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Clinical Profile and Short- Term Outcome of Low Birth Weight Neonates Admitted in Tertiary Care NICU

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Abstract: Reducing low birth weight (LBW) is a public health priority and global commitment and therefore the present study was conducted to find out the proportion of LBW neonates, their clinical profile, associated maternal factors and short term outcome of these babies admitted in the tertiary care NICU. Total 98 LBW neonates were included in the present retrospective study conducted over a period of one year. Their complete data (anthropometry, investigations, treatment modalities, maternal details) were collected in pre validated proforma and analyzed by using software SPSS version 29. The prevalence of LBW born from February 2021 to January 2022 were 25.41%. Total LBW admitted in NICU were 40.33 %. And among the admitted LBW neonates 8.2% were Extremely Low Birth Weight (ELBW) and Very Low Birth Weight (VLBW). Maternal factors found to be mainly associated with LBW neonates were pregnancy induced hypertension (PIH), premature rupture of membrane (PROM) and anemia.

Index terms: Low Birth Weight (LBW), Preterm, Small for Gestation Age (SGA).

1. INTRODUCTION

Low birth weight of neonates is a key indicator of a baby's immediate health and a determinant of their future health. "World Health Organization (WHO) defines Low birthweight neonates as babies with weight at birth of less than 2,500 g (up to and including 2,499 g) or 5.5 lb. irrespective of gestational age." Very low birthweight neonates are defined as babies less than 1,500 g (up to and including 1,499 g) and extremely low birthweight babies are less than 1,000 g (up to and including 999 g), and below the limits set they are all inclusive. About 20 million births in a year have been reported to be Low Birth Weight (LBW) that is about 15-20% [1] and in South Asia about 28% neonates are LBW. [2] In 2010 amongst the low and middle- class income countries 36% of live births were born either preterm or small for gestational age, or both. Of 18 million low-birthweight infants, 59% were term-SGA whereas 41% were preterm (16% preterm-SGA, 25% preterm and appropriate size for gestational age).[3] Incidence of low birth weight babies was 29.3% in a study from north India recently. [4] Approximately 17 percent babies (among those who were weighed) were low birth weight babies in India.[5] Low birth weight in neonates is a predictor of fetal and neonatal mortality and morbidity, poor cognitive development and an increased risk of chronic diseases like diabetes and cardiovascular diseases in later life.[6,7, 8] Causes attributing to low birth weight neonates include early induction of labor or caesarean birth, multiple pregnancies, infections, pre-eclampsia, eclampsia, diabetes, high blood pressure, anemia and malnutrition in mothers.[8,9] The member states in 65th world health assembly set the target of 30% reduction in low birthweight babies globally between 2012 and 2025. [10] Reducing low birthweight neonates has been a public health priority, but now it is a global commitment. But in many developing countries including India quality data on LBW neonates is still limited.

2. AIM & OBJECTIVES

1. To determine the proportion of neonates delivered in this hospital who were LBW.
2. To study the risk factors, clinical profile, complications and short-term outcome of LBW neonates admitted

in NICU.

3. METHODOLOGY

Study type is hospital based retrospective study, conducted at Neonatal Intensive Care Unit at tertiary care hospital in rural western Maharashtra. Duration of study is February 2021 to January 2022 (1 year). 98 low birth weight neonates were studied for their clinical profile and short-term outcome.
Incomplete indoor hospital records of mothers and their LBW babies and extramural babies were not included in the study. The study was framed in such a fashion so as to assess the neonatal and maternal risk factors contributing the outcome. Mother`s previous obstetric history, index pregnancy score, risk factors like chronic diseases, anemia, pregnancy induced hypertension, thyroid status, prolonged rupture of membrane (PROM), covid, maternal age were considered. Neonates were further categorized into 2 categories: <1.5 kg and 1.5- <2.5 kg and cross tabulations and bivariate analysis were done for following parameters- sex, gestational age, APGAR score, anthropometry. Delivery details, vitals, BSL, investigations, treatment modalities were recorded in predesigned and pre validated proforma. Univariate analysis was done for the diagnosis at birth for NICU admission.

The data collected were analyzed by using SPSS version 29 (Statistical package for social sciences). Frequency and percentages were calculated using the software and bivariate analysis of various parameters were compared to the outcome using chi square test. A p-value of <0.05 was taken as significant. Fischer exact test was applied where expected frequency was less than 1.

4. RESULTS:

Total deliveries in our hospital during the time period 1 February 2021 to 31 January 2022 were 956. Out of which 243 neonates delivered were low birth weight (25.41%). Total low birth weights admitted in NICU out of 243 were 98 (40.33%). Out of 98 admitted cases 8 (8.2%) were of weight <1.5 kg and 90 (91.8%) were of 1.5 to <2.5 kg.

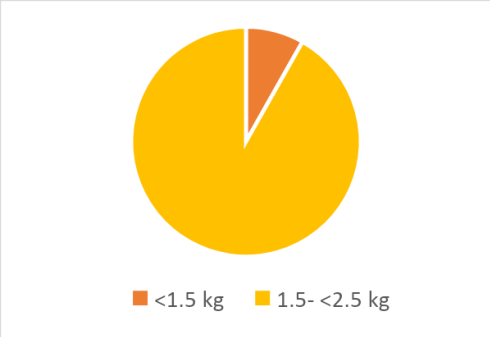

Fig. 1 Percentage distribution within LBW

Male 54 (55.10%) were more than female 44 (44.90%). Male to female ratio was 1.23:1. Gestational age was found to be statistically significant with p value of 0.014, there were 4 (4.08%) neonates of GA <32 weeks, 46 (46.94%) were in between 32-37 and 48 (48.98%) were of GA >37 weeks. APGAR Score at 1 minute was <7 for about 97(98.97%), at 5 minute it was <7 for 21 (21.42%) and at 10 minutes it was <7 for about 8(8.16%) neonates. It was not statistically significant to the LBW babies. In anthropometric measurements 45 (45.92%) were found to be SGA babies and 53 (54.08) were AGA babies. Fetal length of 15(15.31%) were <3centile, 80 (81.63%) were of normal range and 3(89.8%) were of >97centile as per Fenton`s chart. Head circumference of 5(5.10%) were <3centile and 5(5.10%) were >97centile ,88 (89.8%) were of normal range. Head circumference was found to be associated with LBW babies with p value of 0.015 (table 1).

Table 1: Anthropometric parameters of LBW Neonates

S no.	Factors	<1.5 kg (%)	1.5 - <2.5 kg (%)	total	P value
1	SEX				
	Male	4 (7.4)	50 (92.6)	54 (55.10)	
	Female	4 (9.1)	40 (90.9)	44 (44.9)	
2	GESTATIONAL AGE (weeks)				0.014
	<32	3(75)	1(25)	4 (4.08)	
	32-37	5(10.9)	41(89.1)	46 (46.94)	
	>37	0(0)	48(100)	48 (48.98)	
3	APGAR SCORE				

	At 1 min	<7	8(8.2)	89(91.8)	97 (98.97)	1.00
		7 and above	0(0)	1(100)	1 (1.03)	
	At 5 min	<7	3(14.3)	18(85.7)	21 (21.42)	0.363
		7 and above	5(6.5)	72(93.5)	77 (78.58)	
	At 10 min	<7	2(25)	6(75)	8 (8.16)	0.128
		7 and above	6(6.7)	84(93.3)	90 (91.84)	
4	FETAL SIZE					0.464
	<3 centile		5(11.1)	40(88.9)	45 (45.92)	
	3-9 centile		3(5.7)	50(94.3)	53 (54.08)	
	>97 centile		0(0)	0(0)		
5	FETAL LENGTH					0.269
	<3 centile		1(6.7)	14(93.3)	15 (15.31)	
	3-97 centile		6(7.5)	74(92.5)	80 (81.63)	
	>97 centile		1(33.3)	2(66.7)	3 (3.06)	
6	HEAD CIRCUMFERENCE					0.015
	<3 centile		1(20)	4(80)	5 (5.10)	
	3-97 centile		5(5.7)	83(94.3)	88 (89.8)	
	>97 centile		2(40)	3(60)	5 (5.10)	

Temperature (degree Celsius) of 32 (32.65%) were <36.5C and only 2(2.04%) were hyperthermic with temperature of >37.5C. Respiratory rate of 32(32.65%) were ,40/min. and of about 5(5.11%) were >60 (tachypnic). Spo2 of 3(3.06%) were <90 % with p value of 0.017 showing association with LBW babies. CRT of 14(14.29%) were >3sec. not statistically significant. Cry of 30(30.61%) were weak. Reflexes of 24(24.49%) were weak with p value of 0.02 and was statistically significant. Activity of 2(2.04%) were weak and about 24(24.49%) were hypotonic. Hb of 65 (66.33%) were <18g/dl. WBC of 9(9.18%) babies were found to be <9*10^3. Platelet of 21 (21.43%) were <150*10^3 and that of 6(6.12%) were >450*10^3. pH of 37 were <7.35. 2d ECHO and neurosonogram of 5 were found to be abnormal (table 2).

Table 2: Investigations

S no.	**Parameters**	**<1.5kg (%)**	**1.5 -<2.5kg (%)**	**total**	**P value**
1	Temperature (degree celsius)				0.089
	<36.5	2(6.3)	30(93.8)	32 (32.65)	
	36.5-37.5	5(7.8)	59(92.2)	64 (65.31)	
	>37.5	1(50)	1(50)	2 (2.04)	
2	Respiratory rate				0.325
	<40	1(3.1)	31(96.9)	32 (32.65)	
	40-60	6(9.8)	55(90.2)	61 (62.24)	
	>60	1(20)	4(80)	5 (5.11)	
3	SpO2				0.017
	<90	2(66.7)	1(33.3)	3 (3.06)	
	90 and above	6(6.3)	89(93.7)	95 (96.94)	
4	CRT				1.00
	Equal and below 3 sec	7(8.3)	77(91.7)	84 (85.71)	
	Above 3 sec	1(7.1)	13(92.9)	14 (14.29)	
5	Cry at birth				0.055
	Weak	5(16.7)	25(83.3)	30 (30.61)	
	Normal	3(4.4)	65(95.6)	68 (69.39)	
6	Reflex at birth				0.02
	Weak	6(25)	18(75)	24 (24.49)	
	Normal	2(2.7)	72(97.3)	74 (75.51)	
7	Activity at birth				1.00
	Weak	0(0)	2(100)	2 (2.04)	

	Normal	8(8.3)	88(91.7)	96 (97.96)	
8	Tone at birth				0.098
	Weak	4(16.7)	20(83.3)	24 (24.49)	
	Normal	4(5.4)	70(94.6)	74 (75.51)	
9	Hb				1.00
	<18 gm%	5(7.7)	60(92.3)	65 (66.33)	
	18-24 gm%	3(9.1)	30(90.9)	33 (33.67)	
10	WBC				0.551
	< 9*10^3	1(11.1)	8(88.9)	9 (9.18)	
	(9-30)*10^3	7(7.9)	82(92.1)	89 (90.82)	
11	Platelet				0.687
	<150*10^3	2(9.5)	19(90.5)	21 (21.43)	
	(150-450)*10^3	5(7)	66(93)	71 (72.45)	
	>450*10^3	1(16.7)	5(83.3)	6 (6.12)	
12	2-d echo				1.00
	Normal	8(8.6)	85(91.4)	93 (94.89)	
	Abnormal	0(0)	5(100)	5 (5.11)	
13	Neurosonogram				1.00
	Normal	8(8.6)	85(91.4)	93 (94.89)	
	Abnormal	0(0)	5(100)	5 (5.11)	
14	pH				0.087
	<7.35	2(5.4)	35(94.6)	37	
	7.35-7.45	3(25)	9(75)	12	

Management included: IV was given to 53(54.08%), 11(11.22%) were on orogastric tube , 6(6.13%) were on oral feed and 28(28.57%). Caffeine was required in 36 (36.74%) with p value 0f .003 statistcally significant whereas surfactant was required in 6(6.12%) with p value of 0.01 statistically significant. Antibiotic was required in 31(13.27%) with p value of 0 .01 statistically significant. Ionotropes was given to 13(13.27%). Sildenafil was required in 9 (9.19%). 39(39.80% required phototherapy), ventilation (cpap) was required by 41(41.9%). 22(22.45%) babies needed resucittation. 2(2.04%) of them required blood transfusion. Duration of stay of 56(57.14%) were <7 days, 23(23.47%) were between 7-14 days, 15(15.31%) were in between 15-28 days and of only 4(4.08%) were >28 days. P value was 0.001 statistically significant in this case. There was 100% discharge with 0 deaths. 67(68.37%) were found to have gain weight at the time of discharge whereas 26(26.53%) were found to have loss it. Refer table 3.

Table 3: Treatment Modalities

S no.	**Parameters**	**<1.5 kg (%)**	**1.5-<2.5kg (%)**	**total**	**P value**
1	Feeding modalities				0.060
	Breast feed	0(0)	28(100)	28 (28.57)	
	IV	8(15.1)	45(84.9)	53 (54.08)	
	Orogastric	0(0)	11(100)	11 (11.22)	
	oral	0(0)	6(100)	6 (6.13)	
2	Caffeine				0.003
	Not required	1(1.6)	61(98.4)	62 (63.26)	
	Required	7(19.4)	29(80.6)	36 (36.74)	
3	Surfactant				0.01
	Not required	4(4.3)	88(95.7)	92 (93.88)	
	Required	4(66.7)	2(33.3)	6 (6.12)	
4	Antibiotic				0.01
	Not required	1	66	67 (68.37)	
	Required	7	24	31 (31.63)	
5	Ionotrope				0.268
	Not required	6(7.1)	79(92.9)	85 (86.73)	
	Required	2(15.4)	11(84.6)	13 (13.27)	
6	Sildenafil				0.551
	Not required	7(7.9)	82(92.1)	89 (90.81)	
	Required	1(11.1)	8(88.9)	9 (9.19)	
7	Phototherapy				0.709
	Not required	4(10.3)	35(89.7)	39 (39.80)	
	Required	4(6.8)	55(93.2)	59 (60.2)	

8	Ventillation (cpap)				0.268
	Not required	2(3.50)	55(96.5)	57 (58.1)	
	Required	6(14.63)	35(85.36)	41 (41.9)	
9	Resuscittation				0.373
	Not required	5(6.6)	71(93.4)	76 (77.55)	
	Required	3(13.6)	19(86.4)	22 (22.45)	
10	Kmc, nns				0.613
	Not required	2(12.5)	14(87.5)	16(16.33)	
	Required	6(7.3)	76(92.7)	82 (81.67)	
11	Blood transfusion				0.157
	Not required	7(7.3)	89(92.7)	96 (97.96)	
	Required	1(50)	1(50)	2 (2.04)	
12	Duration of stay				0.001
	<7 days	1(1.8)	55(98.2)	56 (57.14)	
	7-14 days	1(4.3)	22(95.7)	23 (23.47)	
	15-28 days	3(20)	12(80)	15 (15.31)	
	>28 days	3(75)	1(25)	4 (4.08)	
13	Weight change at discharge				0.133
	No change	0(0)	5(100)	5 (5.10)	
	Loss	0(0)	26(100)	26 (26.53)	
	Gain	8(11.9)	59(91.8)	67 (68.37)	
14	Outcome				
	Discharge				100
	Death				0

28(28.57%) babies were delivered by normal vaginal delivery, 69(70.41%) were delivered by LSCS and only 1 (1.02%) of them required assisted vaginal delivery. Mothers who delivered, 9 of them were<20 years of age, 77(78.57%) of them were 20-30 years of age and 12(12.25%) were of >30 years of age. Mother`s parity was found to be 1 in 48(48.98%), 2 in 41(41.84%) and 3 in 9 (9.18%) of them whereas 44(44.89%) were gravida 1, 34(34.70%) were gravida 2, 15(15.31%) were were G3, 3(3.06%) were G4, 1(1.02%) was G5 and also G7. 51(52.04%) had 0 live births, 39(39.80%) had 1 live birth and 8 (8.16%) had 2 live births. There were 17(17.35%) mother who had PIH, 40(40.82%) had anemia, 3(3.06%) had thyroid dysfunction, 12(12.25%) suffered PROM and 1(1.03%) had covid. Past history of mother included abruption in 3(3.06%), previously infertility was found in 3(3.06%), 20(20.41%) had suffered abortion and 1 mother suffered death of 1 live birth child. 1(1.02%) mother was diagnosed as twin pregnancy but 1 of them vanished in 1st trimester (table 4).

Table 4: Maternal data

S no.	**Parameters**	**<1.5 kg (%)**	**1.5 -<2.5 kg (%)**	**total**	**P value**
1	Mode of delivery				
	Normal vaginal delivery	0(0)	28(100)	28 (28.57)	
	LSCS	8(11.6)	61(88.4)	69 (70.41)	
	Assisted vaginal delivery	0(0)	1(100)	1 (1.02)	
2	Maternal age				
	<20 yrs	0(0)	9(100)	9 (9.18)	
	20-30 yrs	7(9.1)	70(90.9)	77 (78.57)	
	>30 yrs	1(8.3)	11(91.8)	12 (12.25)	
3	Parity				
	1	3(6.3)	45(93.8)	48 (48.98)	
	2	2(4.9)	39(95.1)	41 (41.84)	
	3	3(33.3)	6(66.7)	9 (9.18)	
4	Gravida				
	1	3(6.8)	41(93.2)	44 (44.89)	
	2	2(5.9)	32(94.1)	34 (34.70)	
	3	1(6.7)	14(93.3)	15 (15.31)	
	4	1(33.3)	2(66.7)	3 (3.06)	
	5	1(100)	0(00	1 (1.02)	
	7	0(00	1(100)	1 (1.02)	
5	No. of live births				
	0	3(5.9)	48(94.1)	51 (52.04)	

	1	2(5.1)	37(94.9)	39 (39.80)	
	2	3(37.5)	5(62.5)	8 (8.16)	
6	PIH				0.139
	No	5(6.2)	76(93.8)	81 (82.65)	
	Yes	3(17.6)	14(82.4)	17 (17.35)	
7	Anemia				1.00
	No	5(8.6)	53(91.4)	58 (59.18)	
	Yes	3(7.5)	37(92.5)	40 (40.82)	
8	Thyroid				1.00
	No	8(8.4)	87(91.6)	95 (96.94)	
	Yes	0(0)	3(100)	3 (3.06)	
9	Prom				1.00
	No	7(8.1)	79(91.9)	86 (87.75)	
	yes	1(8.3)	11(91.7)	12 (12.25)	
10	covid				0.082
	No	7(7.2)	90(92.8)	97 (98.97)	
	Yes	1(100)	0(0)	1 (1.03)	
11	Bad obstetric history in past				0.706
	Abruption	0(0)	3(100)	3 (3.06)	
	Previous infertility	0(0)	3(100)	3 (3.06)	
	Abortion	2(10)	18(90)	20 (20.41)	
	Deaths	0(0)	1(100)	1 (1.02)	
	Twin detected but 1 vanished in 1st trimester	0(0)	1(100)	1 (1.02)	

Diagnosis at admission:

DIAGNOSIS	NO.	PERCENTAGE(%)
RDS	36	36.73
PRETERM	27	27.55
HYPERBILLIRUBINEMIA	22	22.45
IUGR	19	19.38
MSL	10	10.20
HYPOGLYCEMIA	4	4.08
TTN	3	3.06
CONGENITAL ANOMALIES	3	3.06
CONVULSION	2	2.04
SEPSIS	2	2.04
FEED INTOLERANCE	2	2.04
FEVER	1	1.02
TWIN	1	1.02
HEMATEMESIS	1	1.02

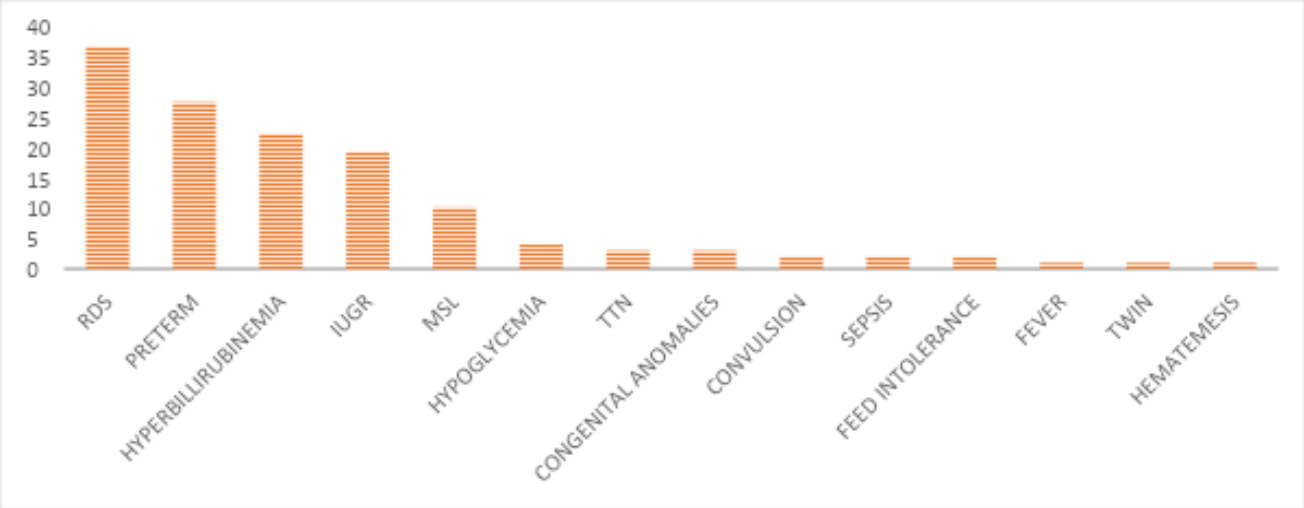

Fig. Diagnosis at admission of LBW neonates

Blood sugar level serial study:

At 0 hr	A 2hr	4 hr	12 hr	Day 2	Day 3	DOD
33	88	92	88	80		105
25	30			42		55
44				66		80
32	55			98		106

5. Discussion:

We conducted a retrospective study trying to determine the prevalence of low birth weight babies admitted in NICU and studying their risk factors neonatal and maternal, clinical profile, complications and short-term outcome. The study variables were compared with similar studies. 98 babies were enrolled in the present study with the prevalence of LBW babies 25.41% which was comparable to 26.9% of Rashmi Vishwakarma et a. study. [11] In the present study percentage of extremely low birth weight plus very low birthweight were cumulative about 8.2%. and low birth weight being 91.8% which was found to be significantly different from Gargi H Pathak et al study where extremely and very low birth weight babies were 28% and low birth weight were 72%.[12] This difference could have been due to the more babies born <32 weeks as compared to present study and could also be due to the reason that more mothers were anemic in the study. Males (55.10%) were higher than females (44.90%) which was comparable to Snehal V Patel et al study with male (57.5%) > female (42.5%)[13] and Gargi H Pathak et al study having male (54%) > female (46%)[12], signifying that males have higher rate than female in being born as LBW. In the study conducted by Gargi H Pathak et al majority 40% LBW babies were of GA 32-37 week, 33% were of <32 weeks and 27% were only term >37 babies[12]. This differed from the present study by >37 weeks being 48.98%, then 32-37 weeks of gestation being 46.94% and only about 4.08% being of <32 weeks of gestation. In a study by Aanchal Saini et al 70% babies were found to be AGA, 28% were SGA and 2% were LGA[14] whereas in the present study 54.08% were AGA and 45.92% were SGA babies.

In a study conducted by Bandyopadhyay et al there were 23.01% babies with weak cry[15] as compared to the present study where 30.61%. More studies are required with respect to temperature, respiratory rate, Spo2, activity and tone to be able to compare the present study.

Neonates admitted in the present study were mainly due to RDS (36.73%), preterm (27.55%), hyperbilirubinemia (22.45%), IUGR (19.38%), meconium stained liquor (10.20%), hypoglycemia (4.08%), congenital anomalies and TTN being 3.06% each. Sepsis was found to be only 2.04%. 2.04% were due to convulsions and feeding intolerance each. 1.02% were due to hematemesis, twin born and dehydration each. Some of these variables could be compared from studies like of Snehal V Patel et al study which has RDS 20.5%, hyperbilirubinemia 25.4%, preterm 21%, feed intolerance 3.7% and hypoglycemia 10.8%.[13] Whereas in a study conducted by Gargi H. Pathak et al RDS was 27.8%, hyperbilirubinemia was 11.6%, sepsis was 18.4%, congenital heart disease was 6.2%, and hypoglycemia was 7.3%. [12] In a study conducted by Bandyoupadhyay et al hyperbilirubinemia 31.9% was comparable and also congenital anomalies was found to be 5.9%.[15]

In the present study 54.08% were on intravenous fluid, 28.57% were on breast feed, 11.22% were on oro-gastric tube and 6.13% were on oral feed. This was found to be comparable to the study conducted by Aanchal Saini et al study where 66% were on iv fluids, 34% were on breast feed, and 4% were on orogastric tube[14]. Snehal v Patel et al study [13] showed the incidence of jaundice requiring phototherapy to be 25.4% which was a significantly different from the present study where 60.2% babies required phototherapy. In the present study 41.90% babies required ventilatory support and in the study conducted by Snehal v Patel et al 15.7% of VLBW and 50% of ELBW babies were found to have required ventilatory support[13] and in a study by Aanchal Saini et al[14] it was found to be 26% which suggests that this facility has an important role in the survival of low birth weight babies. Duration of stay in present study for 57.14% babies were <7 days, it was for 23.47% in between 7-14 days, for 15.31% it was 15-28 days and in 4.08% it for >28 days. In a study conducted by Gargi H Pathak et al duration of stay for 92% babies 1-14 days and >14 days it was in 8% babies admitted.[12]

In the present study mode of delivery was maximum by LSCS 70.41% followed by NVD in 28.57% and then by AVD in 1.02%. In the study conducted by Jilela Mahesh Reddy et al 52.8% were vaginal and 47.2% were by CS.[16] In another study by Snehal V Patel et al[13] NVD was in 51.25% and that by LSCS was 48.75%, LSCS was not comparable. In the present study mother`s age at delivery was<20 years in 9.18%, 20-30 years in 78.57 % and 12.25% in >30 yrs age group it was comparable with a study by Jilela Mahesh Reddy et al (16) age at delivery for <19 years was 6%, 20-30 years it was 64.4% and >31 yrs was 29.6 %. In a study by Snehal V Patel <20 years was for 23.75%, 20-30 years was 65% and >30 years was 11.25%, was found to be slightly comparable.[13] Parity in the present study was 1 for 48.98%, 2 for 41.84% and 3 for 9.18%. in a study by Sarika M et al[11] was 22.14% , p2 in 28.94%, p3 was 47.82%. In the present study 40.82% had anemia 17.35% mothers had PIH, 12.25% had prom, 3.06% had thyroid dysfunction, abruption and previous infertility each, 20.41% had a history of abortion. Some of these parameters were found to be comparable to the study by Jilela Mahesh Reddy et al[16] where mothers with anemia were 49.6%, with PIH were 8.8% and with a history of abortion was in 14.2%. In a study by Gargi H Pathak et al[12] anemia was seen in 72% mothers, PIH in 8%, PROM in 16% cases.

6. Conclusion:

- The prevalence of LBW born were 25.41%. Total LBW admitted in NICU out of these were 40.33 %. And among the admitted LBW neonates 8.2% were ELBW and VLBW.
- Out of 98 admitted 54 were found to be male. Majority of them were term neonates (48.98%) and 45.92% of all were SGA, majority being AGA.
- Delivery type for majority was found to be LSCS (70.41%) than NVD (28.57%). Maternal factors like PIH (17.35%), anemia (40.82%), PROM (12.25%) were found to be associated to the admission of LBW neonates.
- Cry (p=0.05) and reflex (p=0.02) were poor and were statistically significant with the admission of LBW neonates.
- RDS (36.73%), preterm (27.55%), hyperbilirubinemia (22.45%), IUGR (19.38%), and MSL (10.20%) were found to be the major cause for admission.
- Majority (54.08%) were managed by IV fluid followed OGT (11.22%) and oral (6.13%) and remaining (28.57%) were on BF. Caffeine(p=0.003), surfactant (0.01), antibiotic (0.01) played a major role in management. Most of them were managed successfully within 7 days (57.14%).
- Outcome being 100% discharge without any death indicates good success in managing LBW neonates.

RDS, preterm, hyperbilirubinemia, IUGR are the main presentations for LBW neonates admission and for better outcome maternal risk factors like PIH, anemia, PROM require optimum antenatal care and management . Limitation of the present study is that longitudinal follow up was not feasible as it was a retrospective study.

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