



A STUDY ON CLINICAL PROFILE & OUTCOME OF LOW BIRTH WEIGHT NEONATES IN A DISTRICT LEVEL SNCU.

Pediatrics

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ABSTRACT

INTRODUCTION: Newborn deaths account for 45% of deaths among children under the age of five globally. Low birth weight (LBW) contributes to 60% to 80% of all neonatal deaths. Identifying the factors influencing neonatal mortality of LBW neonates will help in planning measures for further reduction of neonatal mortality & morbidity. With this background, we conducted this study to evaluate the clinical profile and outcome of LBW neonates in a district level SNCU.

AIMS & OBJECTIVES: The aims & objectives of this retrospective study were to know the clinical profile and outcome of low birth weight (LBW) neonates in a district level SNCU.

MATERIAL & METHODS: We retrospectively analyzed the computerized data of a district level SNCU, for the period of twelve months. Admission, treatment and short term outcome profile of inborn low birth weight (LBW) was analyzed thoroughly. Inborn delivery analysis was also done.

RESULT: Total number of live birth was 6123 of which 1631(26.7%) was LBW neonates. (14.3%) were preterm LBW & rest was term SGA. 19.5% of LBW neonates needed care in SNCU. 48.7% (155 out of 318) were preterm LBW. 75.2% were cured, 14.4% expired and 8.2% needed referral to higher centre. Common indications of admission were jaundice, sepsis, birth asphyxia etc. Prematurity, birth asphyxia, RDS, sepsis etc were the common causes death.

CONCLUSION: Analyzing the data, it was found that 62.6% of total admission is constituted by LBW babies <2500 g. Mortality & morbidities of preterm LBW neonates are much higher than LBW with full term IUGR. Countries can reduce their neonatal mortality by reducing the birth of LBW babies & their mortality.

KEYWORDS

Neonates, LBW, preterm, outcome.

INTRODUCTION:

Newborn deaths account for 45% of deaths among children under the age of five globally, resulting in 2.7 million lives lost each year. Prematurity, complications of birth and sepsis are the three most important causes of neonatal mortality. Low birth weight (LBW) contributes to 60% to 80% of all neonatal deaths^{1,2}. Though several primary care-based strategies and programmes were introduced at national level since nineties, the neonatal mortality was almost stagnant since recent past. Countries can reduce their neonatal mortality by reducing the birth of LBW babies & their mortality. Identifying the factors influencing neonatal mortality will help in planning measures for further reduction of neonatal mortality & morbidity. With this background, we conducted this study to evaluate the clinical profile and outcome of LBW neonates in a district level SNCU.

AIMS & OBJECTIVES:

The aims & objectives of this retrospective study were to know the clinical profile and outcome of low birth weight (LBW) neonates in a district level SNCU.

MATERIAL & METHODS:

We retrospectively analyzed the computerized data of a district level SNCU, for the period of twelve months (from 01/01/2018 to 31/12/2018). It is a 20-bed level II sick newborn care unit (SNCU), at a district hospital. Admission, treatment and short term outcome profile of inborn low birth weight (LBW) was analyzed thoroughly. Inborn delivery analysis was also done. Necessary ethical permission was taken from the institution.

RESULT:

Total number of live birth was 6123 of which 1631(26.7%) was LBW neonates. Out of 1631 LBW babies 121(2%) were VLBW (very low birth weight) & 22 (0.4%) were ELBW (extremely low birth weight). Of the 1631 LBW babies 233 (14.3%) were preterm & rest were term SGA.

Out of 6123 total live birth 508 (8.3%) were admitted in SNCU. Out of 1631 LBW babies 318 (19.5%) were admitted in SNCU. LBW neonates constituted 62.6% of total SNCU admission. 50(41.3%) out of 121 VLBW & 21 out of 22 ELBW neonates were admitted in SNCU. Of the 318 LBW neonates admitted in SNCU, 155 LBW babies were preterm. Average duration of stay of sick LBW neonates in SNCU was 6.8 days.

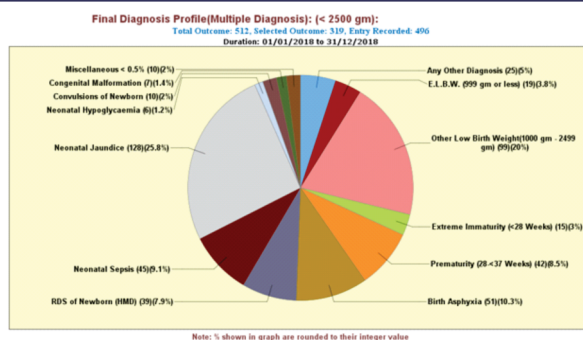


Figure 1: Showing the profile of clinical diagnoses.

Figure 1 showing the profile of clinical diagnoses. Commonest diagnosis was neonatal jaundice. Neonatal sepsis was detected in 45 (9.1%) cases. 51(10.3%) neonates were admitted for birth asphyxia.

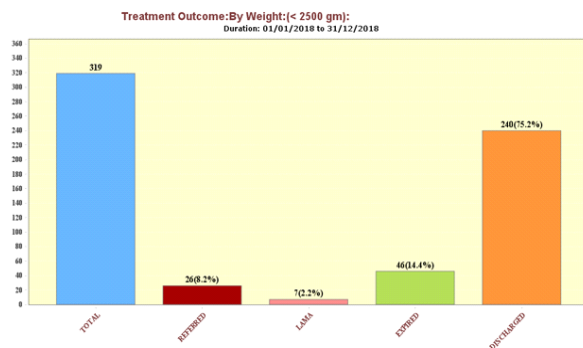


Figure 2: Showing the outcome of LBW neonates.

Figure 2 showing the outcome of LBW neonates that needed admission to SNCU. 240 (75.2%) were cured & 46 (14.4%) expired. 26 (8.2%) needed referral to higher centre. In 7 (2.2%) neonates, the care givers opted for LAMA (left against medical advice). 18 (85.7%) neonates out of 21 ELBW and 8 (16%) neonates out of 50 VLBW neonates admitted in SNCU died. Out of total 59 neonatal deaths during the twelve month study period, 46 were LBW neonates.

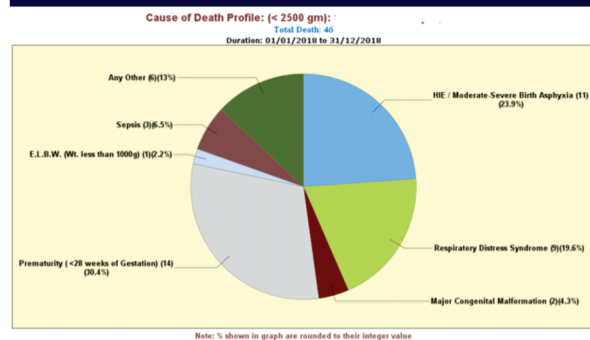


Figure 3: Showing profile of causes of death of LBW neonates.

Figure 3, showing profile of causes of death of LBW neonates. Prematurity, birth asphyxia, RDS, sepsis etc were the common causes death.

DISCUSSION:

Low birth weight (LBW) is a key issue in public health, especially for developing countries. It is a result of preterm delivery or the birth of a growth restricted fetus¹. The estimated worldwide LBW prevalence in 2015 was 14.6% (uncertainty range 12.4–17.1) compared with 17.5% (14.1–21.3) in 2000 (average annual reduction rate 1–23%). In 2015, an estimated 20.5 million (UR 17.4–24.0 million) live births were LBW, 91% from low-and-middle income countries, mainly southern Asia (48%) and sub-Saharan Africa (24%)³. In our study occurrence of LBW babies was 26.7%.

Many studies have accounted for the risk factors for preterm delivery and for LBW as well as for neonatal outcomes^{4,5,6}. In our study 19.5% of total LBW were admitted in SNCU. 75.2% admitted LBW neonates survived and 14.4% died.

It would be worth to have a differentiation between LBW due to preterm birth or fetal growth restriction. It is well known that preterm babies weighing less than 2500 g are more likely to die. Infant mortality rate among preterm LBW babies are five times higher than that of preterm babies weighing 2500 g or more⁷, and that of term LBW babies⁸. The latter group comprises mostly babies with intra uterine growth restriction (IUGR)⁹. Because of this much higher mortality, it is important to estimate how many LBW babies are preterm as they require special health care.

The poor capacity of identifying the real gestational age is well known in developing setting, although it is believed that from one third to half of the cases of LBW were due to preterm births¹⁰. In this study 14.3% LBW babies were preterm and rest of the LBW babies were due to retarded growth of full term neonates. In our study morbidity of preterm LBW neonates were significantly more than the LBW neonates resulting from growth restriction of full term neonates. 66.5% of preterm LBW neonates were admitted in SNCU & 11.6% of full term IUGR LBW neonates were admitted in SNCU.

In India, very-low-birth-weight (VLBW) babies (birth weight <1500 g) constitute only 3.4% of total live births; however, they are responsible for around one-third (29.7%) of the neonatal deaths¹¹. In our study, VLBW babies constituted 2% of total inborn neonates. There are several prospective and retrospective studies from both developing and developed countries regarding the outcome of VLBW babies^{12,13}. Out of total 46 LBW neonatal death, 26 (56.5%) were either VLBW or ELBW neonates.

Morbidities like RDS, sepsis, HIE, IVH, congenital defects, Hypoglycemia, Jaundice etc are common in LBW neonates. In our study common morbidities were jaundice, sepsis, birth asphyxia etc. Common causes of deaths were HIE, RDS, prematurity etc. It has been shown in different studies that infants with birth defects (either chromosomal or structural abnormalities) are more likely to have LBW¹⁴. In our study congenital malformation was detected in 1.4% neonates.

CONCLUSION:

Analyzing the data, it was found that 62.6% of total admission is constituted by LBW babies <2500 g. Mortality & morbidities of preterm LBW neonates are much higher than LBW with full term

IUGR. Countries can reduce their neonatal mortality by reducing the birth of LBW babies & their mortality. Early referral of high-risk pregnancies to the tertiary care centers will greatly reduce the mortality and morbidity in LBW babies.

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