

Causes of Neonatal Mortality in a Tertiary Care Hospital

MUHAMMAD RASHID AYUB, NABEELA RASHID, KHALID MAQSOOD

ABSTRACT

In this study causes of neonatal mortality were studied in a tertiary care hospital. Out of 4238 neonates admitted in nursery of Fatima memorial hospital from 1st January 2009 to 31st December 2009, 567 died in first 28 days of life. In this study prematurity and sepsis were found to be the major causes of death in neonates accounting for approximately 63% of cases. However birth asphyxia, meconium aspiration syndrome, bronchopneumonia and multiple congenital defects are other causes of death.

Key words: Neonatal mortality, prematurity, birth asphyxia, birth defects

INTRODUCTION

Neonatal death is defined as death in first 28 days of life, of the estimated 130 million infant born each year worldwide¹. Four million die in the first 28 days of life². Three-quarters of neonatal deaths occur in the first week, and more than one-quarter occur in the first 24 hours. Prematurity and its complications cause about 25 percent of neonatal deaths³. Premature babies, especially those born at less than 32 weeks of pregnancy may develop serious complications that can sometimes cause neonatal death. Babies with RDS have immature lungs that lack a protein called surfactant that keeps small air sacs in the lungs from collapsing. Treatment with surfactant has greatly reduced the number of babies who die from RDS. However, about 825 babies a year die in the neonatal period due to RDS⁴. Severe intracranial bleeds often result in brain damage or even death. Some babies develop severe bowel damage and die. Premature babies have immature immune systems and sometimes develop serious infections, such as pneumonia (lung infection), sepsis (blood infection) and meningitis (infection of membranes surrounding the brain and spinal cord). In spite of treatment with antibiotics and antiviral drugs, some babies die. Birth defects cause about 20 percent of neonatal deaths. Babies with birth defects may be premature or full term). Heart defects cause about 25 percent of infant deaths. About 1 in every 125 babies is born with a heart defect. Some neonates die of heart defects including hypoplastic left heart syndrome, transposition of great arteries etc. Other birth defects leading to neonatal death include hypoplastic lungs, diaphragmatic hernia, Anencephaly and chromosomal defects.

Department of Paediatric Medicine, Fatima Memorial Hospital, College of Medicine & Dentistry, Lahore
Correspondence to Dr. Muhammad Rashid Ayub

MATERIALS AND METHODS

This prospective study was carried out from 1st January 2009 to December 31, 2009 to analyze the causes of neonatal mortality in neonates admitted in Fatima Memorial Hospital Shadman, Lahore. All the neonates who were expired within first 28 days of life including both inborn and out born babies admitted in neonatal unit of Fatima Memorial Hospital during the year 2009.

RESULT

In year 2009, 4238 neonates were admitted in various neonatal sections of Fatima Memorial Hospital. Out of which 267 neonates were expired.

Table 1: Percentage of mortality

| Total neonatal admission | Total deaths | %age |
|--------------------------|--------------|-------|
| 4238 | 567 | 13.37 |

Prematurity was cause of death in 174 (30%) of neonates.

Table 2: Causes of death in premature babies

| | |
|-------------------------------|------------|
| Respiratory distress syndrome | 78(44.82%) |
| Sepsis | 57(32.62%) |
| Intraventricular hemorrhage | 8(4.8%) |
| Birth asphyxia | 15(8.6%) |
| Necrotizing enterocolitis | 6(3.5%) |
| Birth defects | 10(5.7%) |

Table 3: Causes of death in full term babies

| | |
|-------------------------------|----------|
| Birth asphyxia | 98(25%) |
| Sepsis | 129(33%) |
| Meconium aspiration syndrome | 47(12%) |
| Multiple Congenital anomalies | 20(5%) |
| Congenital heart disease | 22(5.5%) |
| Tracheoesophageal fistula | 2(0.5%) |
| Omphalocele | 2(0.5%) |
| Potter syndrome | 3(0.76%) |
| Diaphragmatic hernia | 12(3.2%) |
| Bronchopneumonia | 58(15%) |

DISCUSSION

Neonatal death is defined as death in first 28 days of life. Of the estimated 130 million infant born each year worldwide, 4 million die in the first 28 days of life. Three-quarters of neonatal deaths occur in the first week, and more than one-quarter occur in the first 24 hours. Neonatal deaths account for 40% of deaths under the age of 5 years worldwide. Therefore, efforts to achieve the UN Millennium Development Goal 4 of reducing childhood mortality by two-thirds by 2015 are focused on reducing neonatal deaths in high-mortality countries⁵.

Two-thirds of neonatal deaths occur in just 10 countries, mostly in Asia. Pakistan is number three among these countries with a reported neonatal mortality of 49 per 1000 live births⁶. Causes of neonatal death world wide are infection (30%) preterm birth (28%), birth asphyxia (23%)⁷. Causes of death vary by country and with availability of quality of health care. Data available on neonatal death in Pakistan come primarily from hospital studies which have a selective referral bias.

A population based cohort study in urban Pakistan reported that almost 75% of neonatal deaths were attributed to three final causes: immaturity 26% birth asphyxia 26% infection 23% and Congenital anomalies accounted for 8%⁶ deaths⁸.

In current study prematurity and sepsis accounted for main cause of death. As Fatima Memorial Hospital is a tertiary care centre and has significant pre and postnatal referral for neonatology, these figures reflect the situation in a tertiary care center. The second important cause identified was birth asphyxia. As main cause of death including preterm delivery,

birth asphyxia and infection are all avoidable. So better antenatal care, skilled birth attendants and perinatal care of infection can significantly reduce neonatal mortality

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