

## Factors Associated with Respiratory Distress Syndrome (RDS) in Preterm Neonates Admitted at FMIC in Kabul City: A Retrospective Cross-Sectional Study

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**Abstract :** INTRODUCTION: Prematurity is one of the primary causes of infant death in Afghanistan, and it complicates a variety of critical issues, such as respiratory distress syndrome (RDS). Although RDS has been associated with serious consequences, there is a lack of scientific information on the associated factors of this problem in Afghanistan; hence, this study was undertaken to fill that gap. OBJECTIVES: The purpose of this study was to find the occurrence rate and associated factors of RDS in premature neonates. METHODS: This retrospective cross-sectional study was conducted at the Neonatal Intensive Care Unit of the French Medical Institute for Mothers and Children Hospital in Kabul City, Afghanistan (01/01/2022-30/12/2022). Statistical analysis was performed by SPSS 24. RESULT: A total of 78 preterm newborns were enrolled in this study, and respiratory distress syndrome developed in 51.3% of them. Based on gestational age, the occurrence rates of RDS within groups of extremely, early, moderate and late preterm neonates were 100%, 55.6%, 44%, and 35.7%, respectively. The occurrence of RDS was found to be 100% in extremely low birth weight, 56.2% in very low birth weight, and 58.8% in low birth weight neonates. The gestational ages of these infants had a positive correlation with birth weight ( $r = 0.648$ ,  $p = 0.01$ ,  $n = 78$ ). The preterm neonates in the RDS group versus the non-RDS group had a mean birth weight of ( $1610 \pm 314.4$  g vs  $1981 \pm 520.3$  g), a mean gestational age of ( $31.65 \pm 2.2$  w vs  $33.18 \pm 2.10$  w) and a mean hemoglobin level of ( $13.85 \pm 3.28$  g vs  $16.09 \pm 3.26$  g). There was a significant association between RDS and neonatal anemia (AOR=5.9), neonatal sepsis (AOR=4.2), vaginal delivery (AOR=8.7), delivery at low-resourced settings (AOR=2.7), PROM (AOR=4), and antepartum hemorrhage (6.9). The mortality rate in preterm neonates was found to be 26.8% and was significantly associated with very and extremely low birth weights (AOR=8.2), early and extremely preterm births (AOR=6.3), female gender (AOR=3.8), antepartum hemorrhage (AOR=4.6,) and PROM (AOR=5.7). CONCLUSION: RDS was highly prevalent in preterm newborns, and the highest rates were seen within groups of extremely preterm and extremely low-birth-weight newborn babies. RDS was found to be associated with lower neonatal birth weight, gestational age, and hemoglobin level, as well as neonatal anemia, neonatal sepsis, vaginal delivery, birth in low-resource settings, PROM, and antepartum hemorrhage. The neonatal mortality in preterm neonates was higher than in high-income countries. Proper management of the aforementioned associated factors will reduce the incidence of RDS and neonatal mortality in preterm neonates.

**Keywords :** respiratory distress syndrome (RDS), preterm neonates, prematurity, neonatal mortality

**Conference Title :** ICNP 2025 : International Conference on Neonatology and Pediatrics

**Conference Location :** Amsterdam, Netherlands

**Conference Dates :** May 01-02, 2025