



INTRAUTERINE INFECTION

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Article history:

Abstract:

Received: December 20th 2023

Accepted: January 14th 2024

Published: February 21st 2024

Currently, against the background of a low level of infant mortality in our country, there remains a high incidence in the structure of infections specific to the early neonatal period, among which intrauterine infections occupy a leading position. Intrauterine infection of the fetus and newborn plays a significant role in the development of infectious and inflammatory diseases.

Keywords: intrauterine infection, treatment, method, newborn

INTRODUCTION

Infectious pathology is one of the most pressing problems of perinatology, which determines the high level of morbidity and mortality of newborns. Intrauterine infection of the fetus and newborn plays a significant role in the development of infectious and inflammatory diseases [1, 3].

Intrauterine infection (IUI), or infectious process, is usually understood as the interaction of a microorganism with a macroorganism under the influence of the external environment. However, not every meeting of a microorganism with a macroorganism ends in the development of an infectious disease. An infectious disease is spoken of only if, as a result of the influence of a microorganism on a macroorganism, the functions of the latter are disrupted against the background of the formation of the morphological substrate of the disease and the appearance of clinical symptoms detected prenatally or shortly after birth [2].

MATERIALS AND METHODS

A child's body cannot be considered as a miniature adult's body. The reaction of a newborn to exposure to an infectious agent is fundamentally different from that of older children and adults. This difference is determined by the physiological immaturity of all components that provide both nonspecific protection of the body and its specific reactivity when encountering an infectious agent [3].

In neonatology, the concepts of "intrauterine infection", "intrauterine infection", and "congenital infection" are often confused.

According to literature data from near and far abroad, perinatal medicine specialists argue that the term "intrauterine infection" should not be used as a diagnosis. This term is used to denote the fact of intrauterine contact of the fetus with microorganisms, potential infectious agents, but it does not contain information about the presence or absence of an infectious disease [4].

RESULTS AND DISCUSSION

Intrauterine infection of the fetus and newborn is understood as a pathological condition that is formed under the influence of many unfavorable factors, among which the leading place is occupied by the infectious pathology of the mother and the associated microbial intrauterine infection of the amniotic fluid, placenta, umbilical cord, fetus against the background changes in the immunological reactivity of a newborn without signs of an infectious disease [5].

Today, the implementation of intrauterine infection into intrauterine infection may have the following options:

- If there are obvious signs of infection in a pregnant woman, woman in labor, or postpartum woman, the infection process in the child does not occur due to the activation of the protective mechanisms of the woman's body (placenta, immunity, production of protective immunoglobulins of class G).

- The infection in the mother is asymptomatic, but clinically manifests itself in the child.

- Infection manifests itself immediately after birth in the form of: asphyxia, respiratory disorders with instability of the functioning of the cardiovascular system, neurological disorders, etc.

- If there are obvious signs of infectious pathology in the mother, the child's condition at the time of birth is not impaired, but subsequently a clinical picture of the infectious process appears.

The frequency of intrauterine infections has not yet been established, however, according to a number of authors, the prevalence can reach 10-15%, and intrauterine infection ranges from 6 to 53%, reaching 70% among premature infants. In 37% of cases, the cause of death of newborn children is infectious pathology. Diagnosis of intrauterine infections is no more than 3-5% [3].

Risk factors for the development of intrauterine infection

In the antenatal period:



1. Complicated obstetric history – miscarriages, stillbirths, previous premature births, death of previous children in the neonatal period, abortions.
2. Pathological course of pregnancy – gestosis, threat of miscarriage, polyhydramnios, isthmio-cervical insufficiency and its surgical correction, anemia of pregnant women, exacerbation of chronic infectious and somatic diseases.
3. Genital pathology – urogenital infection, colpitis, endocervicitis.
4. Pathology of the placenta.
5. Previous infectious diseases during pregnancy.

In the intranatal period, risk factors for the development of infection include:

1. Complicated course of labor – infectious diseases during labor (urogenital infection, asymptomatic bacteriuria, cystitis, exacerbation of chronic foci of infection, ARVI, pyelonephritis), fever, prenatal rupture of amniotic fluid (anhydrous interval of more than 6 hours), multiple vaginal examinations, prolonged labor.
2. Birth of a child in asphyxia, with aspiration syndrome, carrying out resuscitation measures.
3. Infectious process in the mother in the postpartum period.
4. Hypothermia of the child.
5. Violation of the sanitary-epidemiological regime and care rules.

Routes of infection. The prevailing opinion is that the fetus is most often infected through the ascending route (from the mother's genital tract), especially with bacterial vaginosis. The persistence of microorganisms in amniotic fluid is due to the ability of most of them to disrupt the bactericidal properties of a given substrate. Bacterial chemotaxins stimulate the "migration" of neutrophils from the blood of the umbilical cord vessels and from the intervillous blood (through the chorionic plate) into the amniotic fluid. Neutrophils and bacteria contained in amniotic fluid secrete phospholipase. The latter, during the fermentation process, forms arachidonic acid from amnion cells, which is subsequently converted into prostaglandins E₂ (dilation of the cervix) and F_{2a} (inducing uterine contractions) [3].

The antimicrobial activity of amniotic fluid is short-lived. Their minimum bacterial contamination occurs when the cervix is dilated to 4 cm, the maximum – when the cervix is dilated to 6 cm or more. Microbial contamination of amniotic fluid with intact membranes, as well as with early rupture of the membranes, creates conditions for the occurrence of inflammatory foci in the placenta and in the vessels of the umbilical cord. In this regard, there is a danger of penetration of the pathogen to the fetus through the hematogenous route. Infection can also occur in other ways: transplacental, transdecidual (from purulent foci between the wall and the decidua), descending

(through the fallopian tubes from a foci in the abdominal cavity) [3].

The nature and severity of the infectious process in the fetus is determined by the stage of its intrauterine development at the time of infection.

Pathogenesis. Hypoxia, exposure to metabolic products, and hyperthermia play an important role in the pathogenesis of intrauterine damage to the fetus. The influence of these factors depends on the period of their exposure (preimplantation, embryonic, early and late fetal, intrapartum, neonatal). During the period of organogenesis and placentation, infectious embryopathies arise. They cause the formation of gross malformations in the embryo that are incompatible with life, and the pregnancy ends in spontaneous miscarriage. From the 4th to the beginning of the 7th month of the gestational period, the fetus develops specific sensitivity to infectious agents. In fetopathies of septic etiology, developmental defects can form. They are the result of proliferative and alternative processes leading to narrowing and obstruction of canals and openings.

CONCLUSION

Summarized literature data on the issues of pathogenesis, clinical picture, treatment, diagnosis and prevention of intrauterine infections will reduce the morbidity and mortality in the structure of infections specific to the early neonatal period - intrauterine infections, as well as disability among young children due to intrauterine infections.

REFERENCES

1. Current problems of neonatology / edited by. ed. N. N. Volodina. – M.: GEOTAR-MED, 2014. – 448 p.
2. Childhood diseases / ed. N. N. Volodina, Yu. G. Mukhina. – M.: Dynasty, 2011. – T. 1: Neonatology / ed. N. N. Volodina, Yu. G. Mukhina, A. I. Chubarova. – 512 p.
3. Mayansky, A. N. Infectious relationships in the "mother-fetus" system / A. N. Mayansky // Issues. diagnostics in pediatrics. – 2019. – T. 1, No. 5. – P. 5-13.
4. Neonatology: trans. from English / under general ed. T. L. Gomelly, M. D. Cunningham. – M.: Medicine, 2018. – 640 p.
5. Neonatology: textbook. manual for higher students textbook establishments / [N. N. Volodin and others] ; under general ed. N. N. Volodina, V. N. Chernyshova, D. N. Degtyareva. – M.: Publishing house. Center "Academy", 2015. – 448 p.