

Clinical characteristics & morbidity pattern among Low Birth Weight Babies

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Abstract- As per WHO, about 25 millions of low weight babies are born annually and they are predisposed to a numbers of problems like hypoglycaemia, infection, hypothermia, respiratory problems etc. They need special nursing care. The present study described the various clinical characteristics and the morbidity pattern among these babies. The study was conducted over a period of two months at a medical college hospital with 50 samples including preterm and small for gestational age neonates, through observation and record survey. The major features were wide suture, soft skull bones, absence of buccal fats, poor reflexes. Among complicating features respiratory distress, jaundice, metabolic complications were significant.

Index Terms- LBW babies, low birth weight babies, morbidity, SGA

I. INTRODUCTION

A baby is an inestimable blessing and bother. The low birth weight baby is the baby whose birth weight is less than 2500gm [1]. About 98% of all neonatal deaths occur only in developing countries while developed countries account for the rest of the neonatal deaths [2].

It is estimated that globally about 25million low birth weight babies are born at each year, consisting 17% of all live births, nearly 95% of them in developing countries. Government of India evicted contused this problem & decrease the incidence to 10% by the year 2000 but not achieved till now[3].It is reported that the current neonatal morality rate (NRM) of 44 deaths per 1000 live births accounted for nearly 2/3rd of the global infant mortality & half of the global child morality. The study has revealed that almost 8 million LBW infants were born in India every year. It is also said that 75% of neonatal deaths occurred in infants with low birth weight [4].

Nearly 50% of all infants deathsoccur in the neonatal period & the common cause is low birth weight. Low birth weight newborns are pediatric priority because they have less chances of survival than babies weight over 2500gm. Half of prenatal and 1/3rd of infant mortality are due to low birth weight[5].

The prevalence of low birth weight babies is about 39.1% [6] & 30.3% [7].The rate is 30% in India contract to 5.7% in developing countries. Highlighted the mortality and morbidity magnitude of about 18millions in the year 2007[3].Neonatal morbidity is directly related to birth weight and functional maturity of various systems and they suffers from various morbidities like asphyxia, infections, hypothermia & hyperbillirubinemia[8].

Among LBW babies,11% of infants died before being discharged from hospital and 27% had patent ducts arteriosus, 3% had GI perforation, 8% had bacteria sepsis, 54% had surfactant therapy and 18% had postnatal steroids[9].It was found maternal weight, BMI, anemia in pregnancy, age & parity are the significant factors for intra uterine growth retardation[10]. Maternal malnutrition, age, anemia are the most important factors responsible for reduced birth weight[11].Poor nutrition, chronic diseases, adolescent mothers, inadequate prenatal care are the most identified pre-conception risk factor for LBW[12,13].LBW babies are at higher risk of developing hypothermia, hypoglycemia, respiratory problem and infection [14].

II. METHOD

The study was a descriptive longitudinal prospective design conducted over a period of two months. The LBW babies were observed and characteristics were recorded. The sample size of 50 LBW babies wereselected by purposive sampling. The setting was NICU of a medical college hospital. A self designed observation check list was prepared on clinical profile and morbidity pattern among the LBW babies to rule out any associated factors lies in mother. The presence of adverse items scored '1'and absence scored '2'. The data was collected through records, observation and from the staff working in NICU. The data was analyzed through percentage, mean, SD and non-parametric test (chi square).

III. RESULT

The maternal characteristic presented in the table below shows the frequency & mean score of each variable.

Table-1: Description of maternal characteristics

	(n = 50)	Mean ± SD
Age	14	
< 20yrs	18	
20-30yrs	08	26.26 ± 4.20
>30yrs		
Parity		
1	20	
2	15	
>2	15	1.80 ± 0.9

Wt. gain during pregnancy

8-10kg	05	11.8 ± 9.38
10-12kg	20	
12-14kg	25	

Number of antenatal checkup

1-4times	05	6.45 ± 2.19
4-6 times	20	
7-10times	25	

Hb% during pregnancy

8-10gm		10.2 ± 1.32
10-12gm	25	
12-14gm	20	

Other prominent features were 60% were from rural area, 74 % had family income Rs.5, 000-10,000/-, 40% had anemia during pregnancy and 30% of mothers had PIH in pregnancy. The baby characteristics shown in table no-2 present the differences among type of baby that is preterm and small for gestational age.

Table – 2: Comparing preterm & SGA

	Preterm n=40	SGA n=10	'P' Value
Gestational Age			
31-34wks	3	2	0.621
34-37wks	37	8	
Apgar Score at 5min			
4-7			0.001
7-10	22	8	

80% cried soon after birth and 80% babies were preterm only 20% were small for gestational age. The clinical characteristics of low birth weight babies include physical and neurobehavioral feature observed and assessed during their admission in NICU. Table no-3 reveals the birth characteristics of LBW babies.

Table-3: Characteristics of LBW babies

Characteristics	N=50	%	Mean ± SD
Baby weight (Kg)			
1-1.5	16	32	1.96 ± 0.86
1.5-2	21	42	
2-2.5	13	26	
Crown heal length			
41-44cm	38	76	43.14 ± 3.62
44-47cm	10	20	
47-50cm	2	4	

Table -4: Physical features of LBW babies

Sl. No	Observation	Present N=50	Absent N=50 (%)	'p' value
1	Head is larger than body	48	02	<0.001
2	Skull bone are soft	50	0	<0.001
3	Posture of body is not flexed	42	08	<0.001
4	Suture widely separated	50	00	<0.001
5	Absence of buccal fat	46	04	<0.001
6	Ear cartilage not fully developed	16	34	0.004
7	Breast nodules less than 5mm	16	34	0.004
8	Deep creases over palm & sole absent	22	28	0.317
9	Genitalia normally under developed	30	20	0.071
10	Skin is wrinkled	32	18	0.009

The above table demonstrates the physical features with mean score of 16±0.3002 that reveals very poor presentation of physical & physiological maturity. Likewise the neurobehavioral assessment shows difference in neuromuscular maturity as shown in the Figure below.

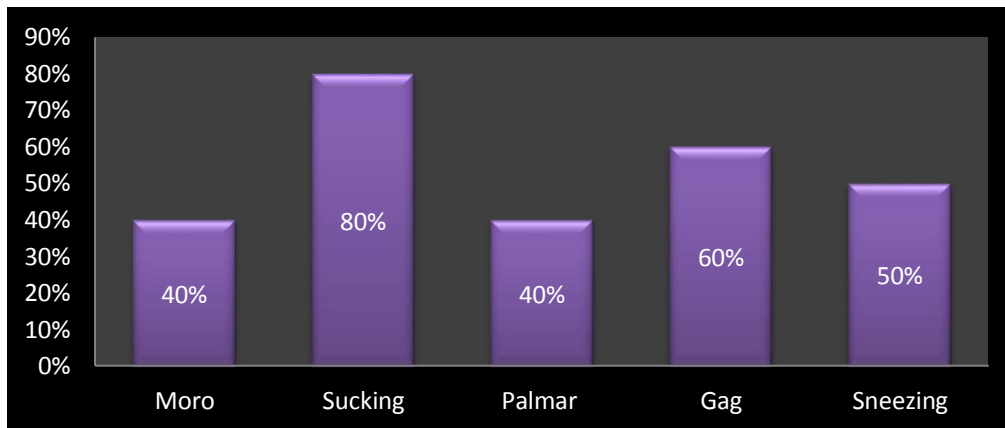


Figure-1: Presence of reflexes

Table-5: Severity of morbidity pattern

Severity	n= 50	%
Mild	25	50
Moderate	21	42

Severe 04 08

The neonatal morbidity increases when baby is small for his age. Various complications arises related to the immaturity status of the neonates. The graph-2 shows the distribution of various complications arose during their stay in NICU. The study also showed 16% of babies died during their stay in NICU.

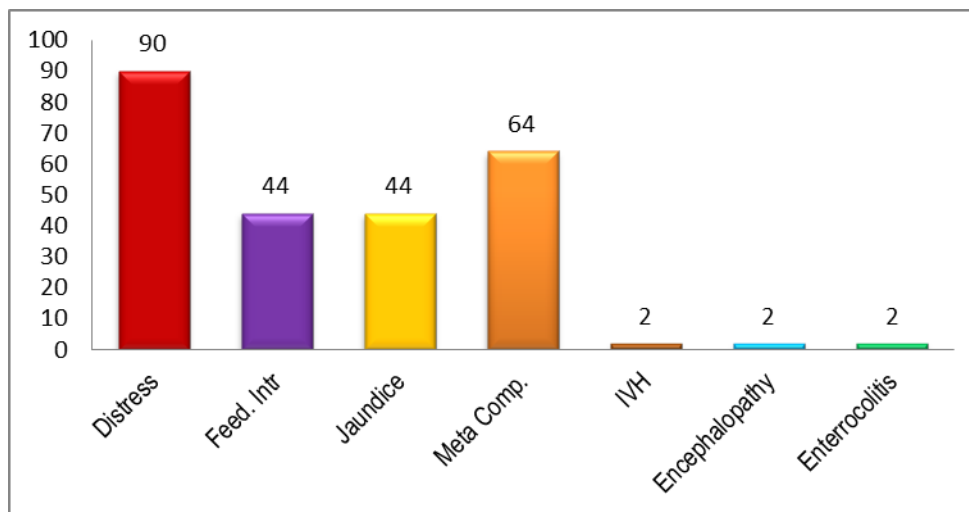


Figure-2: Various morbidity patterns

Table-6: Associating severity of morbidity among baseline characteristics.

	Mild	Mod	Sever	χ^2	'p 'Value
Parity					
1	3	4	13		
2	4	3	8		
>2	2	4	9	0.358	0.9857
Wt gain					
8-10kg	1	1	3		
10-12kg	6	3	11		
12-14kg	5	9	11	1.55	0.2131
No. of Ant. Checkup					

1-4times	0	2	3		
4-6times	3	7	10	1.526	0.822
7-10times	3	10	12		
Hb % during Pregnancy					
8-10	4	4	17		
10-12	3	7	10	3.979	0.0488*
12-14	1	0	4		
Residence					
Rural	6	9	15		
Urban	5	5	10	0.048	0.976

The data above demonstrates level of hemoglobin has greater impact on severity of morbidity pattern.

IV. CONCLUSION

The neonatal morbidity pattern presents poor pictures in India and it vary from region to region. Low birth weight with high mortality and morbidity continues to be a major health problem in India. LBW babies contributes as significant factor for raising the problems. The current study shows a vivid picture of low birth babies where they are everyway under developed. The nurses must be more responsible in caring these babies. They must provide an environment which is safe & infection free, adopted to their physiological needs and promotes nursing services to enhance their rate of survival. Mothers must be aware about the relation of decreases hemoglobin level during pregnancy with delivery of a low birth weight of babies. The case scenario aware us to educate mother to complete family within 35 years, prevent successive pregnancies & pregnancy weight gain must be appropriate to the gestational age which must be appropriate to the gestational age with adequate identity intake. Diet should be rich in protein & iron to maintain the Hb% level more than 10gm%. We need to identify factors & problems as early as possible and should demonstrate skilled nursing care for these babies for early recovery and reducing the mortality rate morbidity pattern.

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