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## UNEXPLAINED INFERTILITY: CLINICAL CHARACTERISTICS OF COUPLES AND EMBRYOLOGICAL FEATURES OF IN VITRO FERTILIZATION PROGRAMS

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### ABSTRACT

**Introduction:** The specialists refer unexplained infertility to the so-called diagnosis of exclusion due to the fact that in the process of medical examination of married couples the causes of infertility cannot be established.

**Material and methods:** The clinical characteristics and embryological features of in vitro fertilization programs of couples with unexplained infertility versus the patients with tuboperitoneal infertility were analyzed retrospectively and prospectively.

The study group comprised 93 women, who underwent 108 in vitro fertilization programs, and the control group consisted of 45 patients, who underwent 49 in vitro fertilization programs.

**Results:** Significant differences ( $p < 0.05$ ) were found between the groups in anamnestic, clinical, laboratory, and instrumental characteristics. The ovarian stimulation protocols were comparable between the groups of patients. The blastulation rate was considered to be the endpoint in in vitro fertilization programs, and it was significantly lower in the group of women with unexplained infertility (45.53%). In-depth analysis of the embryonic stage of in vitro fertilization programs showed, that low blastulation rate in unexplained infertility was mainly due to the fact that embryos stopped developing about three days after they were cultured. At the same time the morphological assessment showed that the quality of blastocysts was higher in the group of unexplained infertility (66.7%) compared to the group of tuboperitoneal factor of infertility (45.8%). Preimplantation genetic testing for aneuploidy showed similar frequency of detection of euploid embryos (41.7% and 40.0%, respectively).

**Conclusion:** A “clinical portrait” of women with unexplained infertility was described. The low blastulation rate was noted in in vitro fertilization programs for women with unexplained infertility. Given the identified impairments of early embryonic development in unexplained infertility, it is appropriate to recommend the patients to undergo early use of in vitro fertilization with good-quality embryo transfer ( $>3$ , AA, AB, BA according to Gardner grading system) on day 5-6 of culture without long-lasting preliminary examination and empirical treatment.

**KEYWORDS:** unexplained infertility, tuboperitoneal factor of infertility, oocyte factor, embryonic development, in vitro fertilization, assisted reproductive technologies.

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