

CLINICAL AND LABORATORY CHANGES IN POST-TERM INFANTS

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Abstract

Due to the lack of consensus on what kind of pregnancy should be considered post-term, there are very conflicting data in the literature on the frequency of post-term pregnancy. However, according to most authors, the frequency of postmaturity ranges from 1.4 to 14%, averaging 10% [1, 8]. A description of post-term pregnancy is already found in ancient treatises dating back to the era of Hippocrates and Galen. The beginning of a scientific approach to this problem dates back to 1902, when Ballentyne and then Runge (1948) first described signs of overmaturity in a newborn, and this syndrome was called Bellentyne-Runge syndrome. Despite such a solid history, many issues regarding this pathology have not yet been resolved [2, 10].

Keywords: post-term pregnancy, degrees of post-maturity, general blood test, biochemical blood test.

Introduction

Among the risk factors for perinatal morbidity and mortality, postterm pregnancy is not the least important. Post-term babies are those born between 41 and 43 weeks of pregnancy. Signs of a distorted child include: dark green coloring of the skin, membranes, and umbilical cord; maceration of the skin (in a living child), especially on the hands and feet (bath feet and palms); decrease in the amount of cheese-like lubricant, decrease in subcutaneous fatty tissue and the formation of folds, decrease in skin turgor (senile appearance of the child); large size of the child (less often hypotrophy), long fingernails, poorly defined head configuration, dense skull bones, narrow sutures and fontanelles, increased density of the cartilage of the auricles and nose, etc. [1, 3, 4]. The fetus can be considered post-term if there is a combination of at least 2-3 of these signs [2, 5].

In post-term fetuses, their sensitivity to hypoxia and birth injuries is increased, which contributes to dysfunction of the central nervous system in the child in the long-term period, the disability of children increases, and a lag in physical and neuropsychic development is revealed [2, 11, 12].



Material and Research Methods

A clinical and laboratory examination of 50 newborns with signs of distortion and a gestation period of more than 41 weeks was carried out. Of these, 41-42 weeks - 29, 42 weeks - 13, 42-43 weeks - 5 and 43 weeks - 3 newborns.

All newborns admitted to the neonatal pathology department were in moderate to severe condition. The body weight of newborns at birth was 2110-5600 g, body length 40-60 cm. There were 34 boys, 16 girls. The Apgar score was 2-8 points at the 1st minute, 3 at the 5th minute -9 points. The umbilical cord entwined around the neck was observed in 11 newborns.

Research Results and Discussion

Of the 50 newborns, 44 (88%) newborns were from physiological births, 6 (12%) newborns were born by cesarean section. From the anamnesis, the mothers of these newborns suffered during pregnancy: ARVI - 35 mothers, TORCH - 2, pyelonephritis - 1, gastritis - 1, colpitis - 1. Pregnancy occurred against the background of anemia - in 43 mothers, toxicosis - in 22 mothers, nephropathy - in 15 mothers, threatened miscarriage - in 11 mothers, goiter - in 1 mother, uterine fibroids - in 1 mother. 80% of mothers had a combination of 2-3 of the above factors. Clinical symptoms of postmaturity were assessed according to Clifford [2, 6].

I degree of postmaturity was observed in 26 newborns - of which 5 newborns had a gestation period of 42 weeks, and 21 newborns had a gestation period of 41-42 weeks. Signs of postmaturity were characterized by the satisfactory condition of the newborn at birth; normal skin color, but almost devoid of cheese-like lubricant; the skin was dry, with a slight decrease in turgor; The child's size is large; the edges of the fontanelles are dense; the amniotic fluid was light and its quantity was reduced. The birth weight of 1 newborn was 2110 g, in 18 newborns it was from 3000 to 3950 g, in 7 newborns it was from 4000 g to 4520 g. In newborns with stage I postmaturity, pneumonia was observed in 22 (85%), hypoxic-ischemic encephalopathy (HIE) - in 15(58%), neonatal jaundice - in 4(15%), diarrhea - in 3(11.5%). Anemia - in 21(81%), leukocytosis - in 17(65%), increased ESR - in 2(8%). Hypocalcemia - in 10(38%), hypoglycemia - in 6(23%), hypokalemia - in 5(19%), hyperbilirubinemia - in 4(15%), hyponatremia - in 4(15%), hypomagnesemia - in 4(15%), hypoproteinemia - in 1(4%) newborn.

There were 19 newborns with II degree of postmaturity - 3 newborns with a gestation period of 42-43 weeks, 8 newborns with a gestation period of 42-43 weeks, 8 newborns with a gestation period of 41-42 weeks. Signs of postmaturity were characterized by the severe condition of the newborn at birth; the skin was dry, devoid of cheese-like lubricant, and colored green by meconium; there were peelings on the hands and feet (bath feet and palms); skin turgor was reduced (senile appearance of the child); the amniotic fluid was dirty and green in color with meconium; the edges of the sutures and fontanelles were dense. Birth weight in 4 newborns ranged from 2460 g to 2900 g, in 9 newborns from 3000 g to 3850 g, in 6 newborns from 4000 g to 5500 g. In these newborns, hypoxic-ischemic encephalopathy was diagnosed in in 17(89%), pneumonia - in 11(58%), IUI - in 7(37%), neonatal jaundice - in 5(26%), diarrhea - in 1(5%). Anemia - in 8(42%), leukocytosis - in 9(47%), increased ESR - in 1(5%). Hypocalcemia - in 7(37%), hyperbilirubinemia - in 5(26%), hypoglycemia - in 4(21%), hypoproteinemia - in 2(10.5%), hypokalemia in 1(5%), hyponatremia in 1(5%).

There were 5 newborns with the third degree of postmaturity - 2 newborns with a gestation period of 42-43 weeks, and 3 newborns with a gestation period of 43 weeks. Signs of postmaturity were



characterized by the severe condition of the newborn at birth; dry skin, devoid of cheese-like lubricant, colored yellow by meconium; maceration of the skin of the whole body, especially on the hands and feet (both feet and palms); skin turgor was reduced (senile appearance of the child); the amniotic fluid was dirty and yellow-stained with meconium; the skull bones are dense, the fingernails are long. Birth weight in 2 newborns ranged from 3400 g to 3850 g, in 3 newborns from 4200 g to 5600 g.

In these newborns, hypoxic-ischemic encephalopathy was diagnosed in 4(80%), pneumonia - in 3(85%), IUI - in 2(60%), neonatal jaundice - in 1(20%). Anemia - in 5(100%), leukocytosis - in 4(80%), increased ESR - in 3(60%). Hypocalcemia - in 3(60%), hypoglycemia - in 2(40%), hyperbilirubinemia - in 1(20%), hypokalemia - in 1(20%), hyponatremia - in 1(20%) newborn.

Conclusions

At a gestation period of 42-43 weeks, a picture of stage III postmaturity was observed, pneumonia, hypoxic-ischemic encephalopathy, and intrauterine infection predominated. Anemia was observed in all newborns with the III degree of postmaturity, indicators of inflammatory activity, such as leukocytosis and accelerated ESR, were higher than in the I and II degrees of postmaturity, hypoglycemia, hypocalcemia, hypokalemia and hyponatremia increased, i.e. indicators of dyselectrolythemia, which are characteristic of dysmetabolic encephalopathy.

Our data are consistent with the opinion of Clifford, which indicates that the adaptive ability in the II degree of postmaturity is sharply reduced and there is a tendency to pneumonia and encephalopathy, and mortality rates in the II degree of postmaturity are high. In the third degree of postmaturity, the adaptive ability is sharply reduced, and signs of pneumonia and encephalopathy are also pronounced, from which it is difficult to remove the newborn. These are signs of deep hypoxia, but the mortality rate among them is lower [1, 7, 9].

According to Clifford, as the degree of postmaturity increases, newborns with underweight are more common. In our observations, it was precisely at the II and III degrees of postmaturity that newborns weighing from 4200 to 5600 g were encountered.

As the degree of postmaturity increases, dyselectrolythemia more often contributes to the development of signs of hypoxic-ischemic encephalopathy and against this background, prolonged intrauterine hypoxia in combination with dirty amniotic fluid, as a factor of infection, is confirmed by increasing leukocytosis, accelerated ESR and the formation of respiratory symptoms.

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