vitro fertilization (IVF). Endometrial immune reaction that occurs in women during implant window is crucial for implantation. Under physiological conditions, uNK lymphocytes are not spontaneously cytotoxic. However, uNK cells are not the only ones in the endometrium: in a predominantly Th1 environment, dendritic cells and Treg cells can increase the uNK lymphocytes cytotoxicity and in turn they are able to recognize trophoblastic cells as non -self and reject them by inducing a missed implant and repeated abortions. When uNK lymphocytes are elevated, aggressive environment is produced in the endometrium causing implantation failure. An altered immune system can be linked to abortions or repeated failures of embryonic implant, so a balanced local immune biological reaction is necessary to allow the embryo adhesion phase.

METHODS: Our study includes 180 patients with IVF failures that underwent an endometrial scratching performed with a Pipelle in pre-ovulatory and secretory phase of menstrual cycle and subsequently immunohistochemical examination for uNK cells. The samples were fixed in formaldehyde and were immunohistochemically stained for CD16 Unk cells, CD56 uNK cells and CD138-positive. Research of uNK lymphocytes was performed by histological examination. Immunohistochemical markers CD16 and CD56 reveal the possible presence of lymphocyte elements in the stroma of the endometrial mucosa. Instead, the morphological and immunohistochemical marker CD138 reveals the possible presence of plasma cells that can be evidence of endometritis.

RESULTS: The cutoff considered was 10 CD cells in proliferative phase and 20 cells in secretive phase. CD16 and CD56 cell abundance in proliferative endometrial tissue of women with reproductive failure has suggested they may play a role in this pathogenesis. Common treatment for women with abnormal endometrial NK cells numbers is use of corticosteroids and in addition we use PRP performed 48 hours before the embryotransfer. Pregnancy rate was significantly higher (43%) in the same group of patients under 40 with several previous IVF failures (20% in control group).

CONCLUSION: Performing this combined treatment, endometrial scratching and PRP, in patients with diagnosis of infertility increased pregnancy rates.