Profile of Neonatal Mortality in SNCU District Hospital

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ABSTRACT

Objective: The measure of progress of National health care services is determined by decreased mortality rate. 2.6 million neonates die each year of which 75% are preventable deaths with simple quality care measures.

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. Prematurity was the most common morbidity 33.61% in the admitted neonates. The mortality rate in the present study is 5.53%. Major contributors to the neonatal mortality were RDS (47.16%), prematurity (16.98%), and birth asphyxia (11.32%).

Conclusion: Improving antenatal care, improved access to health facility, timely referral of high risk cases, capacity building, intensive interventional management can reduce neonatal mortality and its complications.

Keywords: mortality profile, district hospital, respiratory distress, quality care

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]

Of the 25 million babies born in India every year 1 million die, India alone contributes to 25% of neonatal mortality around the world. [3] As per the report sheet published in the Lancet, the major direct causes of neonatal mortality are pre-term birth (27%), infection (26%), asphyxia (23%), congenital anomalies (7%), others (7%), tetanus (7%), and diarrhoea (3%). [4] 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. [5]

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 mortalities which are claiming the neonatal life. The purpose of the study was to understand the patterns of mortalities to formulate preventive actions at antenatal, natal and postnatal level.

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 analysing 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 hospitalisation, complications encountered, procedures done during hospitalisation 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.

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 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

Respiratory distress, Prematurity, Birth Asphyxia were the common most mortalities accounting to 47.16%, 16.98%, and 11.32% respectively (Table 3).

Table 3: Mortality profile of the admitted neonates

VARIABLE	Value(n=)	Percentage(%)
Respiratory Distress	25	47.16
Birth Asphyxia	6	11.32
Sepsis	5	9.43
Jaundice	0	0
Prematurity	9	16.98
Low birth weight	5	9.43
Congenital Malformation	2	3.77
Others	1	1.89
Total	53	100

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%). [3,6] 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. [3,6,7]

The mortality rate of 5.53% in the current study is lower than developed countries like Canada (7.6%) depicting minimal and timely interventions can reduce neonatal death rates. [8] The most common causes of mortality in our study was RDS (47.16%), prematurity (16.98%), and birth asphyxia (11.32%). Similar pattern of outcome has been reported by study conducted by Sridhar and Rashid et al. [3,8,9] In contrast the study report published by ICMR reports sepsis (32.8%) as the major cause for neonatal mortality followed by birth asphyxia (22.3%) and prematurity (16.8%). [10] The reason for deaths related to RDS and prematurity could be due to poor maternal health condition, inadequate antenatal checkups, and delay in referrals from peripheral hospitals.

Despite many advances in the neonatal care, access to skilled health care resources is limited. Equipped facility, quality antenatal care, skilled health care providers, timely referral, strong link between communities and health facility, and prompt intervention at the health facilities can reduce neonatal mortality rate.

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