

HORMONAL AND IMMUNOLOGICAL FEATURES OF IDIOPATHIC
OLIGOMENORRHEA IN ADOLESCENTS.

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Introduction

Menstrual cycle disorders occupy a leading place in the structure of gynecological morbidity among adolescents. In particular, complaints about infrequent menstruation are a fairly common reason for visiting a doctor. Normogonadotropic oligomenorrhea is a manifestation of many different causes that caused it. Most of them have clear diagnostic criteria and well-founded international clinical recommendations for the management of these forms. However, along with the variety of forms of normogonadotropic oligomenorrhea, the authors identified non-specified oligomenorrhea (idiopathic oligomenorrhea), which take interest and difficulty in the adolescent gynecologist's practice. This form, being the least studied, requires further search for the causes and clear recommendations for its management.

The aim is to determine the characteristic hormonal and immunological signs of idiopathic oligomenorrhea in adolescents.

Materials and methods of research: The study involved 51 teenage girls aged 15-19 years who applied to the "Republican specialized scientific and practical medical center for maternal and child health" with idiopathic oligomenorrhea (n=17), as well as with oligomenorrhea resulting from a specified cause (n=34).

The group with idiopathic oligomenorrhea (IOM) included patients with oligomenorrhea of unknown etiology. The criterion for patients inclusion in the group with specified oligomenorrhea (SOM) was the established cause of oligomenorrhea, such as PCOS (n=23) and congenital adrenal cortex dysfunction (CAD) (n=11). The control group consisted of 20 patients with a normal menstrual cycle. These patients underwent hormonal and immunological studies.

Research results and discussion:

The results of a comparative assessment of hormonal parameters of the IOM in comparison with a group of patients with specified oligomenorrhea and their peers with a normal menstrual cycle. A study of hormone levels in the blood serum of patients with idiopathic oligomenorrhea showed a significant increase in the level of follicle-stimulating hormone and a decrease in estradiol, compared with the control group

We carried out a detailed analysis and comparative assessment of serum AMH levels in a sample consisting of groups of patients with IOM, PCOS and CAD. These causative factors of oligomenorrhea are pathogenetically homogeneous conditions and have independent pathogenetic mechanisms for the development of ovarian failure.

A comparative analysis of AMH content in clinical groups showed significantly low AMH levels in the group with IOM in both age subgroups. In girls with PCOS, serum AMH

was 4.1 times higher in the subgroup of 15-16 year olds and 3.2 times higher in the subgroup of 17-19 year olds ($p < 0.001$). This fact indicates a large number of preantral follicles in the group with PCOS. AMH levels in CAD were on average 5.7 and 5.9 ng/ml (in two age subgroups) and did not have significantly significant differences with control values ($p > 0.05$).

In girls with oligomenorrhea, changes in the concentration of cytokines were observed, depending on the form of the disorder. Thus, the most increased synthesis, IL-1 β , was observed in PCOS - 35.8 ± 13.2 pg/ml ($p < 0.05$), which is 1.3 times higher than in the CAD group - 28.3 ± 7.1 pg/ml, the average values were found in the group with IOM - 32.8 ± 10.7 pg/ml.

The greatest interest take the results of a comparative analysis of the level of IL-6, where the maximum value of this cytokine was observed in the group with IOM - 40.4 ± 15.1 pg/ml versus 12.94 ± 2.5 in the control ($p < 0.05$). Almost identical numbers were observed in girls with hyperandrogenism - with PCOS - 35.7 ± 14.4 pg/ml and 33.7 ± 14.7 pg/ml with CAD, also significantly different from the control values ($p < 0.05$).

The level of TNF α in patients with PCOS was significantly increased compared to the control group - 17 ± 4 pg/ml versus 35.7 ± 8.8 pg/ml ($p < 0.05$). In patients with IOM, the level of TNF α was 1.8 times increased and averaged 30.9 ± 10.6 pg/ml ($p < 0.05$), but was lower than the values in patients with PCOS. Also, in patients with CAD, the TNF α level was 1.87 times higher than control data - 31.8 ± 9.2 pg/ml versus 17 ± 4 pg/ml ($p < 0.01$), but less than in PCOS and more than with IOM, which may depend on androgen levels.

Conclusion: Based on the above, it can be assumed that the immune system plays an important role in the formation of manifestations of decreased ovarian reserve in girls due to impaired production of IL6, which may be a prerequisite for impaired ovarian function, folliculogenesis processes and steroid production.

Thus, immunological factors play a significant role in the functioning of parts of the reproductive system. The results of this study showed that changes in cytokine status may be associated with the formation of ovarian failure and disruption of the folliculogenesis process in oligomenorrhea in adolescents.