

COMPLEX HEALTH CARE IN PRETERM BORN BABIES WITH RESPIRATORY COMPLICATIONS

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Abstract: Premature birth is a serious medical and socio-economic problem. It is the most common cause of neonatal mortality in developed countries. 10-12% of all pregnancies end with premature birth. Most of preterm infants develop respiratory complications. Premature born babies need special conditions of care and care by specially trained medical staff.

Health care for premature infants is complex process. This process involves the need of care for mother during pregnancy. When premature birth is a fact, care depends of the weight of infant, complications and deceases outcome of preterm birth. The role of doctors, midwives, nurses, rehabilitators and social workers is to interact with parents and to train them how to care for their newborn and help next integration into society.

Keywords: premature infant, preterm birth, health care.

INTRODUCTION

Premature birth is not only a medical but also a serious socio-economic problem. It is the most common cause of neonatal mortality in developed countries [1,2,3,4]. In Bulgaria, statistics show that 10-12% (Table.1) of all pregnancies end with premature birth. [5] Worldwide, 15 million babies are born prematurely each year, and only in Europe they are 500,000. In Bulgaria the premature birth rate is 9.1% for 2011, according to data from the national registry. Unborn births are 5941 at birth rate of 70,846. Preterm birth is one of the main reasons for neonatal mortality - 1 million babies die annually because they are born too early. 75% of them can be saved. [6]

Table 1. Born children in 2016, according to Bulgarian National Statistical Institute

Born in Bulgaria for year 2016	Born in Plovdiv for year 2016	Born in UMHAT St. George / 2016	Premature newborns
65 446 babies	6 413 babies	2 100 babies	12 %

In 2018 a survey of the total registered preterm infants with some (other) health complications are nearly 2/3 of the new-borns - 64.1% of the cases. The 3.6% difference between new-born with RDS and those with all other disabilities shows that in preterm infants the respiratory system is primary damaged. [5]

About 40% of preterm infants born before 32 weeks of gestation develop bronchopulmonary dysplasia (BPD). Possible consequences in the long term are increased risk of mortality and chronic airway problems. [6]

Associated with preterm birth socio-economic and behavioral risk factors include poverty, unemployment, low education, poor prenatal care, harmful habits such as smoking, alcohol, drugs and other harmful substances, unhealthy family environment, severe and prolonged stress, excessive physical exercise (lifting weights), trauma (hits or violence), new pregnancies less than 6 months after previous birth, unhealthy diet and low mother BMI, etc. Essential for the preterm birth is also the medico - biological etiological factors. One of these is uterine enlargement, as the main reason for this may be the presence of: multiple pregnancies that occurred naturally or after using assisted reproductive technologies or polyhydramnios (increased amount of amniotic fluid). Other risk factors include: placenta previa, incorrect position of the fetus, myoma, uterine cervix malformations (including cerebrovascular insufficiency), preeclampsia, uterine contractions, acute infections during pregnancy (vaginal - chlamydia, trichomonas, mycoplasma , toxoplasmosis, bacterial vaginosis, viral rubella, cytomegalovirus, herpes, influenza, adenovirus infection, chronic diseases (hypertension, cardiovascular diseases, diseases of the lungs, liver or kidney anemia and etc.), genetic factors, previous premature birth, etc. These risk indicators are subject to detailed analysis in the work of a number of authors. To limit preterm births, a number of studies have been conducted to identify and identify the risk factors that are relevant to it. Identifying and recognizing their effects and impact leading to premature birth will significantly reduce the severe health, economic and social consequences as well as reduce the risk of neonatal death. In order to reduce the frequency of preterm births, adequate and

specialized prenatal care is essential. They must be individually tailored for each particular case of pregnancy and take into account the complex of risk predispositions [7].

Premature born babies need special conditions of care and care by specially trained medical staff. When the newborn is of low birth weight, and especially under 1500 years, it should be grown in incubator that allows maintaining optimum temperature, inhaled air, and enriching with oxygen when necessary. Specific treatment in relevant pathology - Hyaline membrane disease, apnea, extraalveolar gas collections, pneumothorax, necrotizing enterocolitis, infections, etc. [8]

The healthcare community has responsibility for many questions, one of which is finding the best way to inform the families of premature babies about the prophylaxis of HMD and other forms of RDS, the risks of developing another disease and the complications associated with it, need of medicines, drugs in prenatal and neonatal period, and others. Another issue is how to reduce the hospital stay of this patient group, as the stay in the neonatal intensive care unit is associated with increased stress from parents, such premature babies are thought to experience distress. The mass training of medical specialists in prophylactic methodologies aiming minimizing the risk of developing a hyaline-membrane disease is one of the main goals of modern neonatal medicine. [9]

In the analysis of the combined effect of dexamethasone prophylaxis, the gestational week of birth and the maternal age in preterm infants with HMD, the presence of HMD is mediated by the earlier gestational week of birth, the advanced maternal age, and on this background it is somewhat limited by the prenatal application of corticosteroids. [5]

Besides the early week of birth and the mother's advanced age, maternal behavior during pregnancy also plays a role. In recent years, the emphasis on neonatal pain research has focused on the health status and harmful habits of the mother. Smoking during pregnancy has been shown to increase the perception of pain, while alcohol consumption has been shown to reduce the reactivity of affected newborns. [10,11]

Spectrum of maternal and newborn-related factors that increase stress and pain in the newborn. Coffee consumption during pregnancy, birth mechanism, bacterial vaginosis, maternal Rhesus factor and gender of the new-born do not influence the severity of procedural pain in newborns. The blood group of the pregnant woman briefly influences the new-born's pain sensitivity. A higher gestational age leads to increased pain sensitivity, respectively a response immediately after the painful procedure. [12]

During pregnancy, mothers should be informed of possible risk factors such as premature birth, which can lead to many health problems. Nursing babies are more likely to develop chronic problems such as respiratory diseases, diabetes and cardiovascular diseases and disorders such as cerebral palsy, hearing or vision problems, behavioral deficits and learning deficiency. [6]

Our Premature Child Foundation and European Foundation for the Care of Newborns (EFCNI), called for harmonization of standards in the care of premature babies in Europe. The quality of care received by parents and their preterm babies directly affects infant mortality and the percentage of injuries. Neonatologists, as well as representatives of non-governmental organizations, shows the need to improve prevention and rehabilitation. Parents should be better informed and supported before, during and after their baby's hospital stay. NGOs from around the world managed to synthesize 10 steps to improve the prevention of preterm birth, intensive care and post-hospital follow-up.

1. Public perception and recognition to finally see the lack of care for preterm infants.
 2. Wide-ranging campaigns to ensure awareness of all future parents.
 3. Qualified parenting information parents need to know what to expect, how to look after their children, what issues to watch, and which preventive visits to attend.
 4. National action plans prevention of premature birth and early intervention for the premature.
 5. Certified training of specialists to ensure optimal care for pregnant women as well as preterm and newborn infants.
 6. Keeping the contact between the parents and the child because it is an indisputable human right.
 7. Provide special post-hospital care to ensure optimal development of newborn and premature babies.
 8. State support for all parents of premature or sick newborn children.
 9. Single European Register of Premature Births as a basis for research for prevention.
 10. Right for health for all so that every newborn child in Bulgaria, Europe and the world can get a successful start.
- [6]

Important stage of development of the preterm infants is rehabilitation. All children need physical rehabilitation: massage, specific exercises. The child's parents should also be involved in the rehabilitation. [13]

For disease prevention, good follow-up after discharge from a hospital is very important. The epicrisis should be handed over to the GP and GPs should be more familiar with the problems of the premature and their follow-up. In Europe and the world, parents are trained to care for their premature babies in neonatology and at home, they are assigned a social worker, and children are necessarily going to rehabilitation. Only a few countries in Europe have such a policy so far. Only a limited number of countries have a clear understanding of how to deal with babies and their parents in the case of premature birth. [6]

CONCLUSION

Health care for premature infants is complex process. This process involves the need of care for mother during pregnancy. When premature birth is a fact, care depends of the weight of infant, complications and deceases outcome of preterm birth. The role of doctors, midwives, nurses, rehabilitators and social workers is to interact with parents and to train them how to care for their newborn and help next integration into society.

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