

## Extragenital pain

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**Annotation:** The adverse effects of EGP on the course of pregnancy, childbirth and the postpartum period are varied and depend on the nature and severity of the underlying disease. Many extragenital diseases predispose to the development of obstetric complications. It can be said that arterial hypertension increases the risk of premature placental abruption and eclampsia, all hemophilic conditions - early postpartum hemorrhage, diabetes mellitus - abnormalities of labor, fetal distress during childbirth, shoulder dystocia, urinary tract infection - premature birth, etc. It is important to know that there is a specific and non-specific effect of a certain disease on the frequency of a certain complication. Examples of specific influence are polyhydramnios in diabetes mellitus, severe and early developing preeclampsia in arterial hypertension, uterine bleeding during labor in idiopathic thrombocytopenic purpura, late postpartum hemorrhage in von Willebrand disease, purulent-inflammatory processes in immunosuppressive conditions (constant intake of glucocorticoids and cytostatics, HIV infection), after splenectomy. In all these cases, patients with a certain EGP have specific obstetric risks. The adverse non-specific influence of EGP is associated with the general severe condition of the pregnant woman, the woman in labor, or the woman in labor. In this case, the number of obstetric complications increases significantly, but there is no clear dependence of the nature of these complications on the type of EGP. Thus, patients with very high pulmonary hypertension may experience miscarriages at various stages of pregnancy, premature births, hypotrophy, infarctions and other pathologies of the placenta, weakness or, conversely, excessively vigorous labor, postpartum endometritis, etc. Various complications often occur in patients with renal failure, chronic hepatitis and liver cirrhosis, systemic hematological pathology, and other serious diseases.

**Keywords:** anemia, diabetes, acute fatty liver disease, gingivitis, dermatosis.

Extragenital pathology is a combined group of various diseases that worsen or develop in women during pregnancy. This group does not include gynecological diseases and all kinds of obstetric complications of pregnancy. Extragenital pathology in pregnant women can be primary or not related to pregnancy. In turn, it is divided into chronic and acute EGP: Chronic extragenital pathology usually manifests itself during pregnancy. This is a group of diseases associated with the cardiovascular, bronchopulmonary, urinary and endocrine systems. Acute extragenital pathology is a group of infectious and surgical diseases, pneumonia, as well as neoplastic or tumor diseases. Secondary, or pregnancy-related EGP is an acute extragenital pathology that occurs during pregnancy. In turn, the

group of secondary extragenital pathologies includes such diseases of pregnant women as:- anemia;- gestational hypertension, diabetes, hyperthyroidism and pyelonephritis, thrombocytopenia, cholestatic hepatitis, acute fatty liver disease, peripartum cardiomyopathy, diabetes insipidus and dermatosis, glucosuria and gingivitis of pregnant women;

- postpartum thyroiditis, lymphocytic hypophysitis and pituitary infarction.

Extragenital pathology during pregnancy leads to the emergence of certain clinical problems, which are conventionally divided into therapeutic and obstetric, as well as perinatal.

Joint management of pregnancy in case of extragenital pathology by professional gynecologists and specialists in the profile of EGP of the medical center "Medicine and Beauty" ensures diagnosis and effective treatment of exacerbated ailments of the expectant mother in order to eliminate their negative impact on the normal development of the fetus. The need for late termination of pregnancy or early delivery based on indications from the woman is a complex obstetric problem. Late termination of pregnancy itself poses a significant risk to the health, and sometimes even the life, of the woman. It is difficult to implement technically, especially if the patient has contraindications to the use of prostaglandins (and in most cases this is the case). The means available to obstetricians and gynecologists today are clearly insufficient for the safe implementation of late termination in various types of severe EGP. The need for early delivery in cases where the cervix is not sufficiently mature also creates a complex obstetric problem. Most of the means of "cervical preparation" are ineffective. In addition, the clinical situation often does not give the doctor enough time to carry out such preparation. Increasing the number of cases of abdominal termination of pregnancy and delivery is a bad way, since this method significantly increases the risk of thrombotic, hemorrhagic, and infectious complications. Caesarean section, as is known, is not the most gentle and careful method of delivery in many types of EGP, and in some cases it is simply dangerous, for example, in cardiac pathology, due to very rapid and abrupt changes in hemodynamics.

What to do? There is no single recipe. In many situations, laminaria sticks and intra-amniotic hypertonic solution can be used. If the only possible way to terminate a pregnancy or deliver a baby early is a Caesarean section, it is necessary to weigh the risks of complications and carry out prevention in accordance with modern standards.

The need for an unusual method of delivery, caused not by the obstetric situation, but indicated in connection with the mother's EGP, is an objectively existing problem. It is clear that we are talking about a Caesarean section, for example, in case of an aortic

aneurysm, portal hypertension or after a hemorrhagic stroke. Many aspects of this problem have been discussed above: the risk of complications increases, but there is no choice, so it is necessary to reduce this risk by carrying out prevention. Another thing is important - not to invent non-existent indications. This is really a big problem in our country! What have you not read in birth histories?! Indications for a planned cesarean section included high myopia, peripheral retinal degeneration, mitral stenosis, atrial septal defect, severe pneumonia, leukemia, breast cancer, non-specific ulcerative colitis, myasthenia, multiple sclerosis... There is no answer to the question: where are such indications described or, better yet, legally enshrined? - By the way, in many of these cases, women died from pulmonary edema, pulmonary embolism, bleeding, sepsis, respiratory and multiple organ failure, and other causes that a cesarean section does not directly lead to, but increases the risk of them. What is the solution? And the solution is simple - follow the normative documents of the Ministry of Health of Ukraine, and not look for indications for a serious operation on the ceiling of the doctor's office. If only all the problems associated with EGP could be solved so simply!

Management of pregnancy in case of extragenital pathology in our clinic involves a complete examination of the pregnant woman's body in order to determine her condition. Based on the data obtained and the test results, appropriate treatment is prescribed. In the presence of serious problems associated with the health of the expectant mother, which can lead to an unfavorable course of pregnancy, they resort to a cesarean section. When contacting the medical center "Medicine and Beauty", you can be sure of the high competence of our specialized doctors and gynecologists, who will do everything possible to ensure that you and your future baby are healthy! Pregnant women with extragenital pathology are managed by experienced specialists who will monitor the development of the fetus and the health of the expectant mother and will be able to promptly take measures to prevent and stabilize the patient's condition. The obstetrician-gynecologist will recommend the best method of delivery that will be as gentle as possible for the woman and her baby. This is a large group of various and different diseases, syndromes, conditions in pregnant women, united only by the fact that they are not gynecological diseases and obstetric complications of pregnancy. Knowledge of the features of the course of pregnancy and childbirth in various diseases, careful joint observation by an obstetrician-gynecologist and a related specialist, timely prevention of complications of pregnancy and childbirth will minimize adverse outcomes for the mother and fetus. Today, only about 40% of pregnancies pass without any complications. Extragenital pathology in the early stages usually gives such complications of pregnancy as the threat of termination of pregnancy and late toxicosis. Prevention of extragenital pathology consists primarily in identifying possible chronic diseases. While some are well aware of all health problems, for others, an exacerbation of a particular disease during pregnancy can be a real surprise.

That is why many obstetricians and gynecologists advise undergoing a full medical examination even during the period of planning a child.

Kranetru detra srednesk prábotovanii organs of the abdominal cavity in pregnant women

1. Changes in the topography of the abdominal organs.

1. Features of immune and hormonal homeostasis, which changes

In the second half of pregnancy, acute appendicitis occurs with an erased clinical picture. During pregnancy, conditions arise for exacerbation of chronic appendicitis, which is associated with an increase in the level of placental hormones and proteins and their immunosuppressive effect.

Features of the clinical picture of acute appendicitis in pregnant women.

Significant EGP is a large group of diseases or conditions that affect the above indicators to varying degrees. The main danger of EGP is that it can cause maternal death. Below we will separately focus on this most unfavorable variant of the clinical significance of this pathology, and here we will only point out that there are diseases in which the risk of pregnancy for a woman's life is extremely high. Moreover, this applies even to those countries where modern medicine, as they say, works wonders. First of all, this applies to the syndrome of extremely high pulmonary hypertension (maternal mortality reaches 50%), cyanotic congenital heart defects, dilated cardiomyopathy, pheochromocytoma, acute leukemia, and some other diseases. Of course, mitral stenosis, pneumonia, viral hepatitis B, tuberculosis, and diabetes mellitus (the list could go on for a long time) can also lead to maternal death, but in these cases, in addition to the disease itself, most likely, a significant role is played by unqualified actions of doctors or inadequate behavior of the woman (self-medication, late visit to the doctor, refusal of the offered help).

EGP can significantly affect the condition of the fetus and thus increase perinatal morbidity and mortality. The most perinatally significant pathologies include diabetes mellitus, arterial hypertension, glomerulopathy, uncompensated dysfunction of the thyroid gland, and others.

EGP often leads to the development of obstetric complications during pregnancy and childbirth, and can also necessitate an unnatural abdominal method of delivery, which also significantly increases the likelihood of many complications. Pregnancy contributes to the progression of varicose veins and chronic venous insufficiency, and an increase in the frequency of venous thrombotic complications. There are many reasons for this. Due to an increase in the concentration of progesterone, the tone of the venous wall decreases, the diameter of the veins increases; hydrostatic pressure in the veins of the lower extremities and small pelvis increases, as intra-abdominal pressure increases,

compression of the inferior vena cava occurs, and as a result, venous blood flow slows down. Due to hyperestrogenemia, vascular permeability increases and, accordingly, the tendency to edema increases; the concentration of fibrinogen, VIII and a number of other blood clotting factors increases, its fibrinolytic activity decreases, and after childbirth a significant amount of tissue factor enters the blood. More frequent manifestations of urinary tract infections in pregnant women are facilitated by the expansion of the ureters due to the muscle relaxant effect of progesterone; mechanical obstruction of urodynamics (mainly on the right) due to compression of the ureters by the pregnant uterus and ovarian veins; increased urine pH; occasional occurrence of vesicoureteral reflux; increased bladder volume; hypercortisolemia, etc.

If this lecture were limitless, it would be possible to describe many other variants of the unfavorable influence of pregnancy on the course of various EGPs. However, we will limit ourselves to the above examples and note that this problem is absolutely objective; the doctor cannot change anything in the influence of the gestational process on the disease. Nevertheless, he can and even must know what this influence is, at what stage it is most significant, and be ready to respond adequately. In fairness, it should be noted that pregnancy has a positive effect on the course of a number of diseases, promoting their transition to remission and even reducing the need for treatment (rheumatoid arthritis, gastric ulcer and duodenal ulcer, nonspecific ulcerative colitis, some types of myasthenia, chronic adrenal insufficiency, heart defects with left-to-right shunting of blood without significant pulmonary hypertension). But since we are discussing problems caused by EGP, we will not dwell on this positive aspect in detail.

As already mentioned, EGP is a variety of different diseases. Therefore, there is an urgent need to systematize them. From our point of view, all EGP can be divided into non-pregnancy-related, or primary, and pregnancy-related, secondary (Fig. 1). The former, in turn, is divided into chronic, existing before pregnancy, and acute, occurring for the first time during pregnancy. Chronic EGP is represented by many diseases, among which the most important in obstetrics are cardiovascular, bronchopulmonary, liver, kidney, endocrine, etc. Acute EGP includes infectious diseases, pneumonia, surgical diseases, hemoblastoses. Of course, during pregnancy, a woman can develop any other disease, including one that will persist in the future, becoming chronic (glomerulonephritis, systemic lupus erythematosus, thyrotoxicosis, etc.), but for the EGP clinic it is acute, occurring for the first time in a previously healthy woman.

Self-medication should never be done. Only a responsible doctor (gynecologist, therapist, endocrinologist, etc.) has the right to make a decision and prescribe a particular drug.

EGP) is a large group of various and differently significant diseases, syndromes, conditions in pregnant women, united only by the fact that they are not gynecological diseases and obstetric complications of pregnancy. Such a definition of EGP as a group of various and differently significant nosologies shows the failure of this term, since its collectivity is based on the principle of "from the opposite": nosologies are united by the fact that they "ARE NOT ...". This leads to a more important drawback: EGP unites pathologies that outside of pregnancy are within the competence of completely different specialists - representatives of many independent clinical disciplines. And yet, the author considers the term "extragenital pathology" useful and having a deep clinical meaning. This meaning lies in the allocation of a section of obstetrics that is not the exclusive competence of an obstetrician-gynecologist. In other words, the classic tandem of "doctor and patient" in the EGP clinic is transformed into a mandatory trio of "two doctors and a patient", namely, an obstetrician-gynecologist, a specialist in the profile of extragenital diseases of pregnant women, and the pregnant woman herself. In many cases, this specialist can be a therapist who has experience working with pregnant women, knows the physiology of pregnancy and the peculiarities of the course of diseases during the gestation period. Such therapists must be specially trained, they should be on the staff of antenatal clinics, maternity hospitals, and especially on the staff of specialized EGP departments for pregnant women. However, when there is a need to provide a pregnant patient with highly qualified medical care (for example, performing cardiac or neurosurgical surgery, hemodialysis, changing the method of hypoglycemic therapy, eliminating urodynamic disorders, etc.), naturally, a narrow specialist is involved. It is believed that the prevalence of EGP among pregnant women is growing. Meanwhile, there are no strict statistics based on epidemiological studies in our country. On the contrary, in recent years there has been a stabilization or even a downward trend in the rates of those diseases for which there is official data from the Ministry of Health of Ukraine. Thus, if in 2003 anemia was observed in 38.4% of pregnant women, then in 2010 – in 26.4%, diseases of the circulatory system – in 6.7 and 6.2%, diseases of the genitourinary system – in 16.7 and 14.6% of women, respectively. At the same time, the prevalence of all types of EGP in the population of pregnant women is very high and amounts (despite the young age) to at least 50%. Since EGP includes a huge number of diseases of varying significance, it is very important for clinical purposes to divide it into significant and insignificant, or more precisely, into minor significance. Minor or insignificant types of EGP include those diseases or conditions in which the rates of maternal and perinatal mortality, the frequency of complications of pregnancy, childbirth and the postpartum period, perinatal morbidity do not differ from the general population. In other words, this is a pathology that has virtually no effect on the course and outcome of pregnancy, the condition of the fetus and newborn. A special group is secondary EGP,

which includes conditions etiologically associated with pregnancy and, as a rule, passing after its completion. In most cases, it is known due to what anatomical, physiological or biochemical changes inherent in pregnancy itself, a particular condition arises. This secondary nature in relation to pregnancy is emphasized in the very names of these conditions by the presence of the term "pregnancy" or a derivative of it. The most common and most significant types of secondary EGP: anemia of pregnancy, gestational hypertension, gestational diabetes, gestational pyelonephritis, thrombocytopenia of pregnancy, cholestatic hepatitis of pregnancy (obstetric cholestasis), acute fatty degeneration of the liver, peripartum cardiomyopathy, diabetes insipidus of pregnancy, dermatosis of pregnancy (there are many variants of pregnancy-associated dermopathy, each of which has its own name), gestational hyperthyroidism, glucosuria of pregnancy, gingivitis of pregnancy. To a certain extent, specific postpartum extragenital diseases can be added to this list, since the main role in their etiology is played by changes developing during pregnancy or childbirth. The most well-known postpartum thyroiditis, lymphocytic hypophysitis and pituitary infarction (Sheehan's syndrome).

It is important to emphasize that all these conditions - common and rare, life-threatening and prognostically favorable, affecting perinatal losses and not - are within the competence of a therapist, a specialist in EGP.

### Problems associated with EGP

The word "problems" in this case should be understood in the literal sense, i.e. as complex, often contradictory situations that require study and adequate resolution. Therefore, I will try to determine what clinical problems actually arise during pregnancy due to the presence of EGP, which of them exist objectively, and which are of iatrogenic origin, and whether there is an acceptable solution to these problems today. Systematizing the problems caused by EGP, we can propose the following scheme (Fig. 2). Conventionally, all of them are divided into maternal and perinatal, and maternal in turn - into therapeutic (or, more precisely, somatic) and obstetric. Therapeutic (somatic) problems arise due to: the negative impact of pregnancy on the course of extragenital disease, objective complexity, or rather complication compared to the period outside pregnancy, of clinical diagnostics, limitations of diagnostic and therapeutic options due to the presence of the fetus.

Obstetric problems are caused by: the impact of the disease (specific and non-specific) on the course of pregnancy, childbirth and the postpartum period, the occurrence of specific obstetric risks associated with the nature of EGP, the need in some cases for termination of pregnancy or early delivery, as well as the use of a special method of delivery not associated with the obstetric situation.

Perinatal problems arise due to the impact of the disease itself on the fetus, the harmful effects of drugs and prematurity.

Let us dwell on each of these objectively existing problems. Negative impact of pregnancy on the course of EGP. The physiological course of pregnancy is characterized by significant, period-dependent, often phase functional and metabolic changes, which by their nature can be unfavorable for various somatic diseases. The most well-known unfavorable effect of normal gestational changes in hemodynamics is on the course of most heart diseases. Thus, during pregnancy, the volume of circulating blood and cardiac output increase significantly, which contributes to the occurrence or progression of hemodynamic decompensation in mitral, aortic and pulmonary stenosis, dilated cardiomyopathy, myocarditis, myocardial fibrosis. Peripheral vascular resistance decreases, which leads to increased shunting of venous blood in defects with right-to-left shunting, i.e. to increased cyanosis, hypoxemia, dyspnea and, in general, to a significant deterioration of the already severe condition in such diseases. The same factor leads to a decrease in the stroke volume of the left ventricle in hypertrophic cardiomyopathy, which directly leads to an increase in heart failure. For many heart diseases, such normal pregnancy manifestations as an increase in heart rate, dilation of the heart cavities and changes in its topography in the chest cavity, a decrease in the oncotic pressure of plasma, physiological hypercoagulation and hemodilution, aortocaval compression and a number of others are also unfavorable. It is rightly believed that pregnancy destabilizes and makes the course of diabetes mellitus more labile. The placental hormones that appear and the level of normal hormones with a counter-insular effect (placental lactogen, estradiol, prolactin, cortisol), which significantly increases during pregnancy, are "to blame" for this. A certain contribution is made by the consumption of glucose by the fetus, which leads to a normal decrease in fasting glycemia in non-diabetic patients. Fetal development also requires higher postprandial glycemia with a slower return to baseline glucose levels. Pregnancy is generally characterized by a state of insulin resistance. It should also be noted that insulin requirements change significantly at different stages of the gestational period, creating conditions for hypoglycemia (in the first trimester and after 36-37 weeks), hyperglycemia, and ketosis.

The complication of clinical diagnostics during pregnancy also has objective reasons. One of them is the atypical course of the disease. This fully applies to surgical pathology of the abdominal cavity. A classic example is the atypical localization of pain in appendicitis due to a change in the location of the vermiform appendix. The clinical picture of intestinal obstruction, acute pancreatitis, hepatic colic and other acute diseases may not be so bright, "blurred", in general, not typical. Another reason is the masking or, conversely, the simulation of EGP symptoms by the pregnancy itself or its complications.



Signs of pheochromocytoma, a pathology with a very high maternal mortality, are often taken for manifestations of preeclampsia, and severe adrenal insufficiency - early gestosis. Tachycardia and tachypnea inherent in pregnancy, as well as moderate swelling in the legs can be perceived as manifestations of heart failure. Symptoms similar to the clinical picture of a brain tumor (dizziness, nausea, headache, weakness) may well be taken for normal manifestations of pregnancy in the early stages, and a convulsive syndrome that first appeared at the end of pregnancy - for an attack of eclampsia. It is more difficult to diagnose hepatitis, since similar symptoms have pregnancy-related acute fatty hepatosis and obstetric cholestasis.

During a normal pregnancy, the norms of many hematological, biochemical, endocrinological and other indicators change significantly. On the one hand, it is very important for the doctor to know this and not to panic, seeing in the analysis, for example, moderate thrombocytopenia, 1.5 times increased cholesterol, 2 times increased alkaline phosphatase or 8 times increased prolactin. On the other hand, significantly changed examination results may actually indicate the presence of pathology, or may be associated only with pregnancy.

Pregnancy is capable of distorting or, to put it mildly, significantly changing the physical manifestations of EGP. Functional heart murmurs may appear, which indicate nothing, and murmurs of defects may weaken. Physical manifestations of pneumonia and bronchial asthma change during pregnancy, signs of pneumothorax are masked. It is also known that the accuracy and information content of many examination methods during pregnancy decreases, the number of false positive results increases. Can we, doctors, influence all this? No, we cannot. But we must know that this happens, and we are obliged to gain experience. Only our education and experience can help, despite objective difficulties, to establish the correct diagnosis.

The limitations of diagnostic and therapeutic options are caused not only by the presence of the fetus, for which many modern diagnostic and therapeutic methods are potentially dangerous, but also by the occurrence of side effects of some medications that do not occur outside of pregnancy. We are talking about the stimulating or inhibitory effect on the motor activity of the uterus of drugs prescribed in connection with the mother's EGP -  $\beta$ -blockers, calcium antagonists, magnesium sulfate, sympathomimetics. However, this problem is not so significant. What is more important is that until now invasive diagnostic and therapeutic procedures performed under constant X-ray control, as well as computed tomography, mammography, scintigraphy and other research methods using radioisotopes are considered contraindicated for pregnant women. Radioiodine therapy and radiation therapy are unacceptable during pregnancy. Large-scale and long-term surgical interventions are carried out in a limited manner. In any case, they are associated with a

high risk of spontaneous termination of pregnancy and damage to the fetus. And finally: almost the majority of medications available to a doctor are contraindicated according to the instructions for medical use during pregnancy or at certain stages. In general, if these instructions are not violated, many diseases in pregnant women cannot be treated! This problem is the most promising and rapidly changing of all those previously discussed. Contraindications to many high-tech interventions are being revised, indications for surgical treatment are expanding, new safe methods of diagnosis and treatment are being created. In addition, if all the above-discussed problems are absolutely objective, then the problem of limited diagnostic and therapeutic capabilities has a lot of subjective. Thus, fibrogastroduodenoscopy, contraindicated two decades ago (it was believed that it could provoke termination of pregnancy or premature birth), turned out to be completely safe and is very widely used today. Endovascular cardiological procedures are increasingly being performed during pregnancy, and on a planned basis. In this case, they only try to avoid irradiation of the abdominal cavity (the catheter is inserted blindly or through the brachial artery). Indeed, unsafe antitumor chemotherapy and radiation therapy in the area above the diaphragm are also often used during pregnancy, but only not in the first trimester and with certain precautions (shielding of the uterus). A very painful subjective problem is excessively broad contraindications to the use of drugs during pregnancy. The caution and caution of drug developers and doctors can be understood: they have learned from the sad experience of the twentieth century - the thalidomide tragedy; transplacental carcinogenesis, the manifestations of which were revealed a good two decades after the use of diethylstilbestrol by pregnant women; a phenomenon called behavioral teratology, etc. But it is impossible to ignore the accumulating positive experience, it is impossible not to generalize the thousands of observations of the use of the drug by pregnant women without consequences for the fetus and not to make adjustments to the instructions for this drug! I have personally addressed this topic many times, actively defended the regulatory change to the section "Use during pregnancy and lactation" in the instructions for medical use of drugs, the introduction in Ukraine of a very convenient FDA system that provides for the division of drugs into five categories, instead of our current one, which has only two categories. I am forced to admit the futility of these efforts... However, let us not end such an important subsection of the lecture on a pessimistic note. Among the somatic maternal problems caused by EGP, the majority are completely objective. They can only be overcome with knowledge and experience. The problem of the limitations of our diagnostic and therapeutic capabilities is largely subjective, largely depends on us, it is gradually being resolved and is becoming less acute.

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