

Background: Respiratory Distress Syndrome is a clinical manifestation due to a deficiency or dysfunction of pulmonary surfactant. The use of CPAP for RDS Produces more regular breathing pattern, establishes and maintains functional residual capacity, decreases upper airway resistance, results in progressive alveolar recruitment, inflates collapsed alveoli and reduces intrapulmonary shunting, decreases upper airway collapsibility and reduces obstructive apneas, promotes the release of and conservation of surfactant on the alveolar surface.

Objective: To evaluate the effectiveness of using bubble CPAP in the management of respiratory distress syndrome and to identify the risk factors associated with its failure.

Patients and methods: 63 newborns who have been diagnosed as RDS were started on Bubble CPAP with bi-nasal prongs. Bubble CPAP was considered to be successful if the respiratory distress improved and the baby could be successfully weaned off from CPAP. Based on radiological findings, the severity of RDS was graded as mild, moderate and severe.

Results: The mean gestational age was 30.67 ± 2.16 weeks and mean birth weight was 1525.34 ± 441.49 grams. The median age of starting CPAP was 2 hours of life. The median duration of CPAP was 36 hours. 42 (66.67%) newborns were survived and weaned successfully from CPAP and 21 (33.33%) failed to weaned successfully from CPAP and turn to mechanical ventilation. extreme low birth weight, lower gestational age, multiple pregnancies, radiological signs of severe RDS, and delay in the application of CPAP, and long duration of CPAP treatment were associated with poor neonatal out come and failure of CPAP (p value <0.05). Sepsis, apnea and shock are the main immediate complications of RDS patients which may adversely affect the CPAP success.

Conclusion

1. One year experience of the medical and nursing staff with the using of BCPAP had risen its effectiveness from (44.42%) in Umran, *et al.* to (66.66%) in our study within the same center; however, it is still less than that founded by a lot of other researches.
2. Preterm neonate who are; “extreme low birth weight, lower gestational age, multiple pregnancies (twin or triple), whiteout on the chest X-ray, delay in the application of CPAP, prolong duration of CPAP treatment” have increased risk for CPAP failure.
3. Sepsis, apnea and shock are the main immediate complications of RDS patients which may adversely affect the CPAP success.