

## Neonatal status in Nepal Medical College Teaching Hospital

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### ABSTRACT

The objective of this study was to know the state of newborns in Nepal Medical College Teaching Hospital. This was a retrospective study of newborns delivered in Nepal Medical College Teaching Hospital from mid April 2008 to mid April 2009. There were 793 births with male: female ratio being 1.08:1. Almost 90 % were term babies and 6.9% preterm. Low birth weight comprised of 9.1%. Seventy five babies were admitted in neonatal unit during that period. Neonatal sepsis (33.7%), neonatal hyperbilirubinemia (30.7%), prematurity (12.0%) were major cause of admission to neonatal unit. Mortality occurred in 3 of these babies and all of them were preterm babies with gestation 29-31 weeks. Therefore it is very important to upgrade our level II care neonatal unit to level III care to improve the neonatal care.

**Keywords:** newborn, low birth weight, sepsis.

### INTRODUCTION

In Nepal, infant and neonatal mortality is very high. Infant mortality rate and neonatal mortality rate is 48 and 33 per 1000 live births.<sup>1</sup> Infant mortality rate has declined from 113 in 1987 to 48 in 2006.<sup>1</sup> Sixty nine percent of infant deaths occur during first month of life.<sup>1</sup> About 90% of women still deliver at home and safe delivery kits are used only in 9% of these deliveries.<sup>2</sup> Neonatal indices must be improved to significantly improve infant and child health status in Nepal. Nepal Medical College Teaching Hospital is one of the hospitals in Kathmandu Valley. It has capacity of 700 beds and receives patients from Kathmandu and adjacent districts. It provides level II neonatal care to both inborn and outside babies. Various studies have been done in the past in this institution to find out the percentage of low birth weight, preterm and post term deliveries.<sup>3,4</sup> This study was undertaken to know the state of newborn in Nepal Medical College Teaching Hospital.

### MATERIALS AND METHODS

This was a retrospective study done at Nepal Medical College Teaching Hospital. All babies delivered from 1 Baishakh 2065 (14 April 2008) to 30 Chaitra 2065 (13 April 2009) were taken into consideration. Cases admitted in the neonatal unit during the same period were also studied. The data were collected from the records of the delivery room and the neonatal unit. Total number of births, birth weight, gestational age, type of delivery and neonatal admissions were noted.

### RESULTS

There were total of 793 births including 8 sets of twins during the study period. Male were 412 (52.0%) and female 381(48.0%) (Fig.1). Majority of the babies were term (89.4%). Preterm and post term were 6.9% and 3.7% respectively (Fig.2). Appropriate for date babies were 87.3%. Low birth weight consisted of 9.1% and large for

date were 3.6%. Vaginal delivery occurred in 80.6% followed by lower segment caesarean section (19.2%). There were 14 still births during the study period.

During the same period, 227 babies were admitted in the neonatal unit. Out of that, 152 babies were babies born by lower segment caesarean section kept in the neonatal unit for observation till their mother remain in the post operative ward. So actual number of admission in the neonatal unit was 75. Out of 75, neonatal sepsis was seen in 26 babies (34.7%) followed by neonatal hyperbilirubinemia in 23 (30.7%). ABO incompatibility, Rh incompatibility, hemolytic jaundice, exaggerated physiological jaundice were causes of neonatal hyperbilirubinemia in these cases. Prematurity alone was seen in 9 (12.0%) babies. There were 3 cases each of skin infection and umbilical infection (4.0% each). Birth asphyxia, meconium aspiration syndrome, congenital pneumonia and intrauterine growth retardation was seen in 2 (2.6%) cases each (Table 1). There were three mortality during this period which consisted of 4.0 % of total admission. All three cases were premature babies born between 29 to 31 weeks of gestation. Eight cases were referred to other centers having better care.

**Table-1:** Cases admitted in neonatal unit

Diagnosis	n. (%)
Neonatal sepsis	26 (34.67)
Neonatal hyperbilirubinemia	23 (30.67)
Prematurity	9 (12)
Skin infection	3 (4)
Umbilical infection	3 (4)
Birth asphyxia	2 (2.67)
Meconium aspiration syndrome	2 (2.67)
Intrauterine growth retardation	2 (2.67)
Others	5 (6.67)
Total	75 (100)

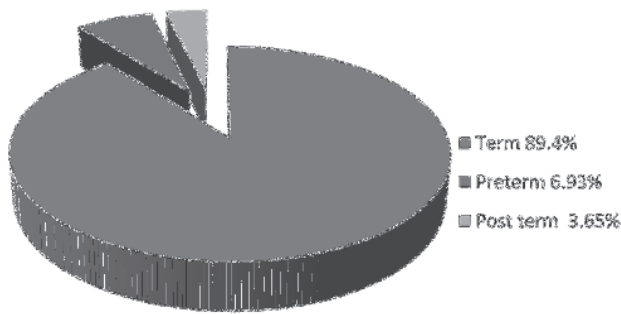


Fig. 1. Distribution of newborns according to gestation

**DISCUSSION**

This study was carried out to know the status of newborn in Nepal Medical College Teaching Hospital. Male slightly outnumbered female (52.0% vs 48.0%). Most of the babies (89.4%) were term. This was comparable to the study done by Gurubacharya *et al* in a study done at College of Medical Sciences, Chitwan which showed term babies in 80.0%.<sup>5</sup> Percentages of preterm babies and post term babies were 6.9% and 3.6% respectively. Previous study done in the same institution also reported percentage of post term babies to be 4.6%.<sup>4</sup> Appropriate for gestational age babies comprised of 87.3%.

Low birth weight babies constituted 9.1%. Sreeramareddy *et al*,<sup>6</sup>Gurubacharya *et al*,<sup>7</sup>Kayastha *et al*<sup>3</sup> and Ojha *et al*<sup>8</sup> reported percentage of low birth weight in various hospitals in Nepal to be 8.5%, 9.0%, 11.9% and 12.7% respectively. A study done by Kapoor *et al* in Haryana, India also reported percentage of low birth weight to be 8.8%.<sup>9</sup> However this finding was much lower as compared to the other studies done in other South East Asian countries which showed low birth weight in 34.4%<sup>10</sup> and 21.3%.<sup>11</sup> Mother and Infant Research Activity (MIRA) in their study done in different hospitals in Nepal in 1998 reported prevalence of low birth weight to be 27.2%.<sup>12</sup> This could be attributed to better maternal care due to various programmes being conducted in the country over the years. Low birth weight is one of the important risk factors for early neonatal deaths. A survey carried out by Geetha *et al* in Nepal identified birth asphyxia, low birth weight and infection as most common causes of perinatal deaths.<sup>13</sup> Various maternal parameters are identified as risk factors for low birth weight. Low maternal weight, poor obstetric history, lack of prenatal care, clinical anemia, hypertension in pregnancy are identified as main risk factors for low birth weight.<sup>14,15</sup>

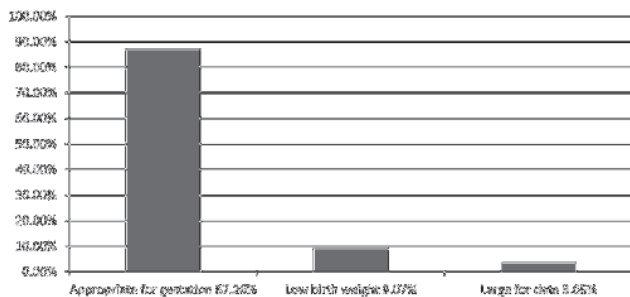


Fig. 2. Distribution of newborn according to weight

In our study, neonatal sepsis was one of the important causes of admission in neonatal unit (34.7%). This was comparable to the study done in Patan Hospital by Ansari *et al* in which sepsis was seen in 28.0% of total admission.<sup>16</sup> However a study by Gurubacharya *et al* reported a lower percentage of (17.0%) sepsis in their study.<sup>5</sup>

Thus, good and regular antenatal care, proper monitoring and timely intervention during labour and better and improved neonatal care are all essential for improving neonatal health. As neonatal sepsis is one of the important causes of admission in neonatal unit, strict aseptic precaution must be carried out while handling all newborns. Mortality in preterm babies is very high due to various conditions. Ventilatory support, introduction of techniques like surfactant therapy must be introduced. It is recommended to upgrade our level II care to level III care for management of preterm and sick neonates.

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