BG Pulse Journal USA
ISSN:1947-2536 http://www.bgpulseusa.com/index.php/bg
BG PULSE JOURNAL

CATAMNESTIC DEVELOPMENTAL FEATURES OF PREMATURE INFANTS BORN TO MOTHERS WITH SEVERE ANEMIA

Master's Degree Student:

G'ulomjonova Yulduzxon Ikromjon qizi

Scientific Supervisor:

Associate Professor, **Nuritdinova Gavhar Taipovna**

Abstract

Severe maternal anemia during pregnancy is an important medical and social problem that negatively affects fetal growth, placental function, and neonatal outcomes. Premature infants born to mothers with severe anemia are at increased risk of low birth weight, hypoxia, delayed physical development, neurological disorders, and impaired postnatal adaptation. The aim of this study was to analyze catamnestic developmental features of premature infants born to mothers with severe anemia. The study focused on physical growth, neuropsychological development, frequency of neonatal complications, and long-term health outcomes. The findings indicate that maternal severe anemia may significantly influence the early and long-term development of premature infants. Regular catamnestic monitoring, early rehabilitation, nutritional support, and pediatric follow-up are essential for improving developmental outcomes in this group of children.

Keywords: severe maternal anemia, premature infants, catamnestic follow-up, fetal development, neonatal outcomes, physical development, neurodevelopment.

Introduction

Maternal anemia is one of the most common complications of pregnancy and remains a major risk factor for adverse perinatal outcomes. Severe anemia reduces oxygen delivery to maternal and fetal tissues and may lead to chronic intrauterine hypoxia, placental insufficiency, fetal growth restriction, and premature birth.

Premature infants are especially vulnerable because their organs and systems are functionally immature at birth. When prematurity is combined with maternal severe anemia, the risk of developmental disorders increases. Such children may experience delayed weight gain, impaired immune adaptation, respiratory complications, neurological dysfunction, and slower psychomotor development.

Catamnestic observation is important for assessing the long-term development of premature infants. It allows clinicians to evaluate growth dynamics, neurological status, cognitive development, motor skills, and the frequency of chronic health problems. Early identification of developmental deviations makes it possible to provide timely medical and rehabilitation support.

Aim of the Study

The aim of this study is to evaluate catamnestic developmental features of premature infants born to mothers with severe anemia.

Materials and Methods

The study was based on retrospective and catamnestic analysis of premature infants born to mothers diagnosed with severe anemia during pregnancy. Medical records of mothers and newborns were analyzed.

The following indicators were evaluated: gestational age, birth weight, Apgar score, neonatal complications, duration of hospital stay, physical growth, psychomotor development, neurological status, and frequency of respiratory and infectious diseases during follow-up.

Children were observed during early childhood. Physical development was assessed by body weight, height, head circumference, and growth dynamics. Neurodevelopmental status was evaluated according to motor activity, muscle tone, reflexes, speech development, emotional response, and cognitive activity.

Results

The analysis showed that premature infants born to mothers with severe anemia had lower birth weight and reduced adaptive capacity in the neonatal period. Many newborns demonstrated signs of intrauterine hypoxia, respiratory distress, feeding difficulties, and prolonged postnatal adaptation.

During catamnestic follow-up, delayed physical development was observed in some children. These children showed slower weight gain, reduced resistance to infections, and frequent respiratory diseases.

Neurodevelopmental assessment revealed delayed formation of motor skills in several cases, including late head control, delayed sitting, crawling, and walking. Some children demonstrated increased muscle tone, irritability, sleep disorders, and slower speech development.

The severity of developmental delay was more pronounced in children born at earlier gestational ages and in infants with very low birth weight. The combination of prematurity, maternal anemia, and neonatal hypoxia was associated with higher risk of long-term developmental problems.

Discussion

The findings indicate that severe maternal anemia is an important factor influencing fetal and postnatal development. Chronic oxygen deficiency during pregnancy may impair placental circulation and fetal organ maturation. As a result, premature infants may be born with reduced functional reserves.

Prematurity itself is associated with immaturity of the respiratory, nervous, digestive, and immune systems. Maternal severe anemia further aggravates these risks by increasing the likelihood of hypoxia and intrauterine growth restriction.

Catamnestic observation showed that such children require long-term medical supervision. Early developmental delays may be corrected or reduced through timely rehabilitation, adequate nutrition, prevention of infections, and neurological monitoring.

The study emphasizes the importance of prevention and treatment of anemia during pregnancy. Regular antenatal screening, iron supplementation, proper nutrition, and correction of maternal hemoglobin levels may reduce the risk of premature birth and improve neonatal outcomes.

Conclusion

Premature infants born to mothers with severe anemia represent a high-risk group for impaired physical and neuropsychological development. Severe maternal anemia may contribute to intrauterine hypoxia, low birth weight, delayed postnatal adaptation, and long-term developmental deviations.

Catamnestic monitoring is essential for early detection of developmental disorders and timely correction. Comprehensive pediatric follow-up, nutritional support, rehabilitation measures, and prevention of infectious complications can improve outcomes in premature infants.

Prevention, early diagnosis, and effective treatment of anemia during pregnancy are important strategies for reducing adverse perinatal outcomes and improving child health.

References

1. Kliegman R. M., St. Geme J. W., Blum N. J., Shah S. S., Tasker R. C., Wilson K. M. *Nelson Textbook of Pediatrics.* 21st ed. Elsevier; 2020.
2. Martin R. J., Fanaroff A. A., Walsh M. C. *Fanaroff and Martin's Neonatal-Perinatal Medicine: Diseases of the Fetus and Infant.* 11th ed. Elsevier; 2020.
3. Gomella T. L., Cunningham M. D., Eyal F. G. *Neonatology: Management, Procedures, On-Call Problems, Diseases, and Drugs.* 8th ed. McGraw-Hill; 2020.
4. World Health Organization. *Guideline: Daily Iron and Folic Acid Supplementation in Pregnant Women.* Geneva: WHO; 2012.
5. World Health Organization. *Preterm Birth: Key Facts.* Geneva: WHO; 2023.
6. Black R. E., Victora C. G., Walker S. P., et al. Maternal and child undernutrition and overweight in low-income and middle-income countries. *The Lancet.* 2013;382(9890):427–451.
7. Lozoff B., Georgieff M. K. Iron deficiency and brain development. *Seminars in Pediatric Neurology.* 2006;13(3):158–165.
8. Allen L. H. Anemia and iron deficiency: effects on pregnancy outcome. *The American Journal of Clinical Nutrition.* 2000;71(5):1280S–1284S.
9. Scholl T. O. Iron status during pregnancy: setting the stage for mother and infant. *The American Journal of Clinical Nutrition.* 2005;81(5):1218S–1222S.