ORIGINAL ARTICLE

PATTERN OF NEONATAL ADMISSION AT THE CHILDREN'S HOSPITAL AND THE INSTITUTE OF CHILD HEALTH, MULTAN

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Background: Neonatology is a rapidly growing paediatric sub-specialty all over the world. Neonatal disease pattern changes from time to time and place. Analyzing the neonatal admission pattern helps the policy makers to make the better strategies and health care givers to serve better. **Method:** This was a descriptive study. The study data was collected of the patient admitted in neonatal unit of Children Hospital Complex and Institute of Child Health, Multan, Pakistan from 1st January 2010 to 31st December 2010. The data of all the admitted neonates was analysed according to their causes of admission in whole one year whether admitted through emergency department or OPD clinic. **Result:** Total numbers of neonatal admissions were 3,560. Birth asphyxia was found to be major cause of admission, 1,230 patients (34.5%). Among infections, sepsis was found in as a whole in 1,009 (28.3%) of admission, pneumonia in 170 (4.7%) and meningitis in 30 (0.8%). Out of 3,560 patients admitted, 2,550 were discharged after improvement, 290 died, and 720 left against medical advice (LAMA). **Conclusion**: Birth asphyxia, sepsis and prematurity are the main reasons for admission in neonatal age. By paying good attention to perinatal services, we can reduce morbidity and mortality in neonates.
Keywords: Neonates, Birth asphyxia, Sepsis

INTRODUCTION

Physicians interested in newborn care were present in 19th century but most were obstetricians. In the mid 20th century, responsibility of care for these babies passed from the obstetricians to pediatricians.[1] The terms, neonatologist and neonatology were introduced in 1960.Since that time an increasing number of paediatricians devoted themselves to the practice of neonatology, which is now a rapidly developing paediatric sub-speciality all over the world. The neonatal disease pattern is different from place to place and changes over time. It is believed that majority of the causes of neonatal morbidity are preventable. Various neonatal units of the country keep on analysing and reporting their data in journals from time to time. This helps in creating an awareness about neonatal problems which helps planners and policy makers in making decisions.

We analysed neonatal admission data of the year 2010 from 1st January, 2010 to 31st Dec, 2010 with a view to have an idea of the disease pattern. We believed that this would help us improve our neonatal services by better resource allocation.

The objective was to have an idea of the disease pattern and disease burden. Its aim was to improve the neonatal services by creating awareness among the policy makers. We believed that such awareness would help in the making of such policies in our health system that would help in reducing the burden of birth asphyxia, neonatal sepsis and respiratory distress syndrome of prematurity.[2]

MATERIAL AND METHODS

This was a descriptive study carried out at Children Hospital and Institute of Child Health, Multan. The data of all the admitted neonates was analysed according to their causes of admission in whole one year from January 1, 2010 to December 31, 2010 whether admitted through emergency department or OPD clinic.

Diagnosis of the patients was made mainly on the basis of clinical grounds and also with the help of necessary available investigations.

Following terminologies were used in defining data:

Preterm: Live born neonate delivered before 37 weeks from first day of last menstrual period (LMP).

Low birth weight: Babies weighing less than 2.5 Kg at birth.

The diagnosis of birth asphyxia was made mainly on the basis of clinical data collected through history and clinical examination and relevant investigations, i.e., ABG's, Cranial USG, LFT, Renal function tests and urine examination etc. The diagnosis of neonatal sepsis was made on the basis of history, clinical examination and also with the help of laboratory investigation, i.e., blood culture, CBC with platelet count, C-reactive protein, Toxic granulation, CSF and Urine examination and culture etc. Respiratory Distress Syndrome (RDS) was diagnosed on clinical history and examination and also with the help of X-ray chest and ABG's. Among centrally cyanosed babies, diagnosis was made on persistently low Pao_2 and echo-cardiography. Haemorrhagic disease of newborn was suspected in apparently healthy, bleeding newborns and confirmed by increased in prothrombin time and activated partial thromboplastin time.

RESULTS

Total neonatal admissions were 3,560. All of them were referred patients. Birth asphyxia was found in 1,230 (34.5%) patients, and was the major cause of admission. Among infections, sepsis was found in 1,009 (28.3%) admission, pneumonia in 170 (4.7%), and meningitis in

30 (0.8%). One hundred and thirty-two (3.7%) neonates were admitted with prematurity and respiratory distress syndrome was found in 371 (10.4%). (Table-1).

Out of 3,560 admitted patients, 2,550 were discharged after improvement, 290 died and 720 left against medical advice. Sepsis was found in 90 (8.9%) and was the major cause of mortality, followed by birth asphyxia in 65 (5.8%) and prematurity with RDS in 33 (8.8%) patients. (Table-2).

Table-1: Causes of neonatal admission

Disease	Admissions	%
Birth asphyxia	1,230	34.5
Sepsis	1,009	28.3
Preterm RDS	371	10.4
Jaundice	235	6.60
Pneumonia	170	4.7
Prematurity	132	3.7
Meconium aspiration syndrome.	74	2.07
Respiratory distress syndrome	46	1.2
Pulmonary hypertention	46	1.29
Congenital heart diseases	36	1.01
Meningitis	30	0.84
Tetanus neonatorum	28	0.7
Necrotizing enterocolitis	22	0.61
Hemorrhagic disease of newborn	18	0.50
Tracheoesophageal fistula	15	0.42
Miscellaneous	98	3.16
TOTAL	**3,560**	**100**

Table-2: Outcome of neonatal diseases

Name of disease	Admissions	Discharge [n(%)]	Expired [n(%)]	LAMA [n(%)]
Birth asphyxia	1,230	1040 (84.5)	65 (5.8)	125 (10.1)
Sepsis	1,009	332 (67.2)	90 (8.9)	242 (23.9)
Preterm RDS	371	125 (67.2)	33 (8.8)	92 (24)
Jaundice	235	45 (80.9)	12 (5.1)	33 (14)
Pneumonia	170	45 (73.6)	7 (4.1)	38 (22.3)
Prematurity	132	44 (66.8)	13 (9.8)	31 (23.4)
Meconium aspiration syndrome	74	35 (52.8)	9 (12.1)	26 (35.1)
Respiratory distress syndrome	46	20 (56.6)	7 (15.2)	13 (28.2)
Pulmonary hypertension	46	17 (62.3)	6 (13)	11 (23.7)
Congenital heart disease	36	28 (22.3)	9 (25)	19 (52.7)
Meningitis	30	16 (56.8)	2 (6.6)	14 (46.6)
Tetanus Neonatorum	28	18 (45.8)	8 (28.5)	10 (35.7)
Necrotising enterocolitis	22	13 (40.9)	3 (13.6)	10 (45.5)
Hemorrhagic disease of newborn	18	8 (55.6)	2 (11.1)	6 (33.3)
Tracheoesophageal Fistula	15	13 (13.4)	6 (40)	7 (46.6)
Miscellaneous	98	61 (36.9)	18 (18.3)	43 (43.8)
Total	**3,560**	**2550 (78.6)**	**290 (8.1)**	**720 (20.3)**

DISCUSSION

This study shows that birth asphyxia, neonatal sepsis and problems related to prematurity are the major reasons for admissions in our neonatal unit. In this study 34.5% of the neonates were admitted with the diagnosis of birth asphyxia, while it was 18.8% from Karachi[3] and 20% from Dhaka[4]. All the babies admitted in our neonatal unit were delivered at home, private or government setup. The common trend seems to be that if the baby does not cry after birth then instead of resuscitation the newborn is urgently transferred to the neonatal unit.[5,6]

Sepsis remains a major cause of neonatal mortality and morbidity especially in developing counties.[7] In our study, sepsis accounted for 28.3% of admission, quite comparable to 28.7% in a study at Peshawar.[8] Maternal infections, increased number of deliveries at home by traditional birth attendants (TBAs) under unhygienic conditions, prematurity, host immune response and unhygienic neonatal care are some of the important reasons for infection in neonates.[9]

Prematurity with its associated problems, like respiratory distress syndrome, sepsis and necrotising enterocolitis (NEC) was the 3rd most common cause of admission. Prematures are not only the principal contributors to neonatal morbidity and mortality but they are the ones who experience more health problems and consumed more health resources.[10] In our study, as a whole 717 (14.7%) neonates were admitted with prematurity. Major causes of admission in premature were RDS 371 (10.4%), Sepsis 192 (5.3%), low birth weight 132 (3.7%), and NEC 22 (0.6%). Neonatal jaundice was the reason of admission in 235 (6.6%) patient in our setup, while it was 19% in Peshawar[8] and 9.4% in Bangladesh[4]. It holds true that pattern of neonatal disease changes with geographical variation and also from time to time at same place.[11]

In our study, 71.6% babies were discharged with satisfactory improvement after treatment. This indicates increased awareness on part of parents who sought timely admission of their neonates.

Neonatal mortality was 8.14% in our study and 720 (20.2%) of the patients left against medical advice. Neonatal mortality was 25% in a previous study from Lahore[5], and it was 14.8% from Peshawar[8]. Sepsis was found to be the major cause of mortality followed by birth asphyxia and prematurity. The same causes were reported from other studies from Pakistan[12–14] and India[15]. This is an alarming figure requiring attention of healthcare providers. The possible reason may be that some parents were of the view that the child's death was imminent and also because of their domestic reasons. Reporting of neonatal disease pattern from time to time contributes to identify deficiencies and assists health planners and workers to pay their due attention.

CONCLUSION

Birth asphyxia, sepsis and prematurity are still the major reasons for admission in our setup. These causes are preventable and all that is required is to realise the need of better antenatal care in all cases and skilled natal services in high risk pregnancies and proper handling of postnatal problems when they arise. This requires realisation of the problems on the part of healthcare advisers.

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