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CORRELATION BETWEEN BIOCHEMICAL MONITORING AND MEASUREMENT OF THE WAVE VELOCITY OF BLOOD FLOW IN THE UMBILICAL CORDE OF THE HUMAN FETUS ON THE BACKGROUND OF INTRAUTERINE INFECTION

Khatamova Matluba Tilavona
Associate Professor of the Department of Obstetrics and Gynecology №2
Bukhara State Medical Institute named after Abu Ali ibn Sino,Uzbekistan, Bukhara
ORCID ID 0000-0002-0279-0240

Abstract: Despite the clinical significance of the problem of IUI during pregnancy, there is still no algorithm that allows for an integrated approach to diagnostic and therapeutic measures. Timely diagnosis and reasonable use of antimicrobial drugs can become a promising direction in the complex of therapeutic measures for the prevention of pregnancy complications and adverse perinatal outcomes in IUI, the correlation between biochemical monitoring and measurement of wave velocity of blood flow in the umbilical cord of a human fetus against the background of intrauterine infection.

INTRAUTERINE INFECTION DURING PREGNANCY

Recently, there have been more and more reports on the role of intrauterine infection (IUI) in pregnant women in the occurrence of a wide range of obstetric and perinatal complications. To date, there is no generally accepted terminology for this complication. IUI should be considered as a spectrum of infectious and inflammatory processes in various structures of the placenta. The diagnosis of IUI during pregnancy presents considerable difficulties. Verification of IUI is possible only on the basis of a morphological study of the placenta. In this regard, this diagnosis is made mainly retrospectively, after the complications associated with it have been realized. At the present stage, the search for non-invasive markers of subclinical IUI continues. Much attention is paid to the peculiarities of the course of pregnancy, ultrasound signs, study of immune factors. No less challenging than diagnosis is the treatment of IUI. A review of the latest publications on the pathogenesis, diagnosis and treatment of IUI during pregnancy was carried out.

Despite the clinical significance of the IUI problem during pregnancy, there is still no algorithm that allows for an integrated approach to diagnostic and therapeutic measures. Timely diagnosis and reasonable use of antimicrobials can become a promising direction in the complex of therapeutic measures for the prevention of pregnancy complications and adverse perinatal outcomes in IUI.

At present, a sufficient amount of convincing data has been accumulated on the role of infectious processes in the reproductive tract in the development of obstetric complications. Infectious agents can cause the formation of placental insufficiency, miscarriage, pathology of the fetus and newborn due to the development of a local or

systemic inflammatory response. The infectious process, acting as a trigger, launches a chain of immunopathochemical reactions or participates in the maintenance of previously induced pathophysiological changes, contributing to the genesis of major obstetric syndromes.

Most modern publications are mainly devoted to the study of infectious pathology of the lower reproductive tract, namely, dysbiotic and inflammatory processes of the vagina and cervix. The increased interest in the study of disorders of the vaginal microbiocenosis in pregnant women is associated primarily with the emergence in recent years of new diagnostic capabilities, as well as with the accumulated evidence base of the influence of dysbiotic processes on gestation outcomes. So, in women with miscarriage, pronounced violations of the vaginal microbiocenosis, including differences in the species composition of lactobacilli, were established, compared with healthy ones.

The most discussed form of genital infection in pregnant women remains bacterial vaginosis, the role of which is considered in the development of complications such as intra-amniotic infection, premature rupture of membranes (PROM), and preterm birth. To a lesser extent, information about the inflammatory process of the cervix in pregnant women is presented. However, there are studies in which cervicitis appears as one of the most common forms of genital infection in women with complicated pregnancy [10]. At the same time, the role of almost all microorganisms tropic to its epithelium has been confirmed in the development of the infectious process in the reproductive tract of women.

Purpose of the study– correlation between biochemical monitoring
and measuring the wave velocity of blood flow in the umbilical cord of a human fetus,
due to intrauterine infection

Establish a correlation between fetal oxygenation and CBS, determined using transabdominal blood sampling from the umbilical cord, and the pulsation index (PI) in high-risk pregnancy against the background of intrauterine infection. In 14 high-risk women who were delivered by caesarean section between the 30th and 35th weeks of pregnancy, PI (pulsation index) was determined in the umbilical artery. In 10 of them, blood was taken from the vessels of the umbilical cord by the transabdominal route under ultrasound control. In addition, arterial and venous blood from the umbilical cord was taken from all patients during the operation. Blood gases, KOS and lactate concentration were determined.

resultsresearch: A close relationship was found between PI (pulsation index) and pH, Pco2 and lactate content in umbilical cord venous blood taken in utero. PI (pulsation index) correlated well with the same indicators of venous and arterial cord blood taken during caesarean section. Cord venous blood obtained transabdominally has a higher O2 content than blood taken by caesarean section. No significant correlation was found between the content of O2 in the venous blood of the umbilical cord during transabdominal sampling and PI (pulsation index). With PI (pulsation index)> 1.5, the amount of lactate in the venous blood of the umbilical cord increases

sharply.

In the development of the infectious process in the fetus, the type of pathogen, its virulence, the ways of infection from mother to fetus, the protective reserves of the mother's body and the ability of the fetus to an immune response are important.

According to modern data, the number of IUI cases varies widely from 6 to 70%. Recently, the structure of the infectious morbidity of pregnant women, women in childbirth and puerperas, as well as the fetus and newborn, has changed. It has been proven that the causative agents of IUI are more than 27 species of bacteria, many viruses, parasites, 6 species of fungi, 4 species of protozoa and rickettsia. So, according to a number of researchers, chlamydia (17-50%) and viruses (herpes simplex virus, HSV - 7-47%, cytomegalovirus, CMV - 28-91.6%, enteroviruses - 8-17%) are considered the predominant pathogens of antenatal infections.). The causative agents of intranatal infections are group B streptococcus (3-12%), staphylococci (1-9%), fungi of the genus Candida (3-7%). Associations of pathogens occupy a leading position (75-95%).

It is known that most bacteria exist in nature in the form of specifically organized biofilms (biofilms). This form of existence creates a lot of advantages for bacteria. Bacteria in biofilms have an increased survival rate in the presence of aggressive substances, immune defense factors, and antibiotics. In this regard, one of the main problems of practical medicine is the problem of treating diseases of microbial origin.

In our study, according to the results of bacteriological analysis of the species composition of the vaginal biotope, the strongest influence of Streptococcus faecalis (p=0.00171), E. coli (p=0.01424) and Staphylococcus epidermidis (p=0.02714) on the implementation of intrauterine infection was revealed. fetus. When assessing the pathogens identified in the cervical canal of pregnant women by polymerase chain reaction (PCR) and enzyme immunoassay (ELISA), the following was established: in the group without the implementation of IUI, mycoplasma, chlamydia and ureaplasma accounted for 8%, CMV - 20%, HSV - 36%, candida - 3%, associations - 60%. When analyzing a group of newborns with the implementation of IUI, the most common pathogens were identified. So, mycoplasmas, chlamydia and HSV were found in 50%, CMV infection was detected in 45% of cases, ureaplasmas (20%) and candida (15%) were less common, associations were observed in 95%.

Conclusion: Thus, the combination of biochemical studies of fetal blood during transabdominal sampling under ultrasound control using the Doppler method allows us to distinguish among high-risk pregnant women those who have an increased risk of fetal disorders.

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