

Morbidity Spectrum of Neonates in a District Hospital, South India

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Abstract

Objective: This study aimed to determine the spectrum of diseases of admitted neonates in SNCU district hospital.

Methods: Retrospective study was done at SNCU district hospital, Nalgonda. Data was obtained from SNCU online database for a period of a year. Data obtained included age, weight, sex, place of delivery, morbidity profile, diagnosis, and mortality profile. Categorical variables were tabulated.

Results: A total of 958 neonates were recruited during the study period, 56.47% were males, and 43.53% were females. Majority of the neonates, 69.27% were delivered at SNCU Nalgonda, 30.8% were extramural neonates. The reasons for admission were prematurity (33.61%), birth asphyxia (24.11%), neonatal jaundice (16.16%), and respiratory distress syndrome (14.19%). Prematurity was the most common morbidity 33.61% in the admitted neonates.

Conclusion: Antenatal, natal, and post natal intervention practices needs to be strengthened. Improving antenatal corticosteroid coverage can decrease complications due to prematurity. Facility delivery to be attended by skilled health personnel

Keywords: morbidity profile, district hospital, prematurity

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I. Introduction

Neonatal period is the most vulnerable period of human life as it accounts for very high morbidities and mortalities and most of these are preventable. It is estimated that 130 million neonates are born each year and out of these, 4 million die in first 28 days of their life [1]. Neonatal mortality statistics serve as sensitive indicators of the availability, utilization, and effectiveness of maternal child health service in the community [2].

There are very scanty data which are available regarding the neonatal mortality and morbidity pattern in India. To apply preventive strategies, we should have the data on morbidities which are claiming the neonatal life.

Studies elsewhere in the country have shown that the major causes of admission and death, were Birth Asphyxia, Sepsis and Low Birth Weight/ Prematurity [3]. A cross sectional study to assess the functioning of SNCUs across 8 rural districts of the country found that the leading causes of admissions and death were Birth Asphyxia, Low birth Weight / Prematurity, Sepsis and Jaundice [4]. Sepsis and prematurity was found to be the commonest morbidity found in many parts of the world [5,6,7].

The purpose of the study was to understand the patterns of morbidities with an objective to formulate specific recommendations to reduce neonatal mortality.

II. Methodology

This study is a retrospective, descriptive study of medical records carried out in the Special newborn care unit (SNCU), district hospital, Nalgonda for one year December 2017 to November 2018. Inclusion Criteria: All neonates admitted before 28 days of life. After obtaining ethical committee approval, data of all the admitted babies were recorded by analyzing all the case sheets from the records section and SNCU online software database. Data was collected as inborn or outborn, admission, sex, gestational age, weight for gestation, referral centre, age at presentation, indications for admission, duration of hospitalization, complications encountered, procedures done during hospitalization and outcome. Primary disease was considered as final diagnosis even if

the baby developed complications of primary disease or having more than one disease. WHO definitions were used for Term, Preterm, Low Birth Weight (LBW), Very Low Birth Weight (VLBW), Extreme Low Birth Weight (ELBW) and congenital malformation. Meconium aspiration syndrome was neonates diagnosed on basis of history, clinical and radiological findings. Birth Asphyxia was diagnosed APGAR. Neonatal jaundice was diagnosed after assessment of serum bilirubin and in pathological zone as per AAP charts. Sepsis was diagnosed by clinical and appropriate lab screening tests [8]. The data was filled in the EXCEL sheet and categorical variables were tabulated.

III. Results

Between December 2017 to November 2018, 958 babies were admitted in the SNCU. Of the total babies admitted, 663 (69.2.8%) were Inborn ie they were born at the same health facility where the SNCU is located and 295 (30.8%) were Outborn ie they were born at facilities where there is no SNCU or at home. The gender distribution among the admitted newborns was 541 (56.47%) males and 417 (43.53%) females. The gestation age distribution had 58.46% neonates were in 37 to <42 weeks, 19.94% in 32 to <34 weeks, and 16.39% in 34 to <37 weeks. Majority of the neonates were low birth weights (46.87%) (Table 1).

Table 1: Demographic profile of the admitted neonates

Variable	Value (n=)	Percentage
ADMISSION		
Inborn	663	69.2
Outborn	295	30.8
Total	958	100
GENDER		
Male	541	56.47
Female	417	43.53
Total	958	100
GESTATION AGE(weeks)		
≥42	2	0.21
37 to <42	560	58.46
34 to <37	157	16.39
32 to <34	191	19.94
28 to <32	29	3.03
<28	19	1.98
Total	958	100
WEIGHT(gms)		
≥2500	426	44.47
1500-2499	449	46.87
1000-1499	70	7.31
<1000	13	1.36
Total	958	100

Out of the total babies admitted in SNCU, 83.09% were discharged, 5.53% died, 8.46% were referred and 3.03% Left against medical advice (Table 2).

Table 2: Outcome of the admitted neonates

OUTCOME	Value(n=)	Percentage(%)
Discharge	796	83.09
Referral	81	8.46
LAMA	29	3.03
Died	53	5.53

Prematurity, Birth Asphyxia, Jaundice were the common most morbidities accounting to 33.61%, 24.11%, and 14.19% respectively (Table 3).

Table 3: Morbidity profile of the admitted neonates

VARIABLE	Value(n=)	Percentage(%)
Respiratory Distress	136	14.19
Birth Asphyxia	231	24.11
Sepsis	26	2.71
Jaundice	155	16.16
Prematurity	322	33.61

Low birth weight	8	0.83
Congenital Malformation	9	0.93
Others	71	7.41
Total	958	100

IV. Discussion

This study depicts the morbidity pattern in the SNCU. The inborn and outborn admission rates (69.2% and 30.8%) is similar to other studies (71.7%, 75.6% and 28.3%,24.5%) [9,10]. Majority of the admissions were males as compared to females (56% vs 44%), similar findings in other studies [8,9,10]. Further studies are required to view the male sex predominance. The common morbidities seen in the admitted babies are Prematurity (33.61%), Birth Asphyxia (24.11%), Jaundice (16.16%) and Respiratory distress (14.19%). Other studies reported higher rates of birth asphyxia and sepsis[8,11,12]. Morbidity data revealed that 33.61% were Low Birth Weight /Preterm in the present study. This is on contrast to other studies wherein the LBW / Preterm varied from 11 to 50% [8].The highest rate of prematurity could be due to lack of adequate antenatal checkups in determining high risk pregnancy. The availability of CPAP and surfactant can reduce the deaths due to RDS.The incidence of neonatal Jaundice (16.16%) is comparable to other studies (Neogi et al (18%), Sridhar et al 7%) [4,10]. Explaining families of the physiological jaundice and advising adequate feeding can reduce unnecessary admissions which can also be managed in level I care.

Quality antenatal care, skilled health care providers, timely referral, strong link between communities and health facility, and prompt intervention at the health facilities can prevent complications due to morbidities. Capacity building needs to be addressed to the stakeholders for further corrective actions.

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