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ŞCOALA DOCTORALĂ

DOMENIUL MEDICINĂ

PREPARATION FOR NEONATAL TRANSPORT OF THE NEWBORNS WITH RESPIRATORY DISTRESS SYNDROME

(ABSTRACT)

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INTRODUCTION

In the late 1970s, the number of organized transportation programs increased remarkably. Regionalization (the regional distribution model of the perinatal health system) has become a necessity. This revolutionary reshaping of the health care system, already applied in some US states during World War II, was an extremely effective concept, especially for patients with special surgical conditions. It was obvious among the scientific community that, in special circumstances, birth and neonatal care in specialized centres with modern infrastructure had a beneficial result. The idea of organizing a regional perinatal health system was thus implemented by US Public Health programs. This regionalization reduced the number of newborns who needed transport and lead to the idea of intrauterine transport. However, the responsibility of transporting newborns in need of special care from referral hospitals to tertiary centres has passed. In addition, regional and tertiary hospitals have organized transport teams and implemented collaborative projects between these teams. What has been obvious throughout history is that neonatal transportation remains fundamental to perinatal care. Thanks to great progress, there is undoubtedly more to be done in this area.

The organized transport service ensures almost the same level of monitoring and quality of care during transport as is available in the advanced neonatal intensive care unit.

Intensive care of newborns consists of immediate resuscitation in the first minutes after birth, and intensive management during transport and treatment at the intensive care unit. The importance of immediate resuscitation for the next therapeutic management is emphasized.

Perinatal and neonatal mortality levels have declined in developed countries because of advances in neonatal care, the introduction of high-quality technology and a better understanding of the pathophysiology of newborns. Organized and qualified care in the delivery room, the identification of risks and the efficient transport of sick infants, including fetal transfer in utero, also help to reduce mortality.

Perinatal and neonatal mortality has decreased in our country as a result of neonatal care progress, the introduction of high-quality technologies, improved understanding of the pathophysiology of newborns and the creation of a life-saving chain that is based on a quick transfer of newborns to the perinatal center III. Other factors that contribute to the decrease of premature mortality are a carefully organized birth with skilled resuscitation techniques, as well as the ability to identify risks and efficient transport of sick infants, including the transfer in utero of the fetus, etc. With limited resources, it is necessary to give priority to neonatal care in our country.

The objective of this study was to identify and evaluate implementation strategies that facilitate the quality improvement of respiratory care of newborns transported by ambulance in grade III centers. Resuscitation at birth and transport of the newborn in optimal conditions by ambulance lead to improve quality of the newborn's life.

The development of efficient transport systems is crucial to implementing the regionalization of perinatal care.

A qualified transport team should preferably transport newborns in special need or intensive care through organized teamwork.

Appropriate equipment and personalized vehicles for newborns should be available for a mode of safe transport, and respiratory stabilization before transport is the most important step in the whole transport process.

Several steps are involved in the transfer process, and the resources held by different local medical units differ. Therefore, inter-hospital communication, transport processes and systems affect the transport system. Stabilizing seriously ill children before the transfer is the initial step in determining whether the transfer is possible or not. In addition, the timely and appropriate management of high-risk newborns after birth is important for a successful transfer. The well-developed neonatal transport network and intensive care units could significantly improve the survival of transported newborns and minimize morbidity.

Neonatal transport can be divided into three stages: before transport, during transport and after transport. Stabilization before transport, close monitoring during transport and active treatment after transport cannot be separated. Understanding each step plays a decisive role in the onset and development of the disease. In particular, the stabilization of the patient's condition is a prerequisite for safe transport. The proper transition of the respiratory cycle in

severely ill children after birth depends on the timely and efficient establishment of self-contained breathing after birth. Asphyxia, premature birth, and respiratory distress are common causes and risk factors that make it difficult to determine breathing after birth in sick children. Managing the first minutes after birth is not only the key to the survival of sick children, but it is also the key to the success or failure of the whole transport process. In addition, this management improves safety and ensures the quality of transport. During the transport, data were collected through a case reporting form. Information on the patient's demographic and clinical characteristics, transport (indication, date, duration, destination, number and type of staff involved, medical devices and treatments), AE and interventions were recorded. Ventricular gait, oxygen saturation (SpO2) and oxygen inhalation fraction (FiO2) were collected within 5 minutes before and after transport, with an additional measure during transport for newborns who had continuous monitoring of vital signs.

The combination of on-the-job training and on-site treatment guidance is a feasible way to improve the efficiency of network transport and the success rate of treatment.

Coordinated regional strategies for optimizing perinatal services and transporting sick and premature infants to tertiary care centers have significantly improved survival outcomes. These findings have vital implications for health outcomes and resource planning

The establishment of unified measures for the identification and elimination of critical diseases and medical training in hospitals involving the transport network combined with on-site treatment guidance can strengthen and improve the understanding, assessment and emergency treatment skills of associated medical staff treating pregnant women and new - high-risk infants in hospitals involved in the transport network, stabilize the conditions of sick newborns and provide security for successful transfer.

Respiratory stabilization of the newborn regardless of the level of measures applied by the transport team did not significantly increase the time spent at the reference hospital. Continuous efforts to improve conditions in our country by generating documents that standardize practices and generating scientific information on the epidemiology of neonatal transfers, especially in critically ill patients, can help reduce the morbidity and mortality of newborns.

The objectives of the study:

• Did the early transfer of newborns from second-degree maternity that present a high risk of neonatal suffering lead to a decrease in morbidity and mortality?

• Has optimal pre-transport stabilization reduced the need for resuscitation during transport?

• Have perinatal regionalization practices led to lower neonatal mortality and morbidity rates?

• Do the morbidity and mortality of extremely low birth weight infants have a low incidence due to pretreatment resuscitation and perinatal regionalization?

• Is perinatal regionalization important in Ramania?

• Are the results of neonatal transportation independent of distance?

• Is managing the first few minutes after birth just the key to the survival of sick children, or the key to the success or failure of the whole transportation process?

• Is it essential for the reference hospital to be able to provide the appropriate standard of care from birth to the time of transfer?

General methodology

From a methodological point of view, the research involves a prospective study, cohort type 1, including 133 newborns of females and males who required ambulance transport. My study included a number of 133 children with respiratory distress syndrome (SDR), who were transported by ambulance from grade I and II maternity hospitals in the province to grade II maternity hospitals in Bucharest, most of the transports being carried out in period 2017 - 2020.

Study I

Introduction :

The transport of newborns from a lower grade maternity hospital (in the province) to a higher grade maternity hospital is a common practice in daily neonatal medicine in Romania. The clinical and biological parameters and the anthropometric parameters of the newborns before the transfer are registered in the transport sheets.

The purpose of the study was the prospective, longitudinal and exhaustive analysis of the data entered in the transport sheets of the newborns transported by ambulance from the provincial maternity hospitals, to render as specific as possible the specific regional character. Objectives

of the study were: the description of the variables, the testing of possible associations between them, as well as the description of the importance of the transport of newborns.

Material and method

This study analysed the anthropometric data, the clinical data of the 133 children with respiratory distress syndrome (SDR), newborns who had to be transported from lower grade maternity to higher grade maternity, the parameters recorded when leaving the hospital sending the newborn, status at the time of leaving the hospital, in the period 2017 - 2020. The anthropometric indicators of the newborn at the departure by ambulance, registered in the neonatal transport sheets, were analysed.

The following were analysed: gestational age, sex, age of the newborn in hours, Apgar score, diagnosis at referral, whether the newborn was resuscitated at birth, and the status of newborns on departure from the Provincial Maternity to the Third-Degree Maternity.

DISCUSSIONS

Of the 131 children with SDR for whom sex was recorded in the observation sheet, 60.3% (79 children) were male and 39.7% (52 children) were female.

The 133 newborns included in the analysis were, at the time of being sent by ambulance, the average age of 3 days, 75 children of the transferred children were less than one day old.

Regarding the new sex of newborns with RDS transferred to other hospitals, it is observed, without statistically significant differences, that boys are younger than girls. The analysis shows a decrease in mean weight and gestational age, among newborns with female SDR compared to males, thus, at birth, newborns with female SDR tend to have a higher weight. small, and lower gestational age, compared to male newborns. There is a slight increase in cases that required resuscitation at birth among female newborns compared to males. It is observed that babies with APGAR scores up to 5 (inclusive) required resuscitation

at birth, and as the APGAR score improves, the need for resuscitation at birth decreases, so in babies with SDR there is a tendency to associate resuscitation at birth. and assigning a lower APGAR score.

The analysis shows a higher incidence of prematurity among female newborns compared to males, the statistical test indicates that the degree of prematurity is differently distributed by sex, ie among premature births the share of different degrees of prematurity differs between the sexes, in this case the girls being more affected by the extreme prematurity, and the boys being rather affected by moderate and late prematurity. It is noted that as the degree of prematurity increases and the incidence of resuscitation at birth increases, extreme preterm infants were resuscitated at birth compared to preterm infants with gestational age of 34 weeks. This trend is also observable from the calculation of the associated risk rates. If in the case of a child born with moderate or late prematurity, the risk of requiring resuscitation at birth increases by only 0.57% compared to that of a full-term newborn, in the case of a child born with high prematurity, the risk of requiring resuscitation increases by 63.33% (compared to the risk of a full-term child), and in the case of a child born with extreme prematurity, the risk of requiring resuscitation at birth increases by 81.48% (compared to the risk of a full-term child).

72.9% of SDR newborns transported to other hospitals required oro-tracheal intubation (97 newborns), in the case of SDR newborns who were oro-tracheal intubated, it is noted that 59.8% had been resuscitated at birth (58 newborns), and of those who were not intubated, only 27.8% needed resuscitation at birth. There were no significantly different values between the sexes, although it is observed that among girls the incidence of high values of the ventricular allure is slightly higher (9.62% of girls had high values, and 6.33% of boys had high values. Without being a statistically significant difference, it is observed that in the case of intubated infants, low values of ventricular allure are more common (at 9.28% of those intubated) than in the case of neonates who did not require intubation (at 5.56%).

Newborns tend to have lower SPO2 values compared to females, even though in most cases they are within normal parameters. It is observed that low values of SPO2 are more common in intubated newborns / who needed intubation, ie in 6.19% of them (6 newborns), while only 2.78% (1 newborn) of newborns unintubated / not intubated showed SPO2 values below the normal limit.

There were no statistically significant differences in pH in neonates grouped by: resuscitation at birth (resuscitated infants showed similar pH reference values to those who did not need resuscitation), sex, prematurity (regardless of its degree), oro-tracheal intubation, how they were born, all these groups of newborns showing pH values close to the general average of the sample included in the study.

At the time of sending by ambulance, the newborns had values of average body temperature of 36 degrees, values that after stabilization on transport were normalized. metabolic, 23 newborns had low PCO2 values, while more than half, ie 56.8% of newborns, had elevated values above 51 mmHg. When they were taken from 2nd and 1st-grade maternity hospitals, the 133 newborns with SDR showed EB values between -20 and 5 mmol, newborns resuscitated at birth have slightly lower EB values than those who were not revived, 76.92% of the girls had low EB values and only 23.08% normal values, and among the boys, 64.65% had low values, 32.91% normal values and 2.53% high values. It should be noted that elevated EB values were found only in boys.

Intubated infants have lower EB values than intubated infants. Babies born spontaneously have slightly lower EB values than those born by caesarean section. In the case of children born by caesarean section, 35.71% of them have normal EB values, while 63.10% have low values and 1.19% have high values.

A low EB value is associated with a low measured SPO2 value, and a high EB value is associated with a high measured SPO2 value.

Study II:

Introduction:

Neonatal transportation in Romania is very important. The process of transferring newborns in critical condition must be timely, safe and efficient, requiring a high degree of coordination between all service providers. The development of the Neonatal Transport Service should be fully supported by all hospitals in the network, which admit and/or send newborns in critical condition. Transfers should not compromise the standard of care offered to newborns in lower-level maternity hospitals. The preparation of the newborn pre-transport

and its stabilization during the transport by ambulance influences the further development of the newborn.

This study aimed to see if there are statistically significant differences between the parameters recorded before and after the ambulance transfer, if the stability of seriously ill children before the transfer is the initial step to transport the newborn, and if proper management of high-risk newborns after birth is important for a successful transfer.

The objectives were: assessment of statistically significant differences between the parameters recorded at departure and arrival at maternity hospitals; description of some aspects regarding neonatal transport

Material and method

In this study, the hemodynamic parameters are analysed, at the time of hospitalization of 133 children with respiratory distress syndrome (SDR), who were transported by ambulance between hospitals, mostly between 2017 and 2020, being analysed on neonatal transport sheets.

DISCUSSIONS

After the transfer by ambulance, when they arrived at the higher degree maternity hospital, where they were transferred, the 133 newborns had SPO2 values with an average value of 96.55%. Thus, during the transfer the low values of SPO2 (below 90%) on leaving the hospital, during the transfer there were significant improvements. It is observed that during the transfer, the average SPO2 value measured in the 133 newborns improved by almost 1 unit (0.9 more precisely). Following the manoeuvres performed on the ambulance, upon receipt at the hospital of destination, the pH measured at 132 newborns showed an improvement in the average pH level compared to that recorded at the time of taking the newborns by ambulance, being at the same time much closer to the normal pH range. Statistically significant differences were noted between the pH measured in girls and that measured in boys.

In the study it is observed that following the medical assistance provided during the ambulance transport, at the time of reception in the destination hospital, the newborns showed an improvement in metabolic and respiratory parameters as follows: normal values of

newborn body temperature, normal values of PCO2, with statistically significant differences as follows:

Children born by caesarean section had higher mean values of PCO2 compared to those born spontaneously who showed values in the normal range.

Children who were not resuscitated at birth had higher mean PCO2 values compared to resuscitated children who had values in the normal range.

The unintubated children showed much higher average values of PCO2 compared to those intubated), who arrived at the transfer hospital normalized in terms of PCO2.

More than half (55.64%) of the children presented after the transfer by ambulance with normal values of the parameter EB, and 44.36% of them with low values.

Upon receipt at the destination hospital, after the manoeuvres performed during the ambulance transfer, the 133 newborns showed improved PO2 values.

There are statistically significant differences between the PO2 value measured in resuscitated children and the measured PO2 value in children who did not need resuscitation at birth. Thus, non-resuscitated newborns tend to have lower PO2 values compared to resuscitated ones. Unintubated babies tend to have lower PO2 values (after ambulance transport) compared to those with oro-tracheal intubation.

There were no statistically significant differences in the level of PO2 (reception) in newborns grouped by: sex, prematurity (regardless of its degree), and the way they were born (spontaneously or by caesarean section), all these groups with statistically close mean PO2 values.

STUDY III

Introduction

Ensuring equitable access to any specialized service for newborns can be challenging, especially in areas with grade II and I maternity hospitals. Neonatal transport services are tasked with serving lower-grade maternity hospitals and must provide services equitably in the region in operating. All newborns must receive care according to their needs, regardless of

where they were born. This study aimed to analyse statistical differences between hemodynamic indicators in newborns in the provincial hospital and Bucharest after ambulance transport and whether it influences the hours elapsed from birth to arrival at the receiving hospital. The study aimed to evaluate the significant hemodynamic differences after the measures were applied for the respiratory stabilisation of the newborn pre-transport and during transport.

Material and method

This study compares the anthropometric, clinical, and biological data of newborns transported from the provincial maternity hospital to the maternity hospital in Bucharest, the parameters recorded at the departure from the provincial hospital and the arrival in the hospital in Bucharest of 133 children with respiratory distress syndrome (SDR), which were transported by ambulance between hospitals, mostly between 2017 and 2020

The study included newborns with respiratory distress syndrome who were transferred by ambulance between the hospital where they were born (referral) and the transfer hospital (recipient).

DISCUSSIONS

The comparative study shows that depending on the hospital in which they were born, 75.9% of newborns (101 children) were transferred from a provincial hospital, and 24.1% (32 newborns) were transferred from a hospital in Bucharest. This study aimed to investigate how to stabilize the condition of newborns in critical condition in the neonatal transport network.

After the transfer, 96.99% of the newborns included in the study were hospitalized in Bucharest (129 children from the province or Bucharest), and 3.01% in hospitals in the province (4 children only from the province).

In the case of newborns in the province, 96.04% of them were transferred to a hospital in Bucharest (97 children) and only 3.96% to another hospital in the province (4 children).

Regarding the resuscitation at the birth of newborns transferred between hospitals, 56.44% of those born and transferred from a hospital in the province needed resuscitation at birth (57 newborns), and of those born in Bucharest 34.38% were resuscitated at birth (11 newborns).

There is a significant difference in the incidence of resuscitation at birth, in which case it is much higher in children transferred from the province. Practically, more cases (percentage) of children with SDR are transferred from the province who were resuscitated at birth than from Bucharest.)

Without indicating any statistically significant difference, it is observed that the incidence of boys with SDR who were transferred by ambulance from a provincial hospital was higher than those in Bucharest. Thus, 61.62% of the children transferred from the province were boys (61 newborns) and 38.38% were girls (38 newborns), and of those transferred from Bucharest 56.25% were boys (18 newborns) and 43.75% were girls (14 newborns).

Regarding the degree of prematurity in newborns included in the study, of the 74 newborns taken from provincial hospitals, 6.76% were born with extreme prematurity (<28 weeks), 32.43% with high prematurity (28-32 weeks), and 60.81% with moderate and late prematurity (32 - 37 weeks).

There is a significant difference in the incidence of children who needed intrusion, in which case it is much higher in children transferred from the province. Practically, more cases of children with SDR who were intubated are transferred from the province than from Bucharest.)

Regarding how children transferred between hospitals were born, 57% of those born and transferred from a provincial hospital were born by caesarean section (57 newborns) and 43% spontaneously (43 newborns), and of those born in Bucharest, 84.38% were born by caesarean section (27 newborns) and 15.63% spontaneously (5 newborns).

The Mann-Whitney U test was applied to determine if there were differences between newborns in hospitals in the province and those in Bucharest in terms of the age at which the transfer to another hospital was made. As the graphical analysis shows, the age distribution was not similar. Thus, babies born in a hospital in the province tend to be transferred earlier to a better-equipped hospital than those born in a hospital in Bucharest.

There are no statistically significant differences between the 2 groups of newborns (those born in the province and those born in Bucharest) in terms of: average birth weight gestational age, pH measured at referral, PO2, excess of bases, SPO2, ventricular allure.

As the graphical analysis shows, the age distribution was not similar. There are statistically significant differences between the age of newborns in the province and the average age of newborns in Bucharest U = 1076, Z = -3,144, p = 0.002. Thus, babies born in a hospital in the province tend to be transferred earlier to a better-equipped hospital than those born in a hospital in Bucharest.

CONCLUSIONS

o Prospective study based on viewing the transport files of 133 newborns who were transported from lower-grade units to grade III centres between 2017-2010.

o the variables examined included maternity medical interventions and transport team interventions before and during transport.

o 87.2% (116 children) of the children included in the study were at most one-week-old, 6% (8 children) were between 8 and 14 days old, 0.8% (1 child) were between 15 and 21 days old, 3.8% (5 children) were between 22 and 31 days old, and 2.2% (3 children) were around 2 months old (58-63 days).

o Of the 131 children with SDR for whom sex was recorded in the observation sheet, 60.3% (79 children) were male and 39.7% (52 children) female and it is observed that males predominated.

o Newborns with SDR included in the study had between 500 and 4500 grams at birth, the average weight being 2271.54 grams, there is a decrease in the average weight among newborns with female SDR compared to males.

o There is a slight increase in cases that required resuscitation at birth among female newborns compared to males

o There are statistically significant differences between the weight of newborns who needed resuscitation at birth and the weight of newborns who did not need resuscitation at birth.

o The need for resuscitation at birth tends to be associated with lower birth weight.

o Among children with SDR there is an association between the gestational age of the mother at birth and the sex of the newborn, in the sense that girls tend to be born at a younger gestational age than boys.

o There are statistically significant differences between the gestational age at birth of those who needed resuscitation and the gestational age at which those who did not need resuscitation were born, so babies born at younger gestational ages tend to be resuscitated more often at birth.

o It is observed that babies with APGAR score up to 5 (inclusive) require resuscitation at birth, and as the APGAR score improves, the need for resuscitation at birth decreases steadily.

o The analysis indicates that the degree of prematurity is differently distributed by sex, ie among premature births the share of different degrees of prematurity differs between the sexes, in this case girls are more affected by extreme prematurity and boys are more affected by moderate prematurity and late.

o The more severe the degree of prematurity with which a child is born, the more likely it is that it will require resuscitation at birth.

o There are statistically significant differences between the age of newborns who needed IoT and the age of newborns who did not need IoT, thus, the need for intubation of the newborn is associated with younger age.

o In the case of infants with SDR included in this study, among those who were resuscitated at birth the risk of being intubated oro-tracheal during ambulance transport to another hospital increased by 42% compared to those who did not need resuscitation at birth

o There were no statistically significant associations between the values of the ventricular allure and: the birth weight of the fetus, the gestational age at which they were born, the APGAR score, and the age of the newborn.

o There are statistically significant differences between the SPO2 value measured in boys and the SPO2 value measured in girls, thus, male babies tend to have lower SPO2 values compared to female ones, even if in most cases they are in the parameters of normalcy

o It has been indicated that there is a statistically significant increase in the values of the SPO2 parameter measured after transfer by ambulance compared to the measurement performed before transfer.

o Upon receipt at the hospital of destination, the pH measured at 132 newborns showed an improvement in the average pH level compared to that recorded at the time of taking the newborns by ambulance

o Following the medical assistance provided during the ambulance transport, compared to the time of sending, at the reception the temperature of the newborns was on average 0.5 degrees higher, they unanimously presented normal temperature values. From a statistical point of view, this increase is significant.

o There were no statistically significant differences between PCO2 measured before and after the transfer, however, it was observed that upon hospital admission, after transport by ambulance, 35.34% of newborns arrived with normal PCO2 values, while 40.6% of them presented high values and 24.06% low values, so that following the manoeuvres performed on the ambulance, at the destination were recorded normal values of PCO2 to 2 times more newborns than were recorded at departure.

o o As the graphical analysis shows, there are statistically significant differences between the PCO2 value measured in children resuscitated at birth and the PCO2 value measured in children who did not need resuscitation at birth, so babies who did not need resuscitation at birth tend to have values of PCO2 (after ambulance transport) is higher compared to those resuscitated at birth.

o There is a strong improvement in the situation of newborns in terms of PCO2 level, at referral, only 17.53% of them register normal values, while upon receipt their share increases to 43.03% (after manoeuvres on the ambulance, the number triples newborns arriving at the destination hospital with normal PCO2 values).

o Following the assistance provided during ambulance transport, there is a major improvement in the EB parameter measured in newborns included in the study, this improvement indicates a statistically significant change in the EB parameter measured after transfer by ambulance compared to the measurement performed before transfer.

o Compared to the PO2 level at the time of sending by ambulance, on receipt it increased on average by 2 mmHg (from 54.95 to 56.27), the application of the Wilcoxon signed-rank test indicating a statistically significant change in the PO2 parameter measured after transfer by ambulance with the measurement performed before transfer ($Z = 6.254$, $p < 0.001$).

o As the graphical analysis shows, the distribution of PO2 values was not similar, there are statistically significant differences between the PO2 value measured in intubated children and the PO2 value measured in extubated children, thus, extubated babies tend to show PO2 values (after ambulance transport).) lower compared to those with oro-tracheal intubation.

o The statistical test indicates that between transfers from the province and those from Bucharest there is a significant difference in the incidence of resuscitation at birth, in this case, it is much higher in children transferred from the province, practically from the province are transferred more cases (percentage) of children with SDR who were resuscitated at birth than in Bucharest.

o More cases of children with SDR who were intubated than from Bucharest are transferred from the province.

o It is observed that from the hospitals in Bucharest are transferred significantly more cases of children with RDS who were born by caesarean section compared to those in the province.

o Children born in a hospital in the province tend to be transferred earlier to a better-equipped hospital than those born in a hospital in Bucharest.

ORIGINALITY AND INNOVATIVE CHARACTER

The regionalization of neonatal care has contributed to the evolution of neonatal transportation, as neonatal and subspecialty resources have become limited, geographically centralized, and ultimately improved the outcomes of newborns. Although there is no single standard for a neonatal transportation system or program, there are optimal and recommended elements to support a high-functioning system and team. For optimal and coordinated care, adequate medical transport infrastructure needs to be continuously developed and refined to enable the delivery of neonatal patients to regional grade III centres and for specialized

neonatal care to be available and provided to newborns in need. There are various modes of air or ground transportation and the different composition of the transport team; however, it is important that, regardless of structure, the newborn care team is highly competent, with proven skills in caring for the sickest of newborns, including airway management.

Neonatal transport involves moving sick newborns in optimal conditions to ensure good results. This study aimed to evaluate the pre-and intra-transport care of sent newborns. The transport process can provide a level of care similar to that of a neonatal tertiary center. The neonatal transport team plays an important role in a regionalized health system. It is a study about neonatal transport, which tried to identify the characteristics of neonatal transport in Romania and the factors that influence the team's performance. Qualitative research uses a thematic analysis approach that suggests potential opportunities to improve neonatal transportation. Future research may explore the costs and benefits of strategies such as newborn transport services, transfer centers and telemedicine. National standards of care in neonatal transport medicine are evolving with increasing attention to quality parameters and process improvement.

Studies show that proper respiratory stabilization of newborns before the transfer is considered essential to reduce adverse events that may occur during the transfer process. The transport of newborns in critical condition by specialized transport teams is associated with a significant improvement in their clinical condition upon arrival at the receiving hospital. Seriously ill newborns can be safely transported to a referral center, and the risks of travel are negligible compared to the risks of leaving the child in a hospital that has no staff or equipment for neonatal intensive care.

A neonatal transport network is needed, a complementary but distinct way of referring, to satisfy those premature and high-risk newborns, who are seriously ill, and who are born in non-staffed hospitals and facilities that provide vigilantly and early care. so necessary.

It is important to promptly identify all risk factors for the life of the newborn to prevent the deterioration of the general condition of the newborn during transport. Neonatal transport in optimal conditions improves the prognosis of the newborn both in the short and long term. The originality of our study lies in the uniqueness of the subject. There is no report on the transport of newborns in Romania. In addition, there is a lack of information about the medical parameters of infants with SDR who need such medical action.

This study is novel because we have not found similar reports in the literature on the respiratory balance of the newborn for ambulance transport. Cumulating the changes made in the neonatal transport network we can observe low morbidity and mortality in preterm and newborns transferred immediately after birth in higher grade hospitals. Sick newborns in non-tertiary centers rely on the skills of experts in neonatal transport teams and on efficient systems to provide safe and timely transport to tertiary centers. If neonatal intensive care is effective in lowering the mortality rate for caring for premature and sick newborns, then certainly for these children born in maternity wards without a specialized neonatal intensive care unit, this standard of treatment should be available at birth. , before and during transport.

The current paper is a starting point for the integration of transport teams in the neonatal network of each maternity hospital, understanding the importance of resuscitation and balancing premature and newborns in non-tertiary maternity hospitals, for improving the chances of survival and further development and understanding that transport teams have developed. specific skills for the transport of newborns through extensive training and experience in ensuring safe and quality transport. Ensuring neonatal intensive care during the transport of newborns from a community hospital to a tertiary center is a determining, important factor in the subsequent outcomes of the newborn.

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2. Clinical characteristics of the newborns with distress syndrome who required transfer by ambulance to other hospital units Adriana Nistor, Romina-Marina Sima, Liana Pleș, Anca-Daniela Stănescu.

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