ANALYSIS OF NEWBORNS DELIVERED IN STATE ZANANA HOSPITAL, JAIPUR, RAJASTHAN, YEAR 1978

by

USHA ACHARYA*
S. SAXENA**
D. SARIN***
and
N. K. RUNGTA†

Introduction

The science of neonatology specially in the developing countries is still in its infancy. There is much to be done yet for a meaningful antenatal care one ought to know the prevalence of the disease spectrum in the mother and the neonate, so that proper advice can be imparted. With this point in view a perspective study of all newborns born at State Zanana Hospital, Jaipur was undertaken. This hospital attached to the medical college, is the largest in whole of Rajasthan State. The study was conducted to know the nature of delivery, disease, their variation and to get an idea of yearly morbidity and mortality (Clinical Study) in neonates till the time of their stay at State Zanana Hospital, Jaipur.

Material and Methods

This study includes analysis of all newborns delivered in the year 1978. In all cases diagnosis was made on clinical and laboratory examination. Postmortem was refused inspite of repeated efforts. A planned detailed proforma was prepared.

All high-risk newborns were admitted in nursery, while the healthy newborns and newborns weighing more than 2000 gms. were kept with the mothers.

Observations

The total number of deliveries were 7790. Out of these, 7151 were livebirths and 639 were still births.

There was significant drop in total number of deliveries from the month of February to May. Then there was a gradual increase in number. Maximum deliveries took place in November (883) and minimum in the month of May (501), average mean of deliveries per month was 650. Out of 7151 live birth, 1535 high-risk newborns were admitted in special care unit. There was no significant difference in male and female admission.

Table I shows primary indications for admission in special care nursery. All high-risk newborns were admitted here. There were in all 1433, with a male female ratio of 7.4:6.9. Out of these, 33.5 per cent were preterm, with an average mean of 40 admission per month. Other indications for admissions were caesarean section, forceps deliveries, breech presentation, compound presentation, twin

*Lecturer.
**Professor and Head.
***P.G. Student.
†P.G. Student.
From the Department of Pediatrics, S.M.S. Medical College and State Zanana Hospital, Jaipur (Rajasthan).
Accepted for publication on 11-11-80.

TABLE I

Primary Indication for Admission in Special Care Unit

Months	Preterm	Forceps	LSCS	Breech	Birth anoxia	Twins	Rh Incom-patibility	Compound presentation
January	43	43	35	16	0	2	—	—
February	34	30	24	9	3	10	—	—
March	34	31	26	15	0	2	0	0
April	22	16	40	10	8	2	1	3
May	38	27	23	9	9	4	2	0
June	22	26	20	7	6	4	1	0
July	43	29	19	6	12	6	2	2
August	56	21	25	19	14	4	1	3
September	59	34	33	22	14	6	2	1
October	35	26	24	24	20	6	2	1
November	54	36	32	26	22	6	2	2
December	40	34	26	21	21	10	4	2
Total	480	353	327	184	129	62	17	4
Percentage	33.5	24.63	22.82	12.84	9.00	4.33	1.19	8

TABLE II

Morbidity Statistics of Rooming in and Neonates of Special Care Unit

Disease	Jan.	Feb.	Mar.	Apr.	May	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Conjunctivitis	25	24	38	16	30	19	18	16	32	26	34	14	292
Diarrhoea	21	21	30	20	33	18	21	10	23	37	21	13	268
U R I	7	23	18	3	18	17	12	5	6	9	28	13	159
Oral Thrush	4	8	10	8	8	24	8	11	8	19	18	18	144
Cord Sepsis	4	0	21	5	4	10	3	11	18	16	15	2	109
Jaundice	11	10	6	8	6	4	5	13	12	11	12	5	103
Neonatal Septicemia	13	8	11	10	16	6	4	15	14	20	16	16	149
Resp. Distress Syndrome	8	5	9	—	8	0	0	0	8	5	4	11	58
Pyoderma	6	0	5	—	6	10	3	8	0	2	0	0	40
Rash	0	0	3	2	0	2	4	3	9	7	5	0	35
Birth Injury	1	3	4	1	0	0	4	—	5	3	9	6	36
Aspiration Pneumonitis	4	0	2	—	—	3	1	2	0	5	3	2	22
Cyanotic CHD	0	—	—	2	—	—	—	—	1	0	0	1	4
Hemolytic Disease	1	—	—	1	—	—	—	—	—	2	0	1	5
Gangrene of Toe & Nose	0	—	—	—	—	—	—	—	—	—	3	1	4
Toxic Paralytic Ileus	1	—	6	—	1	—	—	—	—	—	—	1	9

delivery, babies born of Rh negative mothers and birth asphyxia.

Table II describes the causes of neonatal morbidity in decreasing frequency. All newborns, either lying in wards or kept in special care unit were included, total morbidity was 15.7 per cent of the total liveborns. The incidence of diarhrhoea and conjunctivitis was the highest, 20.09 per cent and 21.5 per cent respectively. No seasonal variation was noted for any disease except for pyoderma which was maximum from March to June. Four cases had nasal gangrene and all were preterm, gangrene proved fatal in all these 4 cases. This might be because of poor resistance of preterm newborns, in whom repeated nasal suction resulted in disruption of nasal mucosa and superadded infection. Hyperbilirubinemia was noted in 7.71 per cent, out of this 0.3 per cent i.e. 5 cases were of Rh hemolytic disease of newborn. Exchange transfusion was done in these cases, and only 1 out of 5 cases survied.

Table III shows incidence of various diseases and their mortality in newborn period. Preterms comprised of 31.5 per cent of total neonatal mortality, while lowbirth weight newborns contributed 15 per cent of total deaths. Other common causes of neonatal mortality were neonatal septicemia, birth asphyxia, respiratory distress syndrome and sclerema. Respiratory distress syndrome was present in 58 cases constituting 4.1 per cent of total morbidity. Out of the total cases of Respiratory Distress Syndrome 71.5 per cent proved fatal.

Less common causes of neonatal deaths were Rh. hemolytic disease of newborn, hyperbilirubinemia and cot deaths in decreasing order of frequency. Total deaths in the year 1978 were 598 with an average mean of 49.83 deaths per months.

TABLE III

Mortality Statistic 1978

Cause of Death	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Total	Mean
Prematurity	11	13	15	08	12	07	28	20	17	13	50	17	211	17.58
Neonatal septicemia	12	05	02	04	11	02	04	14	13	20	13	09	109	9.08
Asphyxia neonatorum	03	04	03	07	01	09	13	18	09	12	08	03	90	7.5
Small for date	00	00	03	00	00	00	05	09	17	18	01	05	58	8.28
Respiratory Distress Syndrome	04	01	04	06	05	17	08	01	01	02	00	01	50	4.54
Sclerema	03	04	02	01	05	05	04	01	05	05	00	00	35	3.5
Intracranial injury	01	00	00	02	02	00	02	03	02	00	00	00	12	2.0
Hemolytic disease	00	00	00	02	03	00	00	00	02	00	00	00	7	0.58
Neonatal jaundice	00	00	02	00	02	01	01	00	01	00	00	00	7	0.58
Cot Death	00	00	00	00	00	00	01	02	00	02	00	02	7	0.58

Discussion

High neonatal mortality rate is well known, especially in developing countries. Common causes of neonatal mortality in our study were prematurity, neonatal septicemia, birth asphyxia, respiratory distress syndrome and sclerema. They were same as discribed by Onkar Nath Bhakoo *et al* (1975) and Gupta *S. et al* (1972).

High neonatal deaths due to infection has been described by many investigators in India. The incidence of deaths due to neonatal septicemia in our study was 17.65 per cent. This compares with 13.6 per cent incidence noted by Onkar Nath (1975) and Kamal *et al* (1974). It was noted that majority of the severe infections occurred among the neonate kept in special care unit while most of the superficial infection occurred amongst neonates kept lying in wards. The high incidence of severe infections amongst the babies admitted to special care unit is possibly related to the fact that sizeable number of these babies are premature and thus have lower resistance to infection. The fact that infection rate is also related to longer stay in hospital also high-lights the factors of nursery cross infections as we are not having separate septic nursery.

In the present study, 15.05 per cent deaths were from asphyxia neonatorum; this incidence is higher as compared to 6.3 per cent reported from south (Kapur, *et al,* 1970) and 9.8 per cent reported by Onkar Nath *et al* (1975). This high incidence is possibly related to greater incidence of high-risk deliveries, this being a referral hospital. Most of the cases of severe diarrhoeas seen in our unit occurred during October and May and were due to E-coli infections.

Incidence of respiratory distress syndrome in newborn in North Western part of India has been reported by few workers only. Our incidence of respiratory distress sydrome was 4.94 per cent which is in accordance with Onkar Nath *et al* (1975), but lower than that reported from western literature (Barnett and Einborn, 1972).

However, our survival rate of 28.5 per cent is better than 10.3 per cent reported by Surainder, *et al* 1971. This finding is same as reported in the study of Onkar Nath *et al* (1975). Incidence of hyaline membrane disease reported from other centres of our country varies between 5.6 to 9.2 per cent (Zakia, S. *et al* 1973).

Prematurity as a cause of death in neonatal period is well known. In our series 33.3 per cent deaths were from prematurity. This is in accordance with Onkar Nath *et al* (1975), Lotliker *et al* (1974), Verma *et al* (1976).

Sclerema is another common cause of death in neonatal period (Verma *et al* 1976). In our study 5.8 per cent deaths were from sclerema.

Conclusion

From this study we conclude that prematurity, neonatal infections, respiratory distress syndrome, sclerema, hyperbilirubinemia, cerebral insults, precipitated by difficult labour and still births are the various causative factors responsible for the perinatal deaths. It is therefore, postulated that in order to lower the incidence of perinatal deaths, better Mother Child Health Services should be provided.

Acknowledgement

We thank the Superintendent, State Zanana Hospital Dr. Pushpa Gupta for kindly allowing us to use the hospital records and to publish the article.

References

1. Barnett, M. L. and Einborn, A. H.: Pediatrics. Appleton Century Crofts, New York, P. 1961, 1972.
2. Gupta, S. Choparamk and Pramanic, K. A.: Ind. Ped. 9: 586, 1972.
3. Loltiker, K., Kandoth, P., Joshi, M. and Bhagal, M.: Ind. Ped. 11: 301, 1974.
4. Kapur, S., Mammen, K. G., Mathew, K. C. and Kumar, G.: Ind. Ped. 7: 276, 1970.
5. Onkarnath, B., Narang, A., Kulkarni, K. N., Patil, A. S. and Walic, B. S.: Ind. Ped. 12: 6: 443, 1975.
6. Surainder, Y. A., Karan, S., Damoder Rai, A. and Narar, S.: Ind. Ped. 8: 758, 1971.
7. Verma, K. C. and Dhar, G.: Ind. Ped. 13: 439, 1976.
8. Zakia, S., Talib, V. H., Kshirsagar, V. H., Patil, S. D., Deshpande, M. S. and Sharma, K. P.: Ind. Ped. 10: 701, 1973.