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Poster Presentations

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Evaluating the effect of ovarian stimulation and exogenous progesterone on CD31-positive cell density, VEGF protein, and miR-17-5p expression of endometrium immediately before implantation

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Background: MicroRNAs (miRNAs) form a special class of RNAs regulating endometrial functions like cell proliferation, differentiation, angiogenesis, and blastocyst implantation. In addition to providing suitable conditions for embryo development, angiogenesis is a prerequisite to natural pregnancy. The family of vascular endothelial growth factor (VEGF) and its receptors are the main physiological and pathological angiogenesis regulators in the endometrium. In the past, research has demonstrated alteration of angiogenesis and subsequent endometrial receptivity in the stimulated and luteal phase support cycles, when compared with natural cycles.

Objective: The objective of this study is to investigate the effect of ovarian stimulation and exogenous progesterone on the density of CD31-positive cell (Endothelial cell), VEGF protein, and miR-17-5p expression in the mouse endometrium immediately before implantation.

Materials and Methods: The endometrial CD31-positive cell density was determined by immunohistochemistry (IHC) staining, the level of VEGF protein by IHC and western blot analysis, and finally the miR-17-5p expression was determined by the real-time PCR method.

Results: The density of endothelial cell, VEGF protein, and miR-17-5p expression increased in all of the experimental mice when compared to the control group, with the maximum increase having been seen in the group that had received progesterone after ovarian stimulation.

Conclusion: This research indicates that ovarian stimulation and exogenous progesterone lead to an increase in the number of endothelial cells by upregulating the VEGF protein. Moreover, except for miR-17-5p, other microRNAs and molecules are presumably involved in angiogenic pathways, thereby requiring more studies.

Key words: *VEGF, miR-17-5P, Progesterone, Endometrium, CD31- positive cell.*

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