



THE ROLE OF MODERN NEONATAL APPROACHES IN REDUCING PERINATAL MORTALITY

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ABSTRACT

This article analyzes the importance of modern international neonatal approaches in reducing perinatal mortality associated with preterm birth in the perinatal centers of the Fergana region. The study investigated the main risk factors contributing to perinatal losses among preterm infants, the quality of neonatal resuscitation, and the effectiveness of neonatal care. Retrospective analysis, clinical observation, and comparative evaluation methods were employed. The results demonstrated that neonatal care provided in accordance with international protocols significantly reduced perinatal mortality. It was concluded that improving neonatal services and implementing modern international standards in clinical practice are key factors in reducing perinatal mortality in the Fergana region.

Introduction

Today, preterm birth is recognized worldwide as one of the leading causes of perinatal and neonatal mortality [1]. According to the World Health Organization, infants born prematurely are at a significantly higher risk of respiratory distress, immaturity of the central nervous system, impaired thermoregulation, infectious complications, and metabolic dysfunctions [2].

In the Fergana region, the high population density, persistently elevated birth rates, and the increasing clinical workload of perinatal centers make the comprehensive study of problems associated with preterm birth particularly relevant. In particular, reducing perinatal mortality among preterm infants is of great importance not only from a clinical perspective but also in terms of healthcare organization and social welfare.

In recent years, a number of effective approaches for the care of preterm infants have been developed and implemented in international neonatal practice [3]. These include antenatal corticosteroid prophylaxis, early resuscitation in the delivery room, continuous positive airway pressure (CPAP) and non-invasive respiratory support, surfactant therapy, thermal protection, advanced monitoring, and infection control systems, all of which have demonstrated significant success in reducing perinatal losses [4]. Adapting these approaches to the activities of regional perinatal centers remains an important scientific and practical task in the context of the Fergana region.

The significance of this study". The study is aimed at evaluating the causes of perinatal mortality associated with preterm birth in the perinatal centers of the Fergana region, determining the practical effectiveness of modern international neonatal approaches, and developing improved recommendations adapted to local conditions for reducing perinatal mortality.

The main objective of this study is to comprehensively evaluate the clinical and organizational significance of modern international neonatal approaches in reducing perinatal mortality associated with preterm birth in the perinatal centers of the Fergana region. Within the framework of the study, it is planned to identify the major risk factors contributing to perinatal losses among preterm infants, analyze current practices of neonatal resuscitation and intensive care, and assess the effectiveness of modern methods implemented in accordance with international clinical protocols.

Furthermore, the study will evaluate the quality of care provided to preterm infants in the perinatal centers of the Fergana region, as well as the impact of respiratory support, surfactant therapy, thermal protection, and infection control measures on perinatal mortality rates. Based on the findings, the study aims to develop evidence-based practical recommendations for reducing perinatal mortality associated with preterm birth, improving regional perinatal services, and identifying opportunities for the effective implementation of international neonatal standards into local clinical practice.

Research objectives

Within the framework of this study, a number of scientific objectives were defined to conduct an in-depth analysis of the clinical and organizational aspects of perinatal mortality associated with preterm birth in the perinatal centers of the Fergana region.

First, the study aims to identify the major risk factors contributing to perinatal mortality among preterm infants, including reduced gestational age, low birth weight, respiratory distress syndrome, neonatal infections, severe asphyxia, and the impact of maternal obstetric and extragenital pathologies.

In addition, an important objective is to assess the quality of neonatal resuscitation and intensive care, including the timely and appropriate provision of primary care in the delivery room, methods of respiratory support, surfactant therapy, thermal protection, and monitoring systems, as well as their impact on perinatal mortality.

Another objective of the study is to comparatively evaluate the effectiveness of treatment and care measures implemented in accordance with international neonatal protocols against current clinical practices.

Finally, based on the obtained results, the study aims to develop evidence-based and practice-oriented recommendations for reducing perinatal mortality associated with preterm birth in the Fergana region.

RESULTS

According to the study findings, the highest risk of perinatal mortality was observed among infants born before 32 weeks of gestation and with a birth weight of less than 1500 grams [5]. In particular, respiratory distress syndrome, severe asphyxia, neonatal sepsis, and hypoxic injury of the central nervous system were identified as the leading causes of perinatal losses [6].

In the first group, where standard approaches were applied, the perinatal mortality rate was relatively high, with severe respiratory failure and delayed resuscitation being the predominant contributing factors. In this group, insufficient thermal protection in the delivery room, delayed initiation of surfactant therapy, early transition to invasive ventilation, and inadequately optimized infection control measures were frequently observed.

In the second group, where elements of modern international neonatal approaches were implemented, perinatal outcomes were comparatively improved [7]. Ensuring thermoregulation during the first minutes after birth, early initiation of continuous positive airway pressure (CPAP), timely administration of surfactant according to clinical indications, controlled oxygen therapy, hemodynamic monitoring, and preventive measures against infection significantly enhanced treatment effectiveness [8]. As a result, the perinatal mortality rate in this group was considerably lower than that observed in the first group.

Furthermore, maternal conditions during pregnancy, including anemia, preeclampsia, intrauterine infection, placental insufficiency, and premature rupture of membranes, were identified as factors that increased the risk of preterm delivery and perinatal complications. In cases where antenatal protective measures, particularly corticosteroid therapy, were administered, the severity of respiratory distress in newborns was reduced.

The results demonstrated that reducing perinatal mortality depends not only on the quality of neonatal resuscitation but also on a continuous and standardized approach extending from pregnancy through delivery and the early neonatal period. The implementation of neonatal care algorithms aligned with international standards in the perinatal centers of the Fergana region offers a realistic opportunity to reduce perinatal mortality.

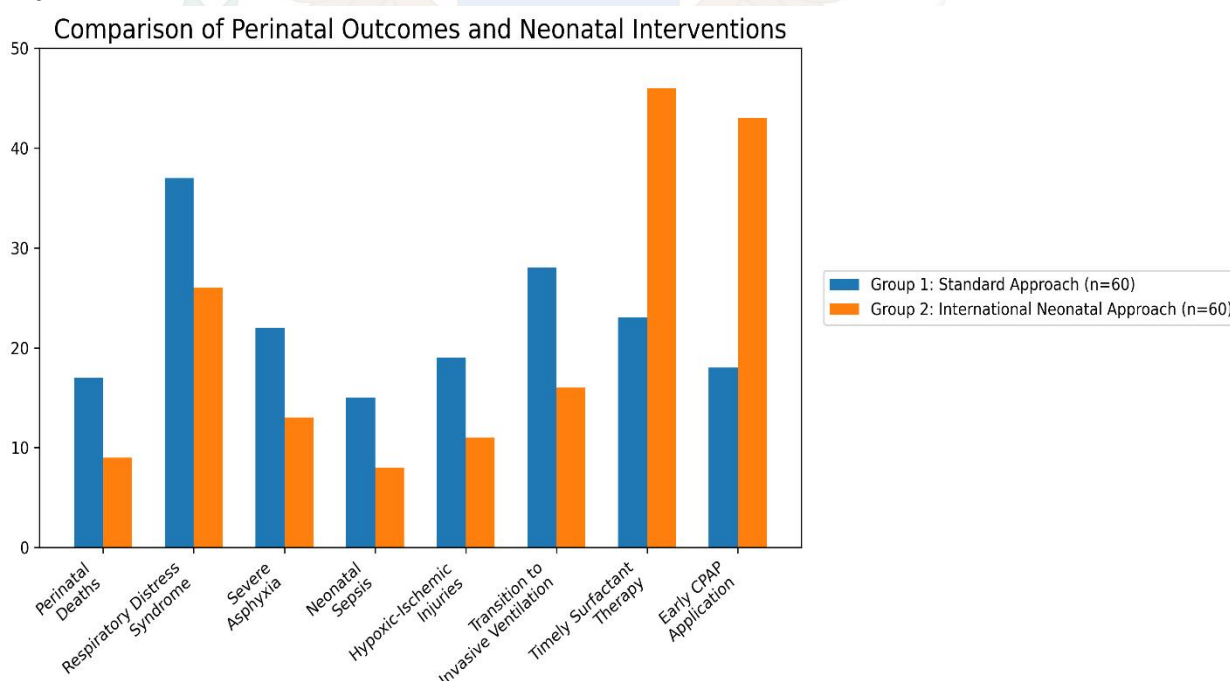


Figure 1. Comparison of Perinatal Outcomes and Neonatal Interventions Between the Standard Approach Group and the International Neonatal Approach Group ($n = 60$ per group).

DISCUSSION: The problem of perinatal mortality associated with preterm birth is multifactorial and is closely related to maternal pathological conditions, fetal immaturity, complications during labor and delivery, and the quality of neonatal care [9]. The findings of this study indicate that the majority of perinatal losses in the perinatal centers of the Fergana region are associated with respiratory distress syndrome, infectious complications, and insufficient standardization of care provided during the early postnatal period.

In international practice, the management of preterm infants places particular emphasis on **gentle resuscitation, non-invasive respiratory support, maintenance of stable body temperature, early enteral feeding, promotion of breastfeeding, and advanced monitoring systems**. The gradual implementation of these approaches in the Fergana region may also contribute to improved clinical outcomes and a reduction in perinatal mortality.

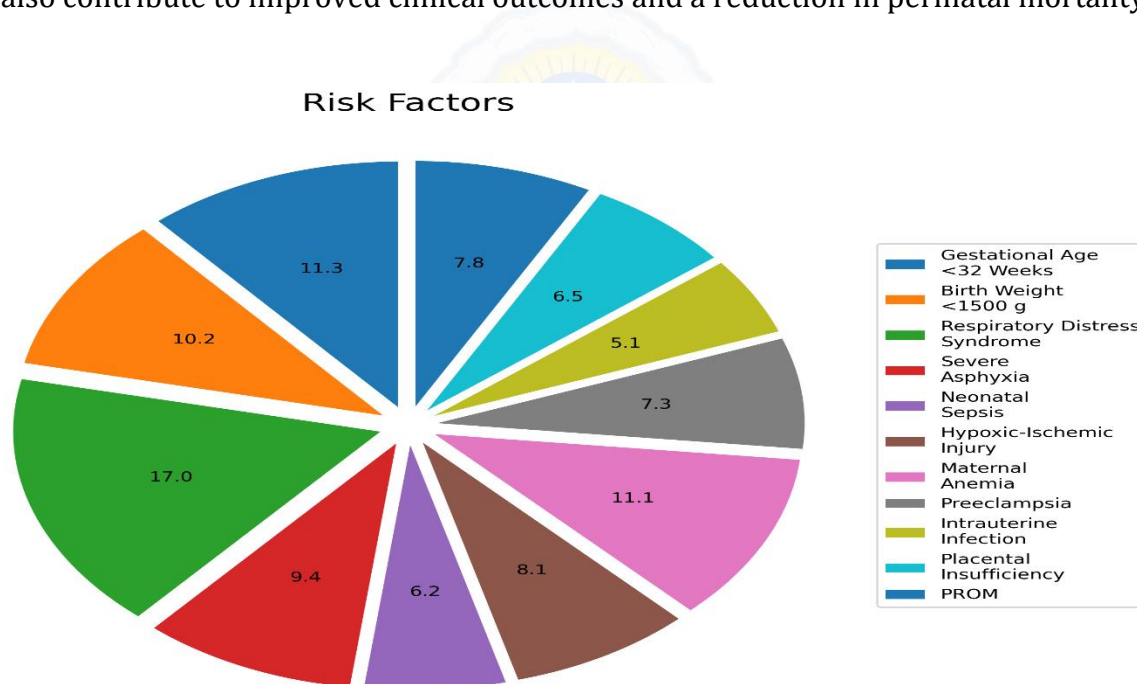


Figure 2. Major Risk Factors Associated with Perinatal Mortality Among Preterm Infants in the Fergana Perinatal Centers.

The study findings indicate that modern international neonatal approaches not only reduce perinatal mortality but also decrease the frequency of severe complications [10]. In particular, the proper organization of respiratory support, timely initiation of surfactant therapy, and strengthened infection control measures significantly improve clinical outcomes.

Conclusion. The study demonstrated that perinatal mortality associated with preterm birth in the perinatal centers of the Fergana region is largely influenced by low gestational age, low birth weight, respiratory distress syndrome, neonatal infections, and the quality of postnatal intensive care. Perinatal losses were especially high among infants born before 32 weeks of gestation and those with very low birth weight.

It was established that the implementation of modern international neonatal approaches, including early continuous positive airway pressure (CPAP), surfactant therapy,

thermal protection, infection control, controlled oxygen therapy, and antenatal preventive measures, has high clinical effectiveness in reducing perinatal mortality.

To reduce perinatal mortality rates in the Fergana region, it is advisable to standardize neonatal resuscitation algorithms in regional perinatal centers, enhance the practical skills of healthcare professionals, adapt international clinical guidelines to local conditions, and strengthen a continuous perinatal care approach in the management of preterm births.

Practical Recommendations

1. Early identification of pregnant women at high risk of preterm delivery and their timely referral to specialized perinatal centers.

2. Standardization of thermal protection and primary resuscitation procedures for preterm infants in the delivery room.

3. Wider implementation of early Continuous Positive Airway Pressure (CPAP) and surfactant therapy according to clinical indications for the management of Respiratory Distress Syndrome (RDS).

4. Strengthening infection control measures and monitoring systems in neonatal intensive care units and neonatal departments.

Regular training programs for obstetricians-gynecologists and neonatologists on international neonatal protocols and evidence-based clinical practices.

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