

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ  
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



## **МАТЕРІАЛИ**

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## **HISTOLOGICAL STUDY OF CHORIONAL HORMONES CHARACTERISTICS IN MISCARRIAGE IN THE FIRST TRIMESTER OF GESTATION**

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**Introduction.** The problem of miscarriage in the world obstetrics is one of the most important. In Ukraine, the frequency of miscarriage reaches 15–27% of all diagnosed pregnancies. 25% of women of the reproductive age have a history of at least one case of pregnancy loss.

**The aim of the study.** To study the immunohistochemical features of chorions' state in miscarriages in the first trimester of pregnancy.

**Material and methods.** An immunohistochemical study of trophoblast hormones, namely placental lactogen and chorionic gonadotropin, was conducted. 23 chorions with spontaneous abortion in the 1st trimester of pregnancy (main group) and 20 chorions with artificial abortions (control group) were studied. Immunohistochemical methods were used on serial sections in accordance with the protocols provided by the manufacturer. The staining results were measured by the computer microdensitometry method according to the optical density of the specific staining in relative optical density units (units of optical density).

**Results.** The optical density of specific staining for placental lactogen (immunohistochemical study) in the trophoblast of the chorionic villi of the material of the fertilized egg with a gestation period of 7-12 weeks in miscarriages and artificial abortions demonstrates that in miscarriages the intensity of staining of the trophoblast of the chorionic villi is significantly lower on average ( $0.145 \pm 0.0063$  units of optical density) than with artificial abortions ( $0.181 \pm 0.0087$  units of optical density). This fact is important, considering the significant role of placental lactogen in the processes of chorionic villi maturation, in the metabolism of proteins, in the processes of angio- and vasculogenesis ( $p < 0.05$ ). Probability divergence by Student criterion – 0,009. Authenticity discrepancy according to Mann-Whitney criterion – 0,016. During the study, a more intense staining for placental lactogen in the chorionic villus was noted by us, observed in the zone of syncytiotrophoblast location, while the zone of cytotrophoblast location shows a lower intensity of specific staining for placental lactogen. Regarding the study of pregnancy hormones, it is worth noting that in the first trimester of pregnancy, chorionic gonadotropin is even more important for the development of the chorion. The optical density of the specific staining for chorionic gonadotropin in the trophoblast of the chorionic villi of the material of the fertilized egg with a gestation period of 7-12 weeks in miscarriages is  $0.112 \pm 0.0058$  (o.d. optical density) and artificial abortions  $0.264 \pm 0.0099$  (o.d. opt. density). We can see not only that the intensity of specific immunohistochemical staining for chorionic gonadotropin (according to the optical density of staining with diaminobenzidine) decreases with miscarriages, but also that such a decrease is very noticeable - more than two times ( $p < 0.05$ ).

**Conclusions.** Therefore, as a result of the performed immunohistochemical study in the trophoblast of the chorionic villi of the material of the fertilized egg in the first trimester of pregnancy, it has been established that the intensity of specific immunohistochemical staining of both chorionic gonadotropin and placental lactogen decreases during miscarriages.

**Tsysar Y.V.**

## **MODERN CONCEPTS OF POLYMORPHISM IN THE DIAGNOSIS OF PUBERTAL UTERINE BLEEDING**

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**Introduction.** Studying the genetic prerequisite for the development of uterine bleeding in girls of puberty age under existing thyroid pathology and without concomitant pathology is one of the top tasks of pediatric gynecology.

**The aim of the study** - is to establish thyroid pathology the frequency of alleles and genotypes of the GP IIIa polymorphism gene in the structure of puberty menorrhagia in girls with concomitant thyroid pathology and to identify risk factors for puberty menorrhagia based on genetic analysis.

**Materials and methods.** 70 teenage girls, patients with puberty menorrhagia, who were treated in the gynecological department of the city clinical maternity hospital №1 in Chernivtsi were examined. Girls were divided into two groups: I (main) – 30 teenage girls diagnosed with puberty menorrhagia against the background of concomitant thyroid pathology, the second group (comparison) – 40 teenage girls diagnosed with puberty menorrhagia. Control group – 25 almost healthy teenage girls. GP IIIa gene polymorphism (PLA1/PLA2) was studied once, after patients were included in the study, by selecting genomic DNA.

**Results.** The frequency of alleles and genotypes A1A2 of polymorphism of the GP IIIa gene was conducted in adolescents with menorrhagia, including thyroid pathology and in healthy teenage girls. It was found that the incidence of occurrence "wild" A1 allele of the GP IIIa gene in teenage girls with menorrhagia is 2.41 times greater than "mutant" A2 allele: 99 (70.7%) 41 (29.3%) cases of 140 allocated alleles ( $\chi^2=9.64$ ,  $p=0.002$ ). A similar trend was observed in the control group: A1 identified in 35 (70.0%) cases, which were 2.33 times more frequent than A2 alleles – 15 (30.0%) cases of 50 allocated alleles ( $\chi^2=5.63$ ,  $p=0.018$ ). Genotype distribution thyroid pathology owed that A1A1-genotype is more likely to be registered in adolescents with puberty menorrhagia than 1.25 times ( $\chi^2=10.14$ ,  $p=0.001$ ). By contrast, the relative frequency of A1A2-genotype on the contrary prevailed in the control group of 1.45 times ( $\chi^2=12.03$ ,  $p<0.001$ ). Homozygote mutation A2A2 was registered only in teenage girls with menorrhagia – 8.6% ( $n=6$  people). The relative frequency of "wild" A1 allele probably prevailed over the A2A2 genotype at 7.5 times ( $\chi^2=45.6$ ,  $p<0.001$ ).

The distribution of genotypes A1/A2 of itGB3 genome (GP IIIa) in teenage girls with menorrhagia against the background of thyroid pathology indicates a likely prevailing frequency of individuals with "favorable" A1 allele over such with A2A2 genotype as without pathology of the thyroid pathology, 12.3 and 9 times, respectively ( $\chi^2=35.9-41.8$ ,  $p<0.001$ ). A2A2 genotype by 2.5% ( $p>0.05$ ), over such in adolescents of the second group without problems with thyroid pathology.

Epidemiological analysis of the risk of puberty menorrhagia against the background of pathology of thyroid depending on genotypes and alleled state of the GP IIIa gene thyroid pathology owed an incorrect increase in the likelihood of their appearance in carriers A2A2-, A1A2-genotypes and A2 allele in 1.33, 1.24 and 1.27 times, respectively ( $OR=1.37-1.46$ ,  $p\geq 0.05$ ), for the lowest chances of menorrhagia in adolescents without disease ( $OR=0.69-0.73$ ,  $p\geq 0.05$ ).

**Conclusions.** The frequency of genotypes of the glycoprotein GP IIIa gene in the structure of puberty menorrhagia in the structure of the available thyroid pathology and risk factors for the development of uterine bleeding in teenage girls depending on gene polymorphism.

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## **CLINICAL ASPECTS OF PRESERVING THE REPRODUCTIVE HEALTH OF WOMEN WITH ATYPICAL ENDOMETRIAL HYPERPLASIA**

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**Introduction.** Under the conditions of low birth rates in Ukraine, the problem of maintaining reproductive health is extremely urgent and acquires high medical and social significance. The problem of hyperplastic processes of the endometrium (HPE) in women of reproductive age increases the attention of clinicians, is the cause of reduced fertility and the risk of developing oncological pathologies, which have been steadily increasing in recent years in many countries of the world, including Ukraine. Endometrial hyperplasia (HE) in women of reproductive age is the main cause of reduced fertility. This is the most common pathology of the uterus in women of childbearing age, the frequency of which has no tendency to decrease. According to scientific literature, GE accounts for 15–40% of all gynecological pathology. The occurrence of repeated episodes of endometrial hyperplasia (44.1–64.7%) and oncogenicity (up to 45.1%) are