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EVALUATION OF A PRACTICE GUIDELINE (OXYGEN THERAPY) FOR THE MANAGEMENT OF RESPIRATORY DISTRESS SYNDROME IN NICU.

Dr. Purnima Margekar[1*], Dr. Rolly Jain[2], Dr. Sagar Kumar[3]

[1*]Assistant Professor, Department of Pediatrics, Pt. JNM Medical College & B.R.A.M. Hospital, Raipur (C.G.), Email - dr_purnima2010@yahoo.com
[2]Assistant Professor, Department of Pediatrics, Pt. JNM Medical College & B.R.A.M. Hospital, Raipur (C.G.), Email id - rolly.agarwal@yahoo.com
[3]PG Resident, Department of Pediatrics, Pt. JNM Medical College & B.R.A.M. Hospital, Raipur (C.G.), Email - sagarkbaghel@gmail.com

[*]**Corresponding authors:** Dr. Purnima Margekar
[*]Assistant Professor, Department of Pediatrics, Pt. JNM Medical College & B.R.A.M. Hospital, Raipur (C.G.), Email - dr_purnima2010@yahoo.com

Abstract-

Background- Respiratory Distress is one of the commonest causes of NICU admissions. Respiratory distress is among the most common symptom complexes seen in newborn infants and accounts for half of all the neonatal deaths. Worldwide, among the Total newborns, about 3% have had some sort of respiratory distress and which is manifested by a variety of respiratory and non-respiratory disorders.

Aims- Evaluation of a practice guideline for the management of respiratory distress syndrome.

Methods and materials- This is a prospective study done in NICU, Department of Pediatrics, Dr. B.R.A.M hospital, Raipur from Feb 2023 to Feb 2024 in 182 patients. Both in-born and out-born neonate admitted in NICU with respiratory distress within 72 hrs of birth. Neonates with all the information (neonate & maternal information) contained in proforma will be included. Newborn babies admitted in NICU Of Dr B.R.A.M. Hospital, Raipur with Respiratory Distress, during a period of 12 months, will be assessed using standard scores such as Downes score for term neonates and Silverman Anderson score in preterm neonates and appropriate treatment according to the scoring will be provided to the concerned neonates.

Results- In present study among neonates with respiratory distress majority 57.14% were male and 42.86% were females. Mean gestational age was 34.71±3.72 weeks. Mean birth weight was 1925.91±649.82 gms. Comorbid illness among mothers of study subjects showed that 19.23% had anemia, 8.24% had GDM, 4.40% had hypothyroidism.

The Silverman Anderson Score among preterm showed that majority 13.26% had SAS-7, followed by 8.29% each had SAS-5 and SAS-6. DOWNE Score among preterm showed that majority 13.74% had score-4, followed by 11.54% had score-3. Blood culture sensitivity showed that growth was seen in only 14% cases.

The diagnosis showed that majority 43.96% had RDS found in both term and preterm, 29% had birth asphyxia, 8.24% had MAS, 7.14% had sepsis, 9.89% had TTN and 2.2% had pneumonia. The mode of oxygen showed that 56.59% were given CPAP, 20.33% were given by Nasal prongs and 23.08% were kept on ventilator. Majority 84.62% were discharged after treatment and 15.38% were died. In

Term neonates, maximum deaths occur due to Sepsis (14%) and in preterm neonates, maximum deaths occur due to RDS (69%).
Conclusion- on blood culture 4.5% had Klebsiella pneumonia growth on discharged patients and 7.1% had MRSA growth which is maximum among deaths. 11.7% cases of TTN, 31.81% Birth asphyxia, 8.4% MAS, 5.8% of sepsis, 2.4% cases of sepsis and pneumonia and 39.6% cases of RDS were discharged. The main cause for mortality is RDS 67.9%, Sepsis 14.3%, Birth asphyxia 10.71% and MAS 7.1%. Fetal risk factors were low birth weight and preterm period of gestation. For treatment most commonly mode of oxygen given via CPAP 65.6%, nasal prongs 24% and 10.4% via mechanical ventilation. Similarly, among 28 deaths 7.1% cases were given oxygen by CPAP, whereas 26(92.9%) were mechanically ventilated. In Term neonates, maximum deaths occur due to Sepsis and in preterm due to RDS. Early detection and appropriate management of the condition is essential to ensure better outcome in all newborns presenting with respiratory distress.

Keywords- respiratory distress, early diagnosis, NICU, blood culture.

Introduction- Respiratory Distress is one of the commonest causes of NICU admissions. Certain risk factors increase the likelihood of neonatal respiratory disease. First breath is the most vital parameter in the beginning of a new life. Respiratory distress is among the most common symptom complexes seen in newborn infants and accounts for half of all the neonatal deaths.[1] Worldwide, among the Total newborns, about 3% have had some sort of respiratory distress and which is manifested by a variety of respiratory and non-respiratory disorders. [2] In developed countries, improved diagnosis and treatment due to technical advancements and increased pediatric and neonatal specializations have led to an impressive fall in neonatal mortality.
These factors include prematurity, meconium-stained amniotic fluid (MSAF), caesarean section delivery, gestational diabetes, maternal chorioamnionitis, or prenatal ultrasonographic findings, such as oligohydramnios or structural lung abnormalities. Regardless of the cause, if not recognized and managed quickly, respiratory distress can escalate to respiratory failure and cardiopulmonary arrest.
Clinical presentation of respiratory distress in newborn includes one or more of the following features respiratory rates of ≥60/ min, apnea, retractions (sub costal, inter costal, xiphoid, suprasternal), grunting, nasal flaring, cyanosis. It occurs in 5-10% of live births and is responsible for about 20% of neonatal mortality. [3,4]
A variety of disorders of respiratory system like Transient tachypnea of the newborn, Hyaline membrane disease, Meconium aspiration syndrome, Pneumonia, Septicemia, Persistent pulmonary hypertension and non-respiratory disorders like Cardiac, Neurological, Infectious, Metabolic disorders and Congenital anomalies can cause respiratory distress. [5,6] Commonest cause of respiratory distress in term babies is Transient tachypnea of new born whereas in preterm babies it is Hyaline membrane disease. [7,8] Continued efforts in prevention of Premature birth, early recognition of fetal distress, identification of maternal risk factors and diagnosis of diseases in utero will further improve neonatal outcome. [9] Early recognition and appropriate therapy of neonatal respiratory disease has impressive results. Though treatment is disease specific, common modalities of treatment include Resuscitation, Oxygenation, Surfactant replacement, Ventilation. Introduction of Continuous Positive Air Way Pressure and Ventilators have revolutionized the outcome of respiratory failure in neonates [10]

Aims- Evaluation of a practice guideline for the management of respiratory distress syndrome. Also to study the need of appropriate intervention required for the management of respiratory distress.

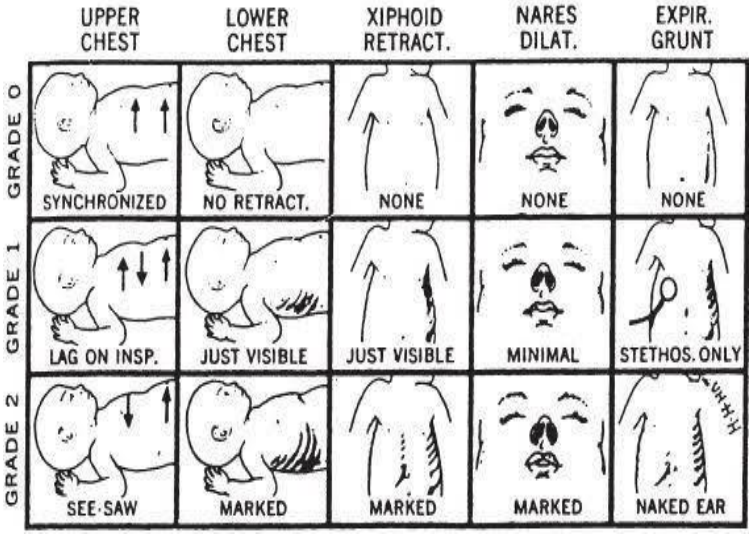
Materials and methods-
This is a prospective study done in NICU, Department of Pediatrics, Dr. B.R.A.M hospital, Raipur from Feb 2023 to Feb 2024 in 182 patients. Both in-born and out-born neonate admitted in NICU with respiratory distress within 72 hrs of birth and Neonates with all the information (neonate & maternal information) contained in proforma will be included. Age at admission >7 days are excluded.

Methodology- Newborn babies, will be assessed using standard scores such as Downes score for term neonates and Silverman Anderson score in preterm neonates and appropriate treatment according to the scoring will be provided to the concerned neonates. These admissions will consist of neonates delivered in our hospital (in-born) as well as those neonates who were referred from other hospitals and other delivery centers (out-borns). Severity of respiratory distress is assessed by downe's score (term neonates) and Silverm Ananderson score (preterm neonates).

DOWNE'S SCORE:

SCORE	0	1	2
Respiratory rate	<60	60-80	>80/apneic episode
Cyanosis	None	In room air	In 40% oxygen
Retractions	None	Mild	Moderate to severe
Grunting	None	Audible with Stethoscope	Audible without Stethoscope
Air entry	Clear	Decreased	Barely audible

SILVERMAN ANDERSON SCORE:



A proforma is designed for the purpose of this study. Following information taken: name, age at admission, sex, date of admission and date of discharge or death. Neonatal data includes: body weight, gestational age according to the date of last menstrual period of the mother antenatal ultrasound or New Ballards score. Factors related to labor and delivery assessed includes: Mode of delivery (vaginal or LSCS or assisted), place of delivery (Inborn or Outborn), complications (prolonged rupture of membranes >18 hr, prolonged labor>18hrs, meconium staining of liquor, antepartum hemorrhage and others)

Maternal information recorded includes: age (high risk group≤18 yr or ≥35 yr and low risk group 19-34 yr), parity (which is divided into risk group=P0 or >P4 and

normal group = P1-4), any medical disease complicating pregnancy. This information is reviewed and the final diagnosis of clinical conditions producing respiratory distress is based mainly on careful scrutiny of the history, clinical and radiological findings. Chest X ray is done in all cases. Complete

blood counts, CRP, Blood-Culture and Sensitivity and Echo in relevant cases.

Observations and results-

This is a prospective study done in NICU, Department of Pediatrics, Dr. B.R.A.M hospital, Raipur from Feb 2023 to Feb 2024 in 182 patients. Out of the Total 182 cases admitted, 154 were discharged in which 66(42.9%) were females and 88(57.10%) were males whereas 28 were died in which 12(43%) were females and 16(57%) were males.

Table 1: Gestational age and outcome among study subjects

Gestational age	OUTCOME		Total	P value
	Death	Discharge		
22-26 week	4	0	4	P<0.01
	14.3%	0.0%	2.2%	
27-32 week	10	36	46	
	35.7%	23.4%	25.3%	
33-37 week	11	78	89	
	39.3%	50.6%	48.9%	
38-41 week	3	40	43	
	10.7%	26.0%	23.6%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

154 were discharged in which most common gestational age was between 33-37 weeks (50.6%) and least common was between 22-26weeks 0(0%). Among 28 deaths, most common gestational age was between 33-37 weeks 11(39.3%) whereas least common was between 38-41 weeks 3(10.7%).

Table 2: Birth weight and outcome among study subjects

Birth weight	OUTCOME		Total	P value
	Death	Discharge		
ELBW (<1000gm)	10	1	11	p<0.01
	35.7%	.6%	6.0%	
VLBW (1000-1499 gm)	6	23	29	
	21.4%	14.9%	15.9%	
LBW (1500-2499 gm)	7	88	95	
	25.0%	57.1%	52.2%	
Normal (>2500gm)	5	42	47	
	17.9%	27.3%	25.8%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

In discharged group, most common weight group is LBW (1500-2499 gms) which is 88 (57.1%) and least common is ELBW(<1000gms) which is 1(6%). Among 28 deaths, most common weight group is ELBW 10(35.7%) whereas least common is Normal weight (>2500gms).

154 were discharged in which 91(39%) patients did not require resuscitation whereas 63(40.9%) patients required resuscitation. Among 28 deaths, 11(28.6%) patients did not require resuscitation whereas 17(60.7%) patients required resuscitation.

Table 3: Maternal age and outcome among study subjects

Maternal age	OUTCOME		Total	P value
	Death	Discharge		
16-18 years	0	3	3	0.684
	0.0%	1.9%	1.6%	
18-24 years	13	67	80	
	46.4%	43.5%	44.0%	
25-30 years	12	74	86	
	42.9%	48.1%	47.3%	
31-35 years	3	8	11	
	10.7%	5.2%	6.0%	
>35 years	0	2	2	
	0.0%	1.3%	1.1%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Out of the Total discharged in which most common maternal age group is between 25-30 years i.e.74 (48.1%) and least common is between >35 years i.e.2(1.3%), most common Parity is Parity-2 i.e. 73(47.4%) and least common is both parity-5 and 6 i.e. 1(6%), 115(74.7%) did not have meconium-stained amniotic fluid and 39(25.30%) had meconium-stained amniotic fluid, 123(79.9%) did not have Prolonged rupture of membranes (PROM) and 31(20.10%) had PROM and 122(79.2%) did not have Prolonged labor and 32 (20.80%) had Prolonged labor .

Among 28 deaths, most common maternal age is between 18-24 years i.e. 13(46.4%) whereas least common is between 16-24 years i.e.0(0%), most common Parity is Parity-2 i.e. 17(60.7%) whereas least common Parity is parity-5 and 6 i.e. 0(0%), 20(71.4%) did not have meconium-stained amniotic fluid and 8(28.60%) had meconium-stained amniotic fluid, 20(71.4%) did not have Prolonged rupture of membranes (PROM) and 8 (28.6%) had PROM and 23(82.10%) did not have Prolonged labor and 05 (17.90%) had Prolonged labor.

Table 4: Type of delivery and outcome among study subjects

Type of delivery	OUTCOME		Total	P value
	Death	Discharge		
LSCS	14	58	72	0.219
	50.0%	37.7%	39.6%	
NVD	14	96	110	
	50.0%	62.3%	60.4%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Out of the Total 182 cases admitted, 154 were discharged in which 96(62.3%) delivered by NVD whereas 58(37.7%) were delivered by LSCS. Among 28 deaths, in which 14 (50%) delivered by NVD whereas 14(50%) were delivered by LSCS.

Table 5: Co-morbid illness and outcome among study subjects

Co-morbid illness	OUTCOME		Total	P value
	Death	Discharge		
Anemia	8	27	35	0.029
	28.6%	17.5%	19.2%	
APH	0	1	1	
	0.0%	.6%	.5%	
Eclampsia	1	4	5	
	3.6%	2.6%	2.7%	
GDM	0	15	15	
	0.0%	9.7%	8.2%	
GHTN	0	4	4	
	0.0%	2.6%	2.2%	
Hypothyroidism	2	6	8	
	7.1%	3.9%	4.4%	
No	14	91	105	
	50.0%	59.1%	57.7%	
Pre-eclampsia	1	6	7	
	3.6%	3.9%	3.8%	
Sickle cell anemia	2	0	2	
	7.1%	0.0%	1.1%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Out of the Total 182 cases admitted, 154 were discharged in which 91(59.1%) mothers had no co-morbid illness whereas 27(17.5%) had anemia which is most common. Among 28 deaths, in which 14(50%) had no co-morbid illness whereas 8(28,6%) had anemia 8(28.6%).
Out of the Total 182 cases admitted, 154 were discharged in which 100(64.9%) were Inborn whereas 54(35.1%) were out born. Among 28 deaths, in which 21 (75%) were Inborn whereas 7(25%) Were out born.

Table 6: SAS score and Outcome among study subjects

SAS score	OUTCOME		Total	P value
	Death	Discharge		
2	0	1	1	P<0.01
	0.0%	.6%	.5%	
3	0	10	10	
	0.0%	6.5%	5.5%	
4	0	18	18	
	0.0%	11.7%	9.9%	
5	0	15	15	
	0.0%	9.7%	8.2%	
6	4	11	15	
	14.3%	7.1%	8.2%	
7	13	11	24	
	46.4%	7.1%	13.2%	
8	4	1	5	
	14.3%	.6%	2.7%	
NA	7	87	94	
	25.0%	55.8%	48.4%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Total 182 cases admitted,154 were discharged, among them 52 (28.57%) were pre-terms in which most common SAS score is SAS-4 is 18(11.7%) and least common SAS score is SAS-2 is 1(6%). Among 28 deaths, most common SAS score is SAS-7 i.e. 13(46.4%) whereas least common SAS score is SAS-6,8 which is 4(14.3%).

Out of the Total 182 cases admitted, among 154 discharges,87 (47.8%) were terms in which most common Downe's score is Downe's -4 is 25(16.2%) and least common is Downe's score is Downe's-1 which is 1(6%). Among 28 deaths,7(25%) most common Downe's score is Downe's-7 is 3(10.7%) and least common is Downe's score is Downe's-6,9 which is 1(3.6%).

Out of the Total 182 cases admitted, 154 were discharged in which 81(52.6%) had abnormal chest x-ray, whereas 73(47.4%) had normal chest x-ray. Among 28 deaths, in which 21 (75%) had abnormal chest x-ray, whereas 7(25%) had normal chest x-ray.

Table 7: Blood culture sensitivity and Outcome among study subjects

Blood culture sensitivity	OUTCOME		Total	P value
	Death	Discharge		
Acinetobacter baumanii	0	2	2	0.578
	0.0%	1.3%	1.1%	
CONS	0	3	3	
	0.0%	1.9%	1.6%	
Enterobacter spp.	0	2	2	
	0.0%	1.3%	1.1%	
Klebsiella pneumonia	1	7	8	
	3.6%	4.5%	4.4%	
MRSA	2	2	4	
	7.1%	1.3%	2.2%	
No growth	24	133	157	
	85.7%	86.36%	86.26%	
S. pneumonia	0	1	1	
	0.0%	.6%	.5%	
Staph epidermidis	0	1	1	
	0.0%	.6%	.5%	
Staph haemolyticus	1	3	4	
	3.6%	1.9%	2.2%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Out of the Total 182 cases admitted, blood culture sent for all, 154 were discharged in which 133(86.36%) had No growth whereas 7(4.5%) had Klebsiella pneumonia growth. Among 28 deaths, in which 24 (85.7%) had No growth whereas 2(7.1%) had MRSA growth which is maximum among deaths.

Out of the Total 182 cases admitted, 154 were discharged in which 128(83%) had Negative CRP whereas 26(16.9%) had positive CRP. Among 28 deaths, in which 22 (78.6%) had Negative CRP whereas 6(21.4%) positive CRP.

Table 8: Diagnosis and Outcome among study subjects

Diagnosis	OUTCOME		Total	P value
	Death	Discharge		
Birth asphyxia	3	49	52	
	10.71%	31.81%	28.57%	
MAS	2	13	15	
	7.1%	8.4%	8.2%	
pneumonia	0	4	4	
	0.0%	2.6%	2.2%	

RDS	19	61	80	0.01
	67.9%	39.6%	44.0%	
Sepsis	4	9	13	
	14.3%	5.8%	7.1%	
TTN	0	18	18	
	0.0%	11.7%	9.9%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Out of the Total 182 cases admitted, 154 were discharged. All the 18(11.7%) cases of TTN were discharged, 49(31.81%) out of 52 Birth asphyxia cases, 13(8.4%) out of 15 MAS cases, 61(39.6%) out of 80 cases of RDS were discharged,9(5.8%) out of 13 cases of sepsis, 4(2.6%) out of 4 cases of pneumonia were discharged. Out of Total 182 cases included in the study, 28 died with a mortality rate of 15.38%. RDS was the main cause for mortality contributing to 19(67.9%) deaths. Sepsis was the second common cause for mortality found in 14.3%. Birth asphyxia accounted for 10.71%. MAS was the cause of death in 2(7.1%).

Table 9: Mode of Oxygen and Outcome among study subjects

Mode of Oxygen	OUTCOME		Total	P value
	Death	Discharge		
CPAP	2	101	103	p<0.01
	7.1%	65.6%	56.6%	
Nasal prongs	0	37	37	
	0.0%	24.0%	20.3%	
Ventilator	26	16	42	
	92.9%	10.4%	23.1%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Among discharges ,101(65.6%) cases were given oxygen by CPAP, 37(24%) were given oxygen by nasal prongs whereas 16(10.4%) were mechanically ventilated. Among 28 deaths ,2(7.1%) cases were given oxygen by CPAP, whereas 26(92.9%) were mechanically ventilated.

Table 10: Hospital stay days and Outcome among study subjects

Stay in days	OUTCOME		Total	P value
	Death	Discharge		
7-11 days	3	39	42	0.061
	10.7%	25.3%	23.1%	
12-16 days	3	30	33	
	10.7%	19.5%	18.1%	
17-21 days	1	12	13	
	3.6%	7.8%	7.1%	
2-6 days	21	62	83	
	75.0%	40.3%	45.6%	
21-25 days	0	4	4	
	0.0%	2.6%	2.2%	
26-30 days	0	2	2	
	0.0%	1.3%	1.1%	
>30 days	0	5	5	
	0.0%	3.2%	2.7%	
Total	28	154	182	
	100.0%	100.0%	100.0%	

Most common duration of stay was between 2-6 days which were found in 62(40.3%) subjects. Least common duration of stay was between 26-30 days which were found in 2(1.3%) subjects. Among 28 deaths, most common duration of stay was between 2-6 days which were found in 21(75%) subjects. Least common duration of stay was between 17- 21 days which were present in 1(3.6%) subject.

Discussion-

This is a prospective study done in NICU, Department of Pediatrics, Dr. B.R.A.M hospital, Raipur from Feb 2023 to Feb 2024 in 182 patients. In present study chest Xray was abnormal in 56.04% cases. Todkar M et al (2022) study the clinical profile of respiratory distress in neonates admitted in NICU in a tertiary care hospital. They reported that most significant X- ray finding was of hyaline membrane disease (n=52, 27.36%), followed by infiltration and consolidation (n=31,16.31%). Normal X-ray was found in 61 neonates with respiratory distress (32.10%). [21]

In present study Blood culture sensitivity among study subjects showed that growth was seen in only 14% cases, of that 4% had Klebsiella, 2% each had Staph haemolyticus, CONS and MRSA, 1% each had Acinetobacter baumanii, Enterobacter spp., S. pneumoniae and Staph epidermidis.

Mehta A et al (2017) study the causes of respiratory distress in neonates presenting within 72 hours. They reported that commonest organism was Klebsiela (n=11, 29.73%) followed by Staph. aureus (n=9, 24.32%) and other organisms i.e. E. coli, Pseudomonas and Coagulase negative Staph were equally distributed. [13]

In Present study, CRP of 18.58% came out to be positive whereas 81.32% came out to be negative.

STUDY OF ETIOLOGY OF RESPIRATORY DISTRESS

Study	RDS %	TTN %	BIRTH ASPHYXIA %	SEPSIS %	PNEUMONIA %	MAS %
Gaurav et[18] al 2023	20	22	12	14	4.7	16
Sonawane R[22] et al 2018	6.4	60.25	1.4	1.3	2.2	29.48
Sahoo[23] R et al 2015	32.22	35.55	6.8	10.75	12.22	20
Present study	44	9.89	29	7.14	2.2	8.24

In present study the diagnosis among study subjects showed that majority 43.96% had RDS, 29% had birth asphyxia, 8.24% had MAS, 7.14% had sepsis, 9.89% had TTN and 2.2% had pneumonia.

Harshini BP et al (2020) did an etiological study of respiratory distress in neonates in a tertiary care medical college hospital. The commonest cause of neonatal respiratory distress in the present study was respiratory distress syndrome (34%), followed by Transient tachypnoea of the newborn (30%), and Meconium aspiration syndrome (22.66%). [20]

Todkar M et al (2022) study the clinical profile of respiratory distress in neonates admitted in NICU in a tertiary care hospital. They reported that 27.36% had RDS, 19.47% had TTN, 18.42% had pneumonia, 17.36% had birth asphyxia, 7.36% had MAS, 2.10% each had congenital heart disease and Tracheo-oesophageal fistula. [21]

Gaurav et al (2023) study the epidemiology of neonatal respiratory distress in a tertiary care neonatal Centre Kashmir India. They reported the common causes for respiratory distress in neonate were transient tachypnea of newborn (TTN) (22.0%), respiratory distress syndrome (RDS) (20%), meconium aspiration syndrome (MAS) (16.90%), sepsis (14%) and perinatal asphyxia (12%).[16]

In present study the mode of oxygen among study subjects showed that 56.59% were given CPAP, 20.33% were given by Nasal prongs and 23.08% were kept on ventilator.

Sauparna C et al (2016) did a clinical study of prevalence, spectrum of respiratory distress and immediate outcome in neonates. They reported that ventilator support was needed in 31% of cases 23.5% of cases needed nasal CPAP, while 9% of cases needed surfactant therapy. [12]

Todkar M et al (2022) study the clinical profile of respiratory distress in neonates admitted in NICU in a tertiary care hospital. They reported that 40% were given o2 by CPAP, 22% were given through ventilator, 35% were given by prongs and 10% were given surfactant. [21]
P. Chandini et al (2020) study the clinic-etiological profile and outcome of neonatal respiratory distress in tertiary care hospital, Guntur. The study showed that babies (15.5%) were treated with CPAP and babies (20%) were with mechanical ventilation. [`18]

MODE OF OXYGENATION COMPARISON

STUDY	CPAP	MV
Todkar M[21] et al (2022)	40%	22%
Sauparna C[12] et al 2016	23.5%	31%
P. Chandini[18] et al (2020)	15.5%	20%
Present study	56.59%	23.08%

In present study majority 84.62% were discharge after treatment and 15.38% were died.

OUTCOME DISTRIBUTION COMPARISON

STUDY	DISCHARGES %	DEATHS%
Sonawane R[22] et al 2018	94.88	5.12
Sahoo R[23] et al 2015	88.88	11.12
Present study	84.61	15.39

Barkiya SM et al (2016) study the clinico-etiological profile and outcome of neonatal respiratory distress. They reported that 98% were survived and 2% died. [11]
Sauparna C et al (2016) did a clinical study of prevalence, spectrum of respiratory distress and immediate outcome in neonates. In the overall study 118 (59%) respiratory distress neonates were survived and with 82 (31%) deaths. [12]

Conclusion- The commonest cause for respiratory distress in neonates is RDS followed by Birth asphyxia. In Term neonates, maximum deaths occur due to Sepsis and in preterm neonates, due to RDS. Fetal risk factors were low birth weight and preterm period of gestation. On blood culture 4.5% had Klebsiella pneumonia growth on discharged patients and 7.1% had MRSA growth which is maximum among deaths. 11.7% cases of TTN, 31.81% Birth asphyxia, 8.4% MAS, 5.8% of sepsis, 2.4% cases of sepsis and pneumonia and 39.6% cases of RDS were discharged. The main cause for mortality is RDS 67.9%, Sepsis 14.3%, Birth asphyxia 10.71% and MAS 7.1%. Fetal risk factors were low birth weight and preterm period of gestation. For treatment most commonly mode of oxygen given via CPAP 65.6%, nasal prongs 24% and 10.4% via mechanical ventilation. Similarly, among 28 deaths 7.1% cases were given oxygen by CPAP, whereas 26(92.9%) were mechanically ventilated. In Term neonates, maximum deaths occur due to Sepsis and in preterm due to RDS. Early detection and appropriate management of the condition is essential to ensure better outcome in all newborns presenting with respiratory distress.

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