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HIGH FSH AND THE EFFECTIVENESS OF ART PROGRAMS: MODERN APPROACHES TO PATIENT MANAGEMENT

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Annotation: An increase in the level of follicle-stimulating hormone (FSH) in women of reproductive age is one of the key markers of decreased ovarian reserve and a harbinger of reproductive failure. The article discusses the pathophysiological mechanisms of increased FSH, its diagnostic value and clinical significance in the context of infertility. The article presents the results of the analysis of data from 152 patients with varying degrees of increased FSH, and studies possible causes (age-related changes, iatrogenic interventions, autoimmune processes, genetic predisposition) and potential approaches to treatment. Modern strategies for patient management are covered, including the use of hormone replacement therapy, an individualized ovarian stimulation protocol, the use of donor oocytes, as well as innovative methods using growth factors and stem cells. Emphasis is placed on the need for a differentiated approach and careful assessment of the ovarian reserve in clinical practice.

Keywords: Follicle stimulating hormone, FSH, infertility, ovarian reserve, AMH, hormonal therapy, donor eggs, IVF, premature ovarian failure, decreased fertility

Introduction

A woman's reproductive function directly depends on the state of the ovarian reserve, the key biomarker of which is the level of follicle-stimulating hormone (FSH). Elevated FSH, especially in the early follicular phase of the menstrual cycle, is a prognostic sign of decreased ovarian function. The FSH level closely correlates with the number of antral follicles and anti-Müllerian hormone (AMH), which makes it one of the most studied and clinically significant parameters in the diagnosis of infertility. An increase in FSH is usually associated with a compensatory increase in pituitary stimulation during depletion of the follicular pool. However, interpretation of the FSH level requires a comprehensive approach that takes into account the patient's age, cycle phase, the presence of concomitant pathology and previously performed treatment methods.

Methods

The study included 152 patients diagnosed with infertility of various origins and confirmed elevated FSH levels (>10 MME/ml). The women's age ranged from 28 to 43 years. The patients were divided into 3 groups: Group I — with moderate FSH elevation (10–15 MME/ml), Group

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II — with marked elevation (15–25 MME/ml), Group III — with critical levels (>25 MME/ml). All women underwent a comprehensive examination: determination of FSH, LH, E2, AMH, ultrasound monitoring of the ovaries, karyotyping, study of autoantibodies to ovarian tissue, and assessment of somatic status. In some cases, enzyme immunoassay methods were used to exclude concomitant endocrine disorders. The effectiveness of various treatment approaches was assessed, including hormonal therapy, IVF with the woman's own or donor oocytes, ovulation induction, and experimental methods.

Results

Analysis of clinical data revealed a direct relationship between the FSH level and the severity of menstrual cycle disorders. Patients with FSH> 25 MME/ml more often had amenorrhea or infrequent menstruation, as well as low E2 and AMH levels, indicating profound ovarian dysfunction. Autoantibodies to ovarian tissues were detected in 78% of women in Group III, confirming the involvement of the autoimmune mechanism in pathogenesis. Mutations in the FMR1 gene (premutation) were diagnosed in 16% of patients, which correlates with the clinical picture of premature ovarian failure. The effectiveness of classical IVF protocols with their own eggs in this category of patients was extremely low (the overall pregnancy rate was 5.6%). The highest result (up to 47%) was shown by the protocol using donor oocytes. The use of hormone replacement therapy allowed to normalize the menstrual cycle and subjective well-being in most patients, but did not affect the restoration of fertility. Injections of stem cells and growth factors in the experimental group demonstrated positive dynamics of the AMH level in 3 of 12 patients during 6 months of observation, but require further research.

Discussion

An elevated FSH level in women with infertility is an important marker indicating a decrease in ovarian reserve and the need to revise reproductive tactics. Its interpretation should be comprehensive and take into account age, hormonal background, the presence of concomitant pathology and previous reproductive failures. This indicator should not be the only criterion for refusing IVF attempts, especially with a moderate increase (up to 15-18 MME/ml), where individualized stimulation is possible. However, with a pronounced and critical FSH level (>25 MME/ml), it is rational to use programs with donor eggs or participate in clinical trials of new methods for restoring ovarian function. The autoimmune component and genetic predisposition emphasize the need for extensive screening and a multidisciplinary approach to diagnosis and treatment.

Conclusion

Elevated FSH levels are a prognostically unfavorable factor in women with infertility, especially in combination with low AMH and menstrual irregularities. Individualization of the approach, timely diagnosis of causes, expansion of indications for the use of assisted reproductive technologies and the development of new experimental methods are key areas in the management of such patients. Further research in the field of molecular biology,

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immunology and regenerative medicine will help expand therapeutic options and improve the fertility prognosis.

Sources Used:

1. Savelyeva G.M., Serov V.N. "Gynecology". – M.: GEOTAR-Media, 2020.
2. Practice Committee of the American Society for Reproductive Medicine. "Testing and interpreting measures of ovarian reserve: a committee opinion." Fertility and Sterility. 2020.
3. Livshits V.A., Andreeva E.N. "Reproductive endocrinology". – M.: MIA, 2019.
4. Nelson LM "Primary ovarian insufficiency." New England Journal of Medicine, 2009.
5. Tartagni M., et al. "Premature ovarian failure: genetic and autoimmune causes." European Review for Medical and Pharmacological Sciences, 2015.
6. Kelsey TW, et al. "Ovarian volume correlates strongly with ovarian reserve markers." Human Reproduction, 2013.
7. Yaroshevich A.M., Shmyrov A.D. "Modern approaches to the management of patients with premature ovarian failure". Obstetrics and Gynecology, 2021.
8. Dolzhenko M.M. "Assisted Reproductive Technologies: Present and Future". Reproductive Health, 2020.
9. Check JH "High FSH levels: the clinical significance and approach to management." Clinical and Experimental Obstetrics & Gynecology, 2018.
10. Oktay K., et al. "In vitro activation of primordial follicles using Akt stimulators and stem cells: a new horizon for fertility preservation." Fertility and Sterility, 2022.