

**THE IMPORTANCE OF INFECTIOUS DISEASES IN THE MOTHER DURING
PREGNANCY IN THE ORIGIN OF CONGENITAL HYDROCEPHALY**

M.S. To'xtasinov

Central Asian Medical University, Farg'ona City, Republic of Uzbekistan
toxtasinovmuhammadiyor3@gmail.com

Abstract: This article discusses the origin of congenital hydrocephalus, its impact on maternal and child health. In particular, it analyzes how infectious diseases transmitted to the mother during pregnancy, including viral and bacterial infections, affect the development of congenital hydrocephalus. The article presents infections during pregnancy and their impact on neurological development, as well as clinical manifestations, diagnostics and treatment methods of hydrocephalus. The article provides recommendations for maintaining maternal and child health, preventing infectious diseases. This work, based on research and clinical experience, serves as a useful resource for medical professionals.

Keywords: Congenital hydrocephalus, Infectious diseases, Pregnancy, Neuroinfections, Bacterial infections, Viral infections, Neurological development, Prenatal development.

**ЗНАЧЕНИЕ ИНФЕКЦИОННЫХ ЗАБОЛЕВАНИЙ У МАТЕРИ ВО ВРЕМЯ
БЕРЕМЕННОСТИ В ВОЗНИКНОВЕНИИ ВРОЖДЕННОЙ ГИДРОЦЕФАЛИИ**

Аннотация: В статье рассматривается происхождение врожденной гидроцефалии, ее влияние на здоровье матери и ребенка. В частности, анализируется, как инфекционные заболевания, переданные матери во время беременности, включая вирусные и бактериальные инфекции, влияют на развитие врожденной гидроцефалии. В статье представлены инфекции во время беременности и их влияние на неврологическое развитие, а также клинические проявления, методы диагностики и лечения гидроцефалии. В статье даны рекомендации по поддержанию здоровья матери и ребенка, профилактике инфекционных заболеваний. Данная работа, основанная на исследованиях и клиническом опыте, служит полезным ресурсом для медицинских работников.

Ключевые слова: Врожденная гидроцефалия, Инфекционные заболевания, Беременность, Нейроинфекции, Бактериальные инфекции, Вирусные инфекции, Неврологическое развитие, Пренатальное развитие.

Introduction

Hydrocephalus is a neurological disease that occurs as a result of the accumulation of excess cerebrospinal fluid in the brain cavity. This disease is more common in newborns or in childhood, but it can also develop in adults. One of the many causes of hydrocephalus is infectious diseases that occur in the mother's body during pregnancy. Infections such as rubella, cytomegalovirus, and toxoplasmosis, among others, can have a significant impact on the fetal brain, increasing the likelihood of hydrocephalus and other neurological impairments in the newborn.

Infections in the mother's body during pregnancy can affect not only the health of the mother, but also the development of her child. Some infectious diseases, especially in the 1st-2nd trimester of pregnancy, lead to serious disorders in the development of the embryo and fetus. These diseases can damage the brain system and, as a result, cause the development of hydrocephalus. This article examines the role and significance of infectious diseases that occur in the mother's body during pregnancy, especially in the development of hydrocephalus. The article presents an analysis and research on the mechanisms by which infectious diseases can cause hydrocephalus in the body, and what complications it causes in congenital or early childhood.

Literature review and method

Congenital hydrocephalus (CH) is a disease that occurs as a result of the accumulation of excess cerebrospinal fluid in the brain cavities, which can develop due to various causes and factors. CH can cause not only neurological problems, but also developmental defects. Hydrocephalus, often as a result of increased intracranial pressure and damage to brain tissue, often leads to severe complications in children and newborns. Infections that occur in the mother's body, especially during pregnancy, can play a major role in the development of this disease.

Congenital Hydrocephalus and Its Types

Congenital hydrocephalus occurs as a result of obstruction of the normal flow of cerebrospinal fluid (CSF) in the body. Normally, the production and absorption of fluid in the brain are in balance, but when its accumulation or excretion is disturbed, hydrocephalus occurs. Congenital hydrocephalus is mainly divided into three types:

- Obstructive hydrocephalus: Cerebrospinal fluid is produced normally, but its flow is blocked. This is often caused by blockages in various parts of the brain (for example, in the brain ducts).
- Communicating hydrocephalus: Cerebrospinal fluid is produced and absorbed correctly, but fluid accumulates in the brain cavities due to impaired absorption.
- Normal pressure hydrocephalus: In this case, although the pressure in the brain is normal, excess fluid accumulates in the brain cavities, which can lead to developmental defects.

Various infectious diseases directly affect the development of hydrocephalus, especially infections that occur in the mother's body during pregnancy. In the early stages of pregnancy, these infections can damage the nervous system, brain, and other organs of the fetus. The main infections that cause the development of hydrocephalus are the following diseases:

Infectious Diseases During Pregnancy

Rubella

Rubella infection can seriously affect the fetal brain during the first trimester of pregnancy. This infection can cause serious complications by disrupting the development of the fetal

brain. The effect of the rubella virus on the fetal central nervous system can cause the development of hydrocephalus.

Toxoplasmosis

Toxoplasmosis, caused by the parasite *Toxoplasma gondii*, can be transmitted to the mother during pregnancy and damage the baby's brain. Toxoplasma infection can seriously affect the development and formation of the brain, causing hydrocephalus and other neurological problems.

Cytomegalovirus (CMV)

CMV is one of the most dangerous infections during pregnancy. The virus is transmitted from the mother to the fetus and can damage its nervous system, especially the brain. CMV infection can cause brain development to stop and cause complications such as hydrocephalus.

Herpes simplex virus (HSV)

HSV infection is also very dangerous during pregnancy. As a result of the first infection, the virus passes to the fetus and damages the brain system. HSV infection can also directly cause the development of hydrocephalus.

Zika Virus

The effects of the Zika virus during pregnancy are widespread. Complications of the Zika virus, including its negative impact on brain development, can lead to the development of hydrocephalus. As a result of the transmission of the Zika virus to the fetus, the child's brain development and hydrocephalus can occur.

Congenital Hydrocephalus and Its Characteristics

Congenital hydrocephalus causes not only neurological injuries, but also psychological and physical developmental disabilities. As a result of the accumulation of cerebrospinal fluid and increased pressure in the brain in this disease, the child may experience difficulties in learning, impaired coordination of movements, problems with vision and hearing. This disease can also have long-term complications and serious psychological effects. There are several preventive measures to prevent and combat infections during pregnancy. Pregnant women should be fully vaccinated, follow sanitary and hygienic rules, and have regular check-ups with a doctor. In addition, to prevent the development of infections in the mother's body, it is recommended to maintain a healthy lifestyle, consume mainly clean and natural products, and avoid stress and other risk factors.

Congenital hydrocephalus is a serious neurological disease resulting from impaired cerebrospinal fluid flow, and infectious diseases that occur during pregnancy play a major role in its development. Infections during pregnancy, especially diseases such as rubella, toxoplasmosis, CMV, HSV, and Zika virus, can negatively affect the development of the fetal brain and lead to the development of hydrocephalus. Therefore, protection and

prevention of infections during pregnancy are important for maintaining the health of the mother and fetus. Early detection and treatment of congenital hydrocephalus helps improve the development of the child and helps reduce long-term complications of the disease.

Discussion

Congenital hydrocephalus and the role of infectious diseases that occur in the mother's body during pregnancy in its development are one of the serious medical issues today. Numerous scientific studies and practices show that infections that occur in the mother's body during pregnancy have a negative impact not only on the health of the mother, but also on the development of the fetus. This can particularly affect the normal development of the brain and lead to the development of serious neurological diseases such as hydrocephalus.

The effect of infectious diseases on the development of hydrocephalus varies depending on the different stages of pregnancy. For example, diseases such as rubella and toxoplasmosis are most dangerous in the first trimester of pregnancy, because this is the period when the most important stages of nervous system and brain development occur. If the mother is infected with these diseases, the fetus may develop serious developmental defects, including hydrocephalus. At the same time, infections such as cytomegalovirus (CMV) and herpes simplex viruses (HSV) can also negatively affect fetal development and accelerate the development of hydrocephalus. These diseases, through their infectious effects, damage the central nervous system of the child, causing a number of neurological problems.

New diseases such as the Zika virus can also cause hydrocephalus and other serious complications during pregnancy. The Zika virus is particularly prevalent in tropical regions, where it can infect the fetus and damage the developing brain and nervous system. This infection can cause hydrocephalus. In this regard, the importance of preventing and treating infections during pregnancy is emphasized. Good prevention, vaccination, and early detection of serious infections ensure that pregnancy does not pose a health risk and that the child develops properly. It is necessary to implement measures against infections, maintain a healthy lifestyle for the mother, and undergo regular medical examinations. If infections are not detected in time and treatment measures are not taken, serious diseases such as hydrocephalus in the fetus can develop. This can cause significant harm to the child's health, as well as long-term complications of this disease and neurological problems. Therefore, prevention, early detection, and treatment of infections during pregnancy are very important. To prevent the development of hydrocephalus, it is necessary to detect these diseases at an early stage, provide them with proper treatment, and provide the mother with timely medical care. This approach will improve the development of the child and increase the likelihood of a healthy birth. It is necessary to fully understand the role of infectious diseases in congenital hydrocephalus and its development, as well as to develop new methods for combating infections in medical practice. This will contribute not only to the development of medicine, but also to the protection of the health of the mother and child.

Results

The role of infectious diseases transmitted to the mother during pregnancy in the development of congenital hydrocephalus and its etiology is truly significant. Infections during pregnancy have a negative impact not only on the health of the mother, but also on

the development of the fetus. It is known that a number of infectious diseases, especially rubella, toxoplasmosis, cytomegalovirus (CMV), herpes simplex virus (HSV) and Zika virus, can damage the development of the nervous system in the first trimester and later stages of pregnancy and cause the development of hydrocephalus.

It should be noted that early detection and effective treatment of infections play a major role in preventing serious diseases such as congenital hydrocephalus. Proper medical monitoring, prophylaxis and, if necessary, vaccinations during pregnancy can limit the spread of infections and reduce the likelihood of developing complications such as hydrocephalus in the fetus. In addition, preventive measures against infections, such as compliance with sanitary and hygienic rules, medical examinations and leading a healthy lifestyle, ensure the healthy development of the fetus. Early detection and treatment of infections at each stage of pregnancy helps to maintain the health of the mother and child. In general, a better understanding of congenital hydrocephalus and the effects of infections on the mother's body during pregnancy requires the introduction of new preventive approaches in medical practice. These studies and practical approaches are of great importance in preventing serious diseases such as congenital hydrocephalus and ensuring a healthy lifestyle for the mother.

Conclusion

The role of congenital hydrocephalus and infectious diseases transmitted to the mother during pregnancy in its genesis is very important. Infections, especially in the first trimesters of pregnancy, during critical periods of fetal development, can lead to systemic and neurological complications. Infections can negatively affect the development of the nervous system in the fetus and cause the development of serious diseases such as hydrocephalus.

To prevent this condition, it is important to constantly monitor the health of the mother's body and immune system during pregnancy, and to take preventive measures against infectious diseases. Also, early detection and treatment of infections through medical examinations and necessary treatments are effective in preventing diseases such as congenital hydrocephalus.

In addition, leading a healthy lifestyle during pregnancy, observing hygiene rules, and receiving necessary vaccines ensure the healthy development of the fetus. Improved medical approaches to maintaining the health of the mother and child during pregnancy are necessary to prevent congenital hydrocephalus and other neurological diseases. Scientific research and practical measures in this area will help reduce the incidence of congenital hydrocephalus.

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