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Morbidity among the Referral Babies to Higher Centre from SNCU of Government Tertiary Care Maternity Hospital

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Abstract: ***Objective: To study the morbidity profile among the babies shifted from SNCU to tertiary care neonatal hospital. Method: Retrospective study was carried out at the special newborn care unit (SNCU) of modern Government Maternity hospital, Hyderabd, admitted in the period between January to June 2018. This is only inborn unit. Data was collected from SNCU software. Results: Out of 1572 newborn were admitted in SNCU 358/22.8%) were shifted to tertiary care hospital for further management after stabilization. Single diagnosis for the referred babies was 84% ELBW, 70% Congenital malformation, 49.69% of RDs. 35.7% of prematurity, 30% of HIE, 34% of prematurity,30% hypoglycemia, 29.54% of birth asphyxia, 29.16% of neonatal sepsis, 17.9%LBW. Conclusion: More number of babies were shifted from this tertiary care government maternity hospital as more number of high risk deliveries will be conducted. Hence some SNCUs should be upgraded to care high risk babies and the maternal care should be improved.***

Keywords: Prematurity birth asphyxia, respiratory distress, congenital malformation

1. Introduction

There is declining trend in the perinatal mortality in India. According to 2014 report, the national PMR is 28/1000. It varies in different states and rural and urban India (4) three major causes of neonatal deaths are complications from preterm birth (35%), infections (33%), birth asphyxia (20%) (4) Maternal factors resulting in pregnancies, maternal under nutrition, poor socio- economic status, Iron deficiency anemia, other micro nutrient deficiencies, inter pregnancy intervals, lack of antenatal care, maternal infection, pre - eclampsia, type -2 diabetes. Perinatal mortality and morbidity indirectly reflects the quality and quantity of maternal and neonatal health services (2).

Documentation of morbidity and mortality data is very important and beneficial for health care provider, investigators, researchers, and decision makers to design intervention for prevention and treatment and hence improving the quality of care (9). Government of India's strategy of having special newborn care units(SNCU's) at district level to reduce the fatality among sick newborn is very positive measure(8).

There are many studies on the morbidity and mortality on inborn and out born babies but not much information about the referral babies morbidity which are very sick babies. Such babies require intensive care management and cannot be managed in existing SNCUs.

This study was done to study the morbidity among the referral babies.

2. Material and Methods

This hospital based retrospective study was carried out in the SNCU of Modern Government Maternity Hospital, Petlaburz, Hyderabad for a period from January 2018 to June 2018.

Data was collected from the SNCU software and analyzed.

Inclusion Criteria

Neonates referred from SNCU to higher centre for tertiary level care are analyzed for the disease morbidity.

Exclusion Criteria

All the babies admitted and treated in SNCU.

3. Results

Approximately 16000 deliveries are conducted per year in the hospital which conduct 60-70 % high risk deliveries, being tertiary care government maternity hospital. There is one SNCU for catering all the high risk newborn delivered in the hospital. It admits only inborn babies.

Total number of deliveries conducted were 8749, 1572 (17.96%) were shifted to SNCU. Out of 1572 babies admitted in SNCU, 358 babies (22.8%) were shifted to higher centre.

Table I- Sex Distribution

Gender	Number of babies	Percentage
Male	212	59.05%
Female	146	40.66%)
Total	358	100%

Table II: Morbidity profile of newborn babies referred to higher centre

SL.No.	Primary Diagnosis	N- 358	Percentage
1	Respiratoy Distress of newborn	82	22%
2	Birth Asphyxia	65	18%
3	LBW(1000-2499)	48	13.40%
4	ELBW(999 gm or less)	32	89%
5	Any other diagnosis	29	8.10%
6	HIE	20	5.5%
7	MAS	19	5.30%
8	Congenital malformation	19	5.30%

9	Prematurity	13	3.63%
10	Neonatal sepsis	7	1.9%
11	TTNB	7	1.9%
12	Jaundice	6	1.6%
13	Extreme prematurity	3	1.83%
14	Neonatal hypoglycemia	3	0.83%
15	Apnea of prematurity	2	0.55%
16	Convulsion	1	0.27%
17	Hemolytic disease of newborn	1	0.27%
18	Acute renal failure	1	0.27%
19	Intra ventricular hemorrhage	1	0.27%

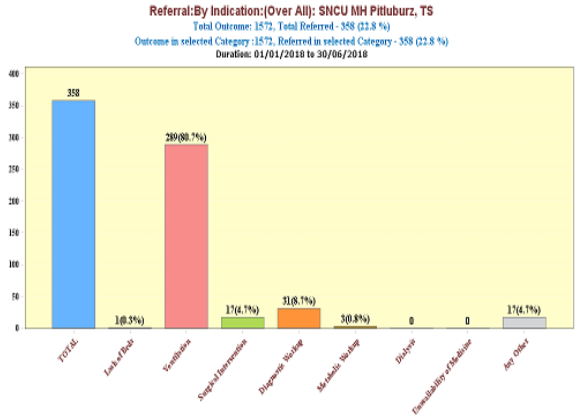

Table III: Referral By indication (Overall)

Table IV: Final Diagnosis profile (Single Diagnosis) and babies referred from them

S.No.	Disease	Admitted in SNCU (in Numbers)	Referred
1	ELBW	38	32 (84.2%)
2	Congenital Malformation	27	19(70%)
3	RDS	165	82 (49.69%)
4	HIE	56	20(35.4)
5	Prematurity	38	13(34%)
6	Neonatal hypoglycemia	10	3(30%)
7	Birth asphyxia	220	65(29.54%)
8	Neonatal sepsis	24	7 (29.54%)
9	Any other	105	29(27.6%)
10	LBW	268	48(17.9%)
11	Neonatal convulsions	9	1(11%)
12	MAS	208	19(9.13%)
13	Transient Tachypnea of new born	197	7(3.5%)
14	Neonatal Jaundice	193	6(3.10%)

4. Discussion

1572 babies were admitted in SNCU, 358 (22.8%) babies were shifted to tertiary care hospital for further management after stabilization. Among shifted babies 59.05% were male, 40.66% were female and one baby was ambiguous. 22.8% babies were shifted to higher centre, same as 22%admitted from government hospital kailas Chandra Agarwal et al (5), More compared to Ravi Kumar et al (3) 3.4%. 7% overall referral rate from SNCUs (8)

Table II shows the morbidity pattern among the referred babies. Commonest cause for shift among the referred babies (M=358) being respiratory distress (22%), birth asphyxia(18%), LBW(13.4%), ELBW(8.9%), any other (8.10%), HIE (5.5%), MAS(5.3%), congenital malformation (5.3%), Prematurity (3.63%) Neonatal sepsis(1.9%). Other study (7) shows that neonates were referred due to perinatal asphyxia, sepsis, prematurity, LBW, Jaundice.

Table III shows referral by overall indication. Almost 80% babies were shifted for ventilation 4.7% for surgical intervention, 8.7% for diagnostic work up and any other 4.7% while overall referred from all SNCUs(8) 41% ventilation, 14% surgical 29% diagnostic workup, 2% metabolic work up, 1.1% dialysis, 13% any other.

Table IV shows the final diagnosis profile (single diagnosis) and babies referred from them 84.2% of ELBW. 70% of congenital malformation, 49.69% of RDs, 35.7% of HIE, 34% of prematurity, 30% of hypoglycemia, 29.54% of birth asphyxia, 29.16% of neonatal sepsis, 17.9% of LBW were shifted to higher centre 84.2% of ELBW were shifted as such babies cannot be managed in SNCU, congenital malformation who require further work up and management, RDS who require ventilator care, resistant hypoglycemia, prematurity with complication, severe sepsis, LBW with complications were referred to higher centre

The referral rate in our study is 22.8% and mortality rate is 1.84% other SNCUs it is 7% to 10% respectively. In our hospital the referral rate is more and mortality is less because the government neonatal tertiary care hospital is available at 5Km distance and most attendants want treatment there. Babies who require tertiary level neonatal care will be referred immediately after stabilization.

This is referral government maternity hospital where almost 60-70% of high risk deliveries will be conducted. Many mothers will be referred in advanced stage of labour or pregnancy complication, thus adversely affecting the neonatal outcome. There is lack of capacity in managing serious illnesses in the SNCU. Few SNCU's specially which are attached to the teaching hospitals should be upgraded. It should be more equipped, qualified neonatologist, trained nurses should be available to deal with the inborn babies who require tertiary level care. This will reduce the referral rate.

To improve the perinatal morbidity and mortality we have to strengthen the work of ASHA worker, ANMs, primary health centre who can identify the high risk cases and timely refer to higher center. This will help to reduce the morbidity and perinatal mortality. Feedback to the centre from where mother was referred, training and retaining of the staff will improve the quality of work.

The drawback of the study is we could not do the follow up and final outcome of all the babies referred to higher centre. So we don't know how much is the mortality rate.

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