International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-12| Issue-5| 2024 Published: |22-05-2024|

RESPIRATORY DISTRESS SYNDROME IN NEWBORNS

https://doi.org/10.5281/zenodo.12576348

Juraeva Khursanoy Zakirovna
Faculty of Pediatrics and Neonatology Department
ASMI

Abstract

One of the main problems of premature babies is respiratory disorders of varying severity. According to clinical protocols, the prevention of respiratory distress syndrome (RDS) of the newborn has been introduced. An analysis of the results of RDS prevention was performed. Clinical differences were revealed in premature newborns with and without it.

Keywords

preterm birth, neonatal respiratory distress syndrome, dexamethasone prophylaxis.

INTRODUCTION

In all countries of the world, despite all the efforts of obstetricians and gynecologists, a high percentage of premature births is still observed [1,4]. The intensive development of neonatology services is undoubtedly bearing fruit and perinatal and infant mortality rates are constantly decreasing, which cannot be said about perinatal morbidity [1]. In the structure of morbidity in premature newborns, respiratory disorders occupy the second place, and more than half of them are children with respiratory distress syndrome (RDS)[3]. A pattern has long been noted between gestational age and the frequency of development of RDS: the lower the gestational age, the higher the risk of developing respiratory disorders in the newborn. In this regard, it is necessary to prevent both respiratory disorders in newborns and premature births in general [2].

MATERIALS AND METHODS

The material consisted of 33 developmental histories of newborns of gestational age 25-33.6 weeks who received treatment in the neonatal intensive care unit (NICU). Microsoft Excel and Statistica 6.0 programs were used to process the material.

International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-12| Issue-5| 2024 Published: |22-05-2024|

The disease is mainly observed in newborn children from mothers with diabetes mellitus, cardiovascular diseases, uterine bleeding, immaturity and/or hypoxia-induced dysfunction of cells that produce surfactant. Intrauterine hypoxia, asphyxia and hypercapnia can also contribute to the occurrence of RDS. Due to hypoxia and hypercapnia, pulmonary circulation may be impaired; the interalveolar septa become saturated with serous fluid with clearing of the plasma alveoli. The lack of plasminogen, α2-microglobulin and the development of local or disseminated blood coagulation are of a certain importance in the occurrence of RDS. All pregnant women between the 22nd and 34th weeks of gestation in the presence of threatening and beginning premature labor are considered as patients who are indicated for antenatal prophylaxis of RDS with glucocorticoids, which promotes the maturation of fetal lung surfactant. Dosage regimens: 2 doses of 12 mg betamethasone IM every 24 hours or 4 doses of 6 mg dexamethasone IM every 12 hours.

RESULTS AND DISCUSSION

All newborns were divided into three groups: 1 group of newborns received a full course of RDS prevention with dexamethasone antenatally; in group 2, prevention of RDS was carried out, but not in full; in the third group, prevention of RDS was not carried out for any reason (most often due to premature abruption of a normally located placenta and the need for delivery by emergency cesarean section, or when a woman in labor was admitted in the pushing period). According to clinical protocols, the regimen for the prevention of fetal RDS includes injections of dexamethasone 6 mg every 12 hours No. 4 (total 24 mg per course).

The first group included 19 patients, accounting for 57.6%, their gestational age ranged from 25-32 weeks. The vast majority of them were delivered by cesarean section in a planned manner, while 26.3% of children were born through the vaginal birth canal. All of them received SDR prophylaxis in full, due to the risk of premature birth according to the regimen recommended by clinical protocols [3]. The Apgar score of newborns at the end of the first minute ranged from 4 to 7 points, after 5 minutes all had 7 points. Body weight at birth in this group was 551-1670 grams, with a height of 30-45 cm. All patients required additional ventilation support after birth, but to varying degrees. Thus, only 31.6% were on mechanical ventilation, while the remaining 68.4% required only nasal CPAP. In addition, all 100% of patients in this group after birth stayed in the intensive care unit from 7 to 60 bed days; only one newborn with extremely low body weight (ELBW), born at 26 weeks of gestation due to the outcome of RDS in bronchopulmonary dysplasia, spent in the ICU 320 bed days. At birth, 47.4% of children required additional

International Journal of Education, Social Science & Humanities.
Finland Academic Research Science Publishers
ISSN: 2945-4492 (online) | (SJIF) = 8.09 Impact factor
Volume-12| Issue-5| 2024 Published: |22-05-2024|

administration of the drug "Curosurf": 7 (36.8%) at a dose of 200 mg, 1 (5.3%) - 220 mg, 1 (5.3%) - 120 mg. In this group, the main diagnosis of RDS was made in 4 (21%) newborns, bronchopulmonary dysplasia was the main diagnosis in 3 (15.8%) patients, and necrotizing enterocolitis in 6 (31.6%) newborns. In 2 (10.5%) children with ELBW, a fatal outcome was recorded (these newborns were born at 25.1 and 26 weeks of gestation); the cause of their death was intrauterine sepsis.

The second group included 3 (9.1%) patients with a gestational age of 25.4-27.2 weeks. All births are vaginal. Prevention of SDR was started in connection with threatening premature birth, but due to the development of regular labor against the background of tocolysis, it was not completed in full. Thus, 2 newborns were administered antenatally 2 doses of dexamethasone, 6 mg each, with an interval of 12 hours; one received a single dose of 6 mg of dexamethasone. The Apgar score in this group was 4-6 points at the end of 1 minute. Body weight at birth was 630-1230 grams, with a height of 34-43 cm.

All newborns required respiratory support: one in the form of mechanical ventilation, two - nasal CPAP. There were 14 - 32 bed days in the intensive care unit. Curosurf 200 mg was administered to only one newborn. The main diagnosis in 2 newborns was necrotizing enterocolitis.

The third group included 11 (33.3%) children whose gestational age was 25.3-32.3 weeks. 6 (54.5%) newborns were born through the vaginal canal, the remaining 5 (45.5%) by emergency cesarean section. Those born vaginally did not receive antenatal prophylaxis due to the fact that their mothers were brought to the hospital during the pushing period. The indication for cesarean section was premature abruption of a normally located placenta. The Apgar score was lower compared to groups 1 and 2 and at the end of 1 minute ranged from 2 to 5 points. The body weight of the newborns was 810 - 2140 grams, height 32-46 cm. At the same time, 6 (54.5%) children required invasive ventilation support in the form of mechanical ventilation, and the remaining 5 (45.5%) required nasal CPAP. Curosurf was administered to 6 (54.5%) patients: 5 of them at a dose of 200 mg, 1 at a dose of 240 mg. Neonates received NICU care from 3 to 146 bed days. One death was recorded in this group. The main diagnosis of SDD and bronchopulmonary dysplasia was made in an equal number (18.2%) of newborns, and 54.5% of children from this group received treatment for necrotizing enterocolitis.

CONCLUSION

1. Timely implementation of complete prevention of SDR in the antenatal period significantly improves the prognosis of premature newborns: the duration

of mechanical ventilation, CPAP, and length of stay of newborns in the intensive care unit.

2. Early use of a surfactant ("Curosurf") during the initial clinical manifestations of SDR allows you to quickly and effectively stabilize the condition of newborns and reduce the amount of time for respiratory support.

3. The most common complications in premature newborns receiving respiratory support are bronchopulmonary dysplasia and necrotizing enterocolitis.

REFERENCES

1. Obstetrics. National leadership / ed. G.M. Savelyeva, G.T. Sukhikh, V.N. Serov, V.E. Radzinsky. — 2nd ed., revised. and additional —Moscow: "GEOTAR-Media", 2015. — 189.264 p.

2. Premature birth. WHO fact sheet. November 2016 [Electronic resource]— Access mode: http://who.int/mediacentre/factsheets (access date 01/23/2018)

3. Premature birth. Clinical recommendations (protocol) [Electronic resource]. —Access mode: http://www.trmo.ru/media/cms-page-media/46 (access date 01/21/2018).

4. Fatkullin I.F. Effective practices in the diagnosis and treatment of premature birth [Electronic resource]. —Access mode: http://www.arfpoint.ru/ E-ffektivnie-praktiki-vdiagnostike-i-terapii-prejdevremenih-rodov (access date 01/13/2018).