

## *Hemolytic Diseases of Infants*

Farmanqulova Yorqinoy Rafiqovna, Maxmudova Barno Shamsuddinovna and Sadiqova Muxabbatbonu Pazlidinovna

Andijan State Medical Institute, Faculty Department of Pediatrics and neonatology



**Abstract** – With timely medical care, all processes in his small body will quickly return to normal and the risk of damage to the nervous system will be eliminated. To understand what the consequences of hemolytic disease will be, first you need to understand what this disease is and why it urgently needs to be treated. Let's look at the example of hemolytic disease of newborns with group incompatibility, since it is more common and proceeds somewhat easier than with Rh conflict. In this case, the mother has the first blood group 0 (I), and the fetus – another, more often the second A(II) or third B(III). At the heart of this disease is a massive breakdown of the red blood cells of the fetus due to the incompatibility of its blood and the blood of the mother.

**Keywords** – Blood Cells, Delivering Oxygen, Neurological Disorders, Hemolytic Disease.

The expectant mother having the first blood type does not have antigens. Let's denote the mother's body in the picture with a "minus" sign. And the future child, i.e. the fetus has a second blood group, i.e. there is an antigen in his blood. In the picture, we will mark the fruit with a "plus" sign. In the presence of an antigen in the fetus, the mother's immune system will begin to consider this antigen as a foreign enemy agent and will begin to produce protective antibodies (JgG) against this antigen. These antibodies can begin to be produced early - even during pregnancy, and can appear almost during childbirth. The shorter the gestation period at which the antibodies began to be produced, the more they accumulate and the more likely the more severe disease of the baby. These antibodies rush into the blood to the fetus through the placenta, settle on the red blood cells of the child and begin to destroy them. A lot of them are destroyed; a large amount of the pigment bilirubin is released from the destroyed red blood cells. This bilirubin is "bad", it is called indirect bilirubin and is very toxic. It should be neutralized in the liver. But since at birth the liver's enzyme system is immature (it matures postnatal), it will not be able to completely utilize all the bilirubin, it will be very much, and its feature is to accumulate in those tissues of the body that contain fat, then the ideal place for the accumulation of bilirubin will be subcutaneous fat and clinically we will see jaundice of the skin. In addition, you should know that red blood cells still perform the function of delivering oxygen to all organs.

And once they are destroyed, the function of oxygen supply is disrupted, and first of all, one of the most vulnerable and not yet too developed organs of newborns - the brain - will suffer, because it first needs oxygen supply.

Why is indirect bilirubin toxic? Because it damages the cells of the heart, liver and, to a greater extent, brain cells, bilirubin intoxication occurs, characterized by lethargy, regurgitation, vomiting, pathological yawning, and a decrease in muscle tone. And at high critical values above 340 mol in full-term children and at an indicator of 160 mmol/l in premature infants, "nuclear jaundice" occurs - this is bilirubin intoxication of the brain, when the nuclei of brain cells are stained with bilirubin: there is muscle hyper-tonus, rigidity of the occipital muscles, a sharp "brain" cry, the child reacts to all stimuli, a large fontanel bulges, muscles twitch, convulsions, strabismus, respiratory distress.

The brightness of the jaundice shade depends on the amount of this pigment in the newborn's body. Jaundice can occur early (perhaps even in the first day of a child's life) and persists for a long time. Characterized by an increase in the liver and spleen, the child's skin color is bright yellow, the sclera - the whites of the eyes-may be colored. If there is anemia, and it must be, because red blood cells die, then the baby will be pale and jaundice may not seem so bright.

Treatment for mild to moderate forms of the severity of this conflict is often carried out conservatively. Babies are treated with phototherapy, i.e. light treatment, because under the influence of light, indirect bilirubin is destroyed. Adsorbents are also prescribed to help the intestines fight off toxins. In severe conditions, a replacement blood transfusion operation is performed.

With late treatment, the consequences of hemolytic disease can be dangerous-from the death of the baby to severe neurological disorders with signs of cerebral palsy, delayed psychophysical development, deafness, and speech disorders.

Mild and moderate forms of pathology rarely (up to 10%) can leave a slight delay in motor development with a satisfactory state of mental abilities; behavior disorder; impaired movement functions, strabismus, hearing and speech disorders. Children with GBN do not tolerate vaccinations well, are prone to developing severe allergies and can often suffer from infectious diseases for a long time; teeth are often susceptible to enamel destruction and caries.

During the treatment period, the baby is excluded from breastfeeding, because through breast milk, antibodies (JgG) will enter the child and jaundice will increase. After 15-20 days, after the disappearance of the antibodies from the milk, the women can breastfeed. For the mother of a newborn, diet is very important. Proper nutrition of a woman will ensure the intake of vitamins and eliminate the effects of harmful chemical additives. The mandatory diet should contain vegetables and fruits, fish, and liver. The main thing is that the products are fresh and natural.

Children who have had HDI should be monitored by a neuropathology in a polyclinic and receive rehabilitation treatment.

And in conclusion, I want to say that even if you understand a little of what I have described above, any reasonable person, including those who are far from medicine by their profession, is able to understand the consequences of hemolytic disease.

Hemolytic disease of newborns (GBN) – occurs when the blood of the mother and fetus is incompatible with the Rh factor, its subtypes, and blood groups. More often, hemolytic disease occurs as a result of rhesus conflict. GBN develops in uterus. The Rh factor, inherited from the father and contained in the red blood cells of the fetus, enters the mother's blood. Antiserum antibodies are formed in the mother's blood. Some of these antibodies cause hemolytic of red blood cells. Group incompatibility of maternal and fetal blood also leads to the development of GBN. GBN manifests itself in three forms: edematous, jaundice and anemic. The edematous form is the most severe. Babies are often born prematurely, dead, or die in the first hours after birth. With an early immunological conflict, a miscarriage may occur. The jaundice form can be severe, moderate and mild. The prognosis for the jaundice form of hemolytic disease depends on the degree of damage to the central nervous system. In the case of severe intoxication and the occurrence of nuclear jaundice (if the child does not die on the 5th-7th day of life from paralysis of the respiratory center), there is a lag in mental and physical development. Anemic form is the mildest form. The prognosis in this case is favorable. The main method of treatment is blood transfusion.

To prevent the birth of children with hemolytic disease, all pregnant women in women's clinics conduct a blood test for the Rh factor and determine the blood group. Women who have Rh-negative blood are not recommended to have an abortion during their first pregnancy. For a Rh-negative woman, it is important that there are no cases of termination of pregnancy before the birth of the child, since each of them can increase the chance of antibody formation and, consequently, the birth of a sick child. If the abortion still took place, then to prevent the development of GBN, a Rh-negative woman after the first abortion (or miscarriage) is injected with a special drug — antiresus immunoglobulin. It will protect the unborn baby, which the mother will carry during the subsequent pregnancy, from antibodies, not allowing them to form. When the pregnancy of a Rh-negative woman ends in childbirth, the Rh-belonging of the baby will be determined. If the baby was born with a positive Rh factor, the woman is injected with immunoglobulin to prevent subsequent pregnancies (within the first 48 hours, but no later than 72 hours after delivery). If the newborn has a Rh factor-negative, the mother's immunoglobulin is not prescribed. Modern methods involve the introduction of immunoglobulin to a Rh-negative woman during pregnancy. If the father of the child is Rh-positive and no antibodies are found in the blood of the pregnant woman, then at the period of 28 and 34 weeks she can be injected with antiresus immunoglobulin for preventive purposes.

Signs of hemolytic disease of newborns directly depend on the form of the disease. For example, with an edematous form, a child has severe edema, the skin becomes waxy, muscle tone is sharply reduced, respiratory and cardiac function is depressed. The abdomen becomes swollen, barrel-shaped (due to an enlarged liver and spleen).

With anemic form, the skin and mucous membranes become pale, cyanotic. The abdomen is also enlarged.

With the jaundice form, the child's skin becomes bright yellow (sometimes even orange) in color. The mucous membranes and sclera of the eyes also turn yellow. The child becomes sluggish, sleepy, or on the contrary-sharply restless. With nuclear jaundice, the muscles come into a strong tone, the baby arches his back, throwing his head back, while often and shrilly screams and cries.

Sensibilization of the mother before pregnancy (that is, she already has an increased sensitivity to blood components – for example, when Rh-negative blood was transfused to her Rh-positive, miscarriages, abortions, childbirth). With each new pregnancy and birth, the risk of developing hemolytic disease of newborns only increases, especially if during childbirth there was a placental abruption or a caesarean section had to be performed.

The anemic form is considered the mildest form of hemolytic disease of newborns and has the most favorable prognosis. The child has pallor of the skin and mucous membranes, a decrease in muscle tone, an increase in the size of the liver and spleen, and anemia increases. At the same time, the condition and life of the child is not in danger, with timely treatment, the symptoms quickly pass.

### REFERENCES

- [1] Neonatology. National guide / ed. by N. N. Volodin. M.: GEOTAR-Media, 2007. 848 p.
- [2] Shabalov N. P. Neonatology : in 2 t. 5th ed., ispr. i dop. M.: MEDpress-inform, 2009. 1504 p.
- [3] Rooz R., Genzel-Borovicheshi O., Prokittle G. Neonatology: practical recommendations. Moscow: Med. lit. 2011. 568 p.
- [4] Kazakova, N. N. (2020). Dental status inpatients with inflammatory disease of the joints. In Актуальные вызовы современной науки» XVIII Международная научная конференция. Переяслав (pp. 57-58).
- [5] Kazakova, N. N. (2020). Prevention of caries of the chewing surface molars in children with rheumatism. International Engineering Journal For Research & Development, 5(ICIPPS), 3-3.
- [6] Daminova, S. B., & Kazakova, N. N. (2020). The state of the physicochemical properties of oral fluid in children with rheumatism. ACADEMICIA: An International Multidisciplinary Research Journal, 10(3), 133-137.
- [7] Kamalova, F. R., Rakhmatova, D. R., Turaeva, F. A., Aronov, E. K., & Kazakova, N. N. (2019). Changes in micro flora and Non-Specific factors protection of the oral cavity in children with inflammatory diseases maxillofacial area. ACADEMICIA: An International Multidisciplinary Research Journal, 9(4), 20-23.