Kufa Journal for Nursing Sciences
Open Access Full Text Article

Publisher
University of Kufa, Faculty of Nursing

Received: 10 March, 2025
Accepted: 25 May, 2025
Published: 22 June, 2025
Vol. 15(1), 2025: 66 – 73

https://doi.org/10.36321/kjns.vi20251.19037
ORIGINAL RESEARCH

Neonatal Risk Factors Associated with Respiratory Distress: A Descriptive Analysis from NICUs in Sulaymaniyah City, Iraq.

Bnar Hassan Salih [1], Awayi Ghazy Abdulkareem [2].

[1] *Pediatric Nursing Department, College of Nursing, University of Sulaimani, Sulaimani, Iraq.*
[2] *Pediatric Nursing Department, College of Nursing, University of Sulaimani, Sulaimani, Iraq.*

CORRESPONDING AUTHOR: Bnar Hassan Salih, Pediatric Nursing Department, College of Nursing, University of Sulaimani, Sulaimani, Iraq. Email: **bnnar.salih@gmail.com**

ABSTRACT

Background: Respiratory distress is a leading cause of NICU admissions and can lead to severe complications if not promptly identified and managed. Despite its prevalence, limited research has examined the specific neonatal risk factors contributing to respiratory distress in Sulaymaniyah, Iraq, creating a knowledge gap in neonatal healthcare.
Objectives: This study aims to identify the neonatal risk factors associated with respiratory distress among newborns admitted to NICUs in Sulaymaniyah City, Iraq.
Methodology: A descriptive-analytical study was conducted at two hospitals using a purposive sampling technique to recruit 218 neonates with respiratory distress. Data were collected through structured questionnaires and hospital records, with statistical analysis performed using SPSS 24 to determine associations between neonatal characteristics and respiratory distress causes.
Results: Among the study population, 57.8% were male, and prematurity was identified in 68.8% of cases. RDS was the leading cause (64.2%), followed by TTN (27.5%) and MAS (8.3%). Significant associations were found between respiratory distress and gender, birth weight, gestational age, APGAR scores, and plurality ($p < 0.05$).
Conclusion: Respiratory distress accounts for a substantial proportion of total admissions to the NICU, with significant contributions from RDS, TTN, and MAS. Prematurity (68.8%) and SGA (65.7%) were found to be significantly associated with RDS ($p < 0.001$).

Keywords: Neonate, Respiratory Distress, Neonatal Risk Factors, Premature.

INTRODUCTION

One of the most frequent causes of admission to the Neonatal Intensive Care Unit (NICU) is respiratory distress (Rijal & Shrestha, 2018), within 48-72 hours (Sauparna et al., 2016).

It frequently affects premature neonates, and its frequency and severity are inversely correlated with birth weight and gestational age. Although 1% of all births have Respiratory Distress, the incidence rises to 50% at 30 weeks, 75% at 28 weeks, and 90% at 26 weeks. (Bahwal, 2020).

The risk of newborn respiratory illness can be increased by several risk factors. Meconium-stained amniotic fluid (MSAF), caesarean birth, gestational diabetes, maternal chorioamnionitis, prenatal ultrasound findings including oligohydramnios or structural lung abnormalities, and prematurity are some of these factors. (Kommawar et al., 2017). Compared to newborns without respiratory distress, neonates with respiratory distress are 2-4 times more likely to die. (Abdel Baseer et al., 2020).

How to Cite: Salih, B. H., & Abdulkareem, A. G. . (2025). Neonatal risk factors associated with respiratory distress among newborns in Sulaymaniyah City, Iraq. *Kufa Journal for Nursing Sciences, 15*(1), 66-73. https://doi.org/10.36321/kjns.vi20251.19037

Respiratory distress is diagnosed by spotting at least two of the following signs: a breathing rate of over 60 breaths per minute, visible retractions (such as a subcostal, xiphoid, and suprasternal recession), flaring nostrils, grunting sounds during exhalation, and cyanosis without oxygen administration. These symptoms must be observed during two separate examinations at least one hour apart (B.P. et al., 2020).

NRD can originate from either respiratory or non-respiratory causes. It's important to note that most cases fall under the respiratory category. The most common respiratory issues causing distress in newborns are TTN, RDS , and MAS (Musa Aljawadi & Al-Muhsen Ali, 2019).

AIMS OF THE STUDY

This study aims to identify the neonatal risk factors associated with respiratory distress among newborns admitted to NICUs in Sulaymaniyah City, Iraq.

METHODOLOGY

Study Design:

This study was designed to be a descriptive-analytical investigation aimed at achieving the study objectives. It has been conducted from November 12th , 2024 until March 1st, 2025.

Sample and Sampling:

A non-probability (purposive) sample technique was used to assess 218 newborns with respiratory distress who attended the neonatal intensive care units in Maternity Teaching Hospital and Dr. Jamal Ahmad Rashid Pediatric Hospital in Sulaymaniyah City/Iraq.

Inclusion Criteria:

1. Newborns diagnosed with respiratory distress.
2. Both genders.
3. Mothers of the newborn who have complete medical record available.
4. Mothers who agree to participate in the study.

Exclusion Criteria:

1. Cases with incomplete medical record or missing data.
2. Mother who did not will to participate in the study.

Infants with another diagnosed diseases such as, Neonatal Jaundice, ABO incompatibility, Necrotizing Enterocolitis……

Data Collection:

After explaining the objectives of the study and gaining oral permission from the mothers and cooperation to be involved and informed consent was obtained, the data was collected. The data collected by the researcher through a direct interview was used to fill out the structured questionnaire and collect the data of the neonate on the file that contains information related to the neonates.

Study Instrument:

A questionnaire was constructed through an extensive review of international literature and guidelines. The questionnaire consists of three sections:

Section I: Socio-demographic of the mothers, it was consisted of (11) items. **Section II:** Maternal Risk Factors, it was consisted of (12) items. **Section III:** Socio-demographic of the neonates, it was consisted of (4) items. **Section VI:** Neonatal Risk Factors, it was consisted of (7) items.

Validity of the Questionnaire:

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Several validities have been described including face validity, constructed validity, and content validity. The content validity of the questionnaire was determined through a panel of (experts) related to specialties (Appendix). Experts agreed upon the bases of the comments and suggestion made by the above-mentioned experts, some items were modified, some were excluded, and the questionnaire took its final form only when the expert's opinions were taken into consideration.

Reliability of the questionnaire:

Reliability is the consistency of a particular method in measuring or observing the same phenomenon. The reliability of the questionnaire was determined through the Alpha Cronbach the outcome was (0.821) which indicates that the questionnaire is highly reliable as a tool for data collection.

Ethical Considerations:

This study received approval from the Scientific Committee of the Pediatric branch, College of Nursing/ University of Sulaimani. Following approval of the Ethical Committee College of Nursing/ University of Sulaimani, an official letter has been sent from the College of Nursing/ University of Sulaimani to the General Directorate of Health (DOH) in Sulaymaniyah City to get an agreement for data collection of the current study. Consequently, an official letter has been submitted from DOH to the Maternity Teaching Hospital and Dr. Jamal Ahmad Rashid Pediatric Hospital.

Statistical Analysis:

After data collection, Statistical Package for Science Services (SPSS 24) was used for data analysis. The statistical procedures that were applied to determine the result of the study include (Frequency, Percentage, Chi-square). When the P-value is less than (0.05), the result is considered significant.

Rating scales and scores:

There are criteria of the probability level of determining the significance of the test:

P-value as:

1. **High significant (P< 0.001)**
2. **Significant (P< 0.05)**
3. **Non-significant (P> 0.05)**
4. **Very highly significant (P< 0.000).**

RESULTS

Neonatal socio-demographic variables for the research population are shown in Table one. Male infants made up 57.8% of the total, and females made up 42.2%. With 89.0% of instances occurring at delivery, 9.2% on the first day, and 1.8% after the first day, respiratory distress was a prevalent worry. In terms of birth weight, 45.0% were born weighing between 2.5 and 4 kg, 24.8% were born weighing less than 2.5 kg, 19.3% were born weighing less than 1.5 kg, and 9.2% were born weighing less than 1 kilogram. In just 1.8% of instances, macrosomia (>4 kg) was seen.

Gestational age analysis showed that 68.8% of neonates were born before 37 weeks, 31.2% were born between 37 and 41 weeks, and no post-term birth cases were reported. The majority of neonates (85.3%) were singletons, but 2.8% were triplet pregnancies and 11.9% were twin births.

Neonatal risk variables for the research population are shown in Table two. At one minute, APGAR scores showed that 12.8% of neonates were severely distressed (0–3), 48.6% were moderately distressed (4–6), and 38.5% had normal scores (7–10). By the fifth minute, the percentage of severely distressed neonates dropped to 0.9%, while 21.1% remained moderately distressed, and 78.0% had normal scores.

42.2% of the newborns had jaundice. In terms of respiratory treatment, 78.9% needed Continuous Positive Airway Pressure (CPAP), and 21.1% needed oxygen supplementation. Respiratory distress syndrome (RDS) accounted for 64.2% of infant respiratory distress, followed by transient tachypnea (27.5%) and Meconium aspiration syndrome (8.3%).

Tables (three and four) show the association between causes of respiratory distress in neonates and socio-demographic characteristics of neonates and neonatal risk factors. As a result, it shows that there was a statistically significant difference (or association) between RDS, TTN, and MAS as the causes of respiratory distress in neonates about gender (p-value = 0.007), birth weight (p-value = 0.000), gestational age (p-value = 0.000), APGAR score at minute 1 (p-value = 0.001), APGAR score at minute 5 (p-value = 0.021), and plurality (p-value =

0.027) because the result of the p-value was less than the common alpha 0.05.

The analysis did not reveal a statistically significant difference or association between RDS, TTN, and MAS as causative factors of neonatal respiratory distress in relation to other neonatal risk factors. This conclusion is based on the p-value exceeding the conventional significance threshold of 0.05, indicating that any observed differences were likely due to chance rather than a meaningful association.

DISCUSSION:

In the current study, it showed that male gender is significantly higher in Transient Tachypnea of the Newborn (73.3% versus 26.7% for female) and then Meconium Aspiration Syndrome (66.7% versus 33.3% for female), which is consistent with another study (Bahwal, 2020) showed that male gender is higher in TTN (59.6% male, 40.4% female), MAS (60% male, 40% female). Lung development starts before birth and tends to be more advanced in female fetuses. Around the 16th to 26th weeks of gestation, fetal breathing movements begin, which are important for lung development. Sex hormones also play a key role: testosterone from the fetal testes delays surfactant production, while estrogens from the placenta positively influence both surfactant production and amelogenesis during the neonatal and pubertal stages (Abdel Baseer et al., 2020).

This study showed that 92 (65.7%) of the participants were Small for Gestational Age (SGA) in RDS followed by Appropriate for Gestational Age (AGA) and Large for Gestational Age (LGA) demonstrated as 40 (32.9%) and 2 (1.4%), respectively. This result aligns with the result of a study that has been conducted in Vietnam, showing the association that low birth weight increases the risk of RDS by 5.32 times. (Thanh et al., 2020). Preterm delivery should be avoided as much as feasible by providing good obstetric care and using tocolytic agents and antenatal steroids for fetal lung maturity.

Low birth weight is associated with both reduced respiratory function in SGA newborns and surfactant insufficiency in preterm neonates. It has been explained that low nutritional input during gestation causes intrauterine growth restriction in SGA neonates, which in turn causes structural and functional lung problems, including deficient surfactant generation. (Liman et al., 2024). Additionally, low birth weight raises the chance of being exposed to several stressors, including cold stress, hypoglycemia and sepsis, which could make RDS worse. (Wondie et al., 2023).

In instances of Transient Tachypnea of the Newborn (TTN), a considerable proportion of affected neonates were classified as Appropriate for Gestational Age (AGA). Specifically, 34 out of 60 cases (56.7%) were identified as AGA. This observation aligns with the findings of (Atrushi & Qaqos, 2022)), who reported that 65 out of 100 neonates (65%) diagnosed with TTN met the criteria for AGA, further reinforcing the consistency of this association across different studies.

About birth weight, it has been observed that only 18 cases of Meconium Aspiration Syndrome (MAS) have been reported, all of which were classified as Appropriate for Gestational Age (AGA). This finding aligns with the results of a study conducted by (Awgchew & Ezo, 2022) In Ethiopia, which indicated that 56 neonates (67.5%) were classified as Appropriate for Gestational Age.

In this study, about (77.1%) of neonates in RDS were preterm. And (70%) of neonates were preterm in TTN which is in disagreement with (Lokhande et al., 2015) Most of their cases were full-term neonates in TTN. In meconium aspiration syndrome 18 (100%) of participants were term neonates and this is consistent with (Mamo et al., 2023) That gestational age most of the participants 199 (78%) were between 37-42 weeks and the remaining 22% were post-term. It has been noticed in this study that 70% of newborns with TTN were preterm and only 30% were term. There was a

significant association between gestational age and causes of RD (RDS, TTN and MAS).

The current study demonstrated that the APGAR scores at the 1st minute for almost half of the participants were moderately depressed, with 106 (48.6%) newborns falling into this category. However, by the 5th minute, the number of moderately distressed APGAR scores decreased to 46 (21.1%), and the number of normal APGAR scores at the 5th minute increased to 170 (78%). A study Showed that a low APGAR score at 1st minute was associated with an increased risk of respiratory distress (Chandrasekhar et al., 2016) Showed that a low APGAR score at 1st minute was associated with an increased risk of respiratory distress. This improvement is attributed to the initiation of resuscitation measures at the time of delivery. The prompt intervention helped stabilize the newborns' conditions, leading to better overall outcomes as reflected in the APGAR scores.

There was a significant relationship between the number of babies at the delivery time with each cause of neonatal respiratory distress (P=0.027). In addition, a similar finding was seen in a study conducted in Misan in 2019 with the rate of 238 were singleton and 64 participants were multiple in RDS (Musa Aljawadi & Al-Muhsen Ali, 2019). There is a significant chance of maternal problems during pregnancy and postnatal problems for newborns with multifetal gestation, particularly when born too soon. Compared to the 10% chance of preterm labor in single infants, the risk of preterm delivery for triplet pregnancies is over 90%, while it is over 50% in twin pregnancies (Abdel Baseer et al., 2020).

In our study, it was observed that 172 (78.9%) participants required continuous positive airway pressure (CPAP) therapy, whereas 46 (21.1%) participants required only oxygen supplementation. These findings align with those of a study conducted in 2016 (Sauparna et al., 2016) In which 47 (23.5%) participants necessitated CPAP while 153 (76.5%) participants needed only oxygen supplementation. However, another study showed that 41% of neonates required Oxygen inhalation by nasal cannula and 21% by CPAP (Yeasmin et al., 2023). This consistency underscores the prevalence of CPAP therapy and oxygen supplementation as critical interventions in neonatal care.

CONCLUSIONS:

This study identifies respiratory distress syndrome as the primary cause of neonatal intensive care unit admissions, followed by transient tachypnea of the newborn and meconium aspiration syndrome. Newborns with low gestational age and prematurity are at higher risk, emphasizing the need for improved prenatal care, early detection of complications, and strategies to prevent preterm births. Strengthening these interventions can enhance neonatal health outcomes and reduce the burden of respiratory distress in newborns.

LIMITATIONS OF THE STUDY:

This study faces several limitations, including a small sample size, which affects the generalizability of the findings. Conducted in a single city, its applicability to other hospitals or regions with different healthcare access and demographics is uncertain. Additionally, missing or incomplete data led to the exclusion of certain samples, while the reluctance of families to participate further reduced the sample size.

RECOMMENDATIONS:

Respiratory distress (RD) can be reduced through antenatal care, maternal health management, and antenatal steroids to improve fetal lung maturity. Family planning and public health campaigns further promote prenatal care awareness and highlight risks associated with preterm births and elective cesarean sections. Addressing neonatal factors like prematurity, delivery methods, and male susceptibility enhances monitoring and improves outcomes.

ACKNOWLEDGEMENT:

we extend our sincere gratitude to the Maternity Teaching Hospital and Dr Jamal Ahmad Rashid Pediatric Hospital for their invaluable support and assistance through this study.

REFERENCES:

Abdel Baseer, K. A., Mohamed, M., & Abd-Elmawgood, E. A. (2020). Risk factors of respiratory diseases among neonates in neonatal intensive care unit of Qena University Hospital, Egypt. *Annals of Global Health*, 86(1), 1–9. https://doi.org/10.5334/aogh.2739.

Atrushi, A. M., & Qaqos, N. N. (2022). Risk Factors for Transient Tachypnea of the Newborn in Full Term Neonates. *The Iraqi Postgraduate Medical Journal*, 21(3), 300–305.

Awgchew, S., & Ezo, E. (2022). Determinants of meconium aspiration syndrome among neonates admitted to neonatal intensive care unit at Nigist Eleni Mohammed Memorial Comprehensive Specialized Hospital, South Ethiopia: Unmatched case–control study. *SAGE Open Medicine*, 10. https://doi.org/10.1177/20503121221124693.

B.P., D. H., T.S., D. A. K., Kumar, D. G. V., & Khan, D. I. (2020). An etiological study of respiratory distress in neonates in a tertiary care medical college hospital. Pediatric Review: *International Journal of Pediatric Research*, 7(1), 22–26. https://doi.org/10.17511/ijpr.2020.i01.04.

Bahwal, J. and B. (2020). Respiratory Distress and Its Outcome among Neonates Admitted to Neonatal Intensive Care Unit of Mukalla Maternity and Child Hospital, Yemen. *Diyala Journal of Medicine*, 18(2), 141–154. https://doi.org/10.26505/djm.18014940915.

Chandrasekhar, R., Mohan, M., & Lakshmi, B. (2016). Clinical study of respiratory distress in newborn. *International Journal of Contemporary Pediatrics*, 3(3), 910–915. https://doi.org/10.18203/2349-3291.ijcp20162364.

Kommawar, A., Borkar, R., Vagha, J., Lakhkar, B., Meshram, R., & Taksandae, A. (2017). Study of respiratory distress in newborn. *International Journal of Contemporary Pediatrics*, 4(2), 490. https://doi.org/10.18203/2349-3291.ijcp20170695.

Liman, C. N., Retno Putri, A., Arumndari, R., Suryawan, I. W. B., & Suryaningsih, P. S. (2024). Factors affecting neonatal respiratory distress syndrome at Wangaya General Hospital. *Intisari Sains Medis*, 15(2), 595–599. https://doi.org/10.15562/ism.v15i2.2027.

Lokhande, R., Gedam, B., Shah, Y., Tandon, M., & Bansod, P. Y. (2015). Neonatal respiratory distress in early neonatal period and its outcome. *International Journal of Biomedical and Advance Research IJBAR International Journal of Biomedical and Advance Research Journal*, 6(605), 427–430. https://doi.org/10.7439/ijbar.

Mamo, S. A., Mezgebu, T., Eneyew, T., Ezo, E., & Demisse, Z. (2023). Prevalence and risk factors Associated with Meconium Aspiration Syndrome among neonates admitted to Neonatal Intensive Care Unit in Southern Ethiopia. *Journal of Pediatrics and Neonatology*, 4, 33–38.

Musa Aljawadi, H. F., & Al-Muhsen Ali, E. A. (2019). Neonatal respiratory distress in Misan: Causes, risk factors, and outcomes. *Iranian Journal of Neonatology*, 10(4), 53–60. https://doi.org/10.22038/ijn.2019.39348.1626.

Rijal, P., & Shrestha, M. (2018). Scenario of Neonatal Respiratory Distress in Tertiary Hospital. *Journal of Nepal Health Research Council*, 16(2), 131–135. http://www.ncbi.nlm.nih.gov/pubmed/29983424.

Sauparna, C., Nagaraj, N., Berwal, P. K., Inani, H., & Kanungo, M. (2016). A clinical study of prevalence, spectrum of respiratory distress and immediate outcome in neonates. *IP Indian Journal of Immunology and Respiratory Medicine*, 1(4), 80–83. https://www.academia.edu/download/52187301/IJIRM_14_80-83.pdf.

Thanh, N., Van, P., Thi, N., & Tien, N. (2020). Parto prematuro y bajo peso al nacer en recién nacidos con insuficiencia respiratoria posnatal en un hospital terciario de Viet Nam. *Biomedical Research and*

Therapy, 7(9), 4010–4015. http://bmrat.org/index.php/BMRAT/article/view/633.

Wondie, W. T., Legesse, B. T., Mekonnen, G. B., Degaga, G. T., Zemariam, A. B., Gedefaw, G. D., Abebe, D. E., Kassie, Y. T., Gonete, A. T., Belay, A. E., & Wubneh, C. A. (2023). Incidence and predictors of respiratory distress syndrome among low birth weight neonates in the first seven days in Northwest Ethiopia Comprehensive Specialized Hospitals, 2023: A retrospective follow-up study. *BMJ Open*, 13(11), 1–11. https://doi.org/10.1136/bmjopen-2023-079063.

Yeasmin, N., Khanam, W., Parvin, R., Adnan, M. A., Hossain, I., Mondal, T. I., & Islam, R. (2023). Risk factors , causes and hospital outcome of respiratory distress among neonates admitted in neonatal intensive care unit of a tertiary hospital. 10(5), 627–632.

TABLES:

Table (1): The socio-demographic characteristics of the neonates

Socio-demographic characteristics		Fr.	%
Gender	Male	126	57.8
	Female	92	42.2
Birth weight	Macrosomia (> 4kg)	4	1.8
	Normal birth weight (2.5kg-4kg)	98	45.0
	Low birth weight (< 2.5 kg)	54	24.8
	Very low birth weight (< 1.5 kg)	42	19.3
	Extremely low birth weight (<1 kg)	20	9.2
Gestational age	Pre-term (< 37 weeks)	150	68.8
	Term (37 -41 weeks)	68	31.2
	Post-term (> 42 weeks)	0	0.0
Plurality	Singleton	186	85.3
	Twin	26	11.9
	Triple	6	2.8
Total		**218**	**100**

Table (2): Distribution of the neonatal risk factors

Neonatal Risk factors		Fr.	%
Onset of respiratory distress	Since birth	194	89.0
	At first day	20	9.2
	After the first day	4	1.8
APGAR score at minute 1	Severely depressed (0-3)	28	12.8
	Moderately depressed (4-6)	106	48.6
	Normal (7-10)	84	38.5
APGAR score at minute 5	Severely depressed (0-3)	2	.9
	Moderately depressed (4-6)	46	21.1
	Normal (7-10)	170	78.0
Jaundice	Yes	92	42.2
	No	126	57.8
Therapy	Oxygen supplementation	46	21.1
	CPAP	172	78.9
Causes of respiratory distress in neonate	Respiratory distress syndrome	140	64.2
	Transient tachypnea of the newborn	60	27.5

	Meconium aspiration syndrome	18	8.3
	Pneumonia	0	0.0
	Congenital diaphragmatic hernia	0	0.0
	Aspiration of milk	0	0.0
Total		**218**	**100**

Table (3): The association between the causes of Respiratory Distress and socio-demographic characteristics of neonates

Socio-demographic characteristics		RDS		TTN		MAS		p-value
		Fr.	%	Fr.	%	Fr.	%	
Gender	Male	70	50.0	44	73.3	12	66.7	0.007
	Female	70	50.0	16	26.7	6	33.3	
Birth weight	Macrosomia	2	1.4	2	3.3	0	0.0	0.000
	Normal birth weight	46	32.9	34	56.7	18	100.0	
	Low birth weight	40	28.6	14	23.3	0	0.0	
	Very low birth weight	38	27.1	4	6.7	0	0.0	
	Extremely low birth weight	14	10.0	6	10.0	0	0.0	
Gestational age	Pre-term (< 37 weeks)	108	77.1	42	70.0	0	0.0	0.000
	Term (37 -41 weeks)	32	22.9	18	30.0	18	100.0	
Plurality	Singleton	112	80.0	56	93.3	18	100.0	0.027
	Twin	24	17.1	2	3.3	0	0.0	
	Triple	4	2.9	2	3.3	0	0.0	
Total								

Note// (RDS) : Respiratory Distress Syndrome , (TTN) : Transient Tachypnea of Newborn (MAS): Meconium Aspiration Syndrome

Table (4): The association between the causes of Respiratory Distress and neonatal risk factors

Neonatal Risk factors		RDS		TTN		MAS		p-value
		Fr.	%	Fr.	%	Fr.	%	
Onset of respiratory distress	Since birth	128	91.4	48	80.0	18	100.0	0.091
	At first day	10	7.1	10	16.7	0	0.0	
	After the first day	2	1.4	2	3.3	0	0.0	
APGAR score at minute 1	Severely depressed (0-3)	22	15.7	6	10.0	0	0.0	0.001
	Moderately depressed (4-6)	78	55.7	20	33.3	8	44.4	
	Normal (7-10)	40	28.6	34	56.7	10	55.6	
APGAR score at minute 5	Severely depressed (0-3)	2	1.4	0	0.0	0	0.0	0.021
	Moderately depressed (4-6)	38	27.1	8	13.3	0	0.0	
	Normal (7-10)	100	71.4	52	86.7	18	100.0	
Jaundice	Yes	64	45.7	20	33.3	8	44.4	0.262
	No	76	54.3	40	66.7	10	55.6	
Therapy	Oxygen supplementation	28	20.0	14	23.3	4	22.2	0.863
	CPAP	112	80.0	46	76.7	14	77.8	
Total								

Note// (RDS) : Respiratory distress syndrome , (TTN) : Transient tachypnea of newborn (MAS): Meconium Aspiration Syndrome