



“STUDY OF PATTERN OF MORTALITY AND MORBIDITY IN LATE PRETERM AND TERM NEONATES,,

<b>Dr. Abhishek Kumar</b>	Senior Resident, Department of Pediatrics PMCH Patna.
<b>Dr. Brajesh Kumar</b>	Senior Resident, Department of Pediatrics PMCH Patna.
<b>Dr. Manoj Kumar Singh*</b>	Associate Prof. Department of Pediatrics PMCH Patna. *Corresponding Author

**ABSTRACT**

**Background:** All the inborn late preterm babies have been included in the study. The morbidity and mortality in late preterm neonates is higher than term neonates.

In our study Neonatal convulsions were more common among the late preterm neonates as compare to term group  
**objective:** The study was conducted to compare the early neonatal morbidity and mortality within 7 days of life, in late preterm infants 34-36 wks with those in term neonates 37-41 wks.

**Materials and Methodhs:** This is observational study, carried out at Patna medical college and hospital Patna Bihar, In our study jaundice, septicemia, respiratory distress and hypoglycemia were found as major morbidities, among late preterm the rate was found to be 9%, 7.8%, 7.6% and 6% respectively while in term group the rate was 3.34%, 3.38%, 3.41% and 2.56% respectively. Occurrence of these morbidities among late preterm neonates as compared to term group is at higher aspect.

**Conclusion:** Late preterm neonates are at high risk for morbidity and mortality as compared to term neonates.

**KEYWORDS :** Morbidity, Mortality, Preterm, Term & Neonates

**INTRODUCTION**

Preterm birth is defined as birth of a baby before the end of the 37<sup>th</sup> week (259<sup>th</sup> day) of pregnancy from the first day of the last menstrual period. Infants born between the gestational ages of 34 weeks and 0/7 days through 36 weeks and 6/7 days (239<sup>th</sup>-259<sup>th</sup> day) are called near term or late preterm. Late preterm infants account for about 74% of all preterm births and about 8% of all births globally.

The morbidity and mortality pattern in late preterm infants is higher than term infants (gestational age ≥ 37weeks). The main reason behind that is the relative physiologic and metabolic immaturity, though there is no significant difference in the weight or the size of the two groups. The late preterm infants are at twice to thrice increased risk of morbidities like hypoglycaemia, poor feeding, jaundice, infection and re-admission rates after initial hospital discharge<sup>3</sup>. The infant mortality rate during first year of life for late-preterm infants is on an average four-fold higher than that for term infants<sup>4</sup>. Late preterm neonates have increased risk of mortality and morbidity however, late preterm infants are more likely to develop problems such as respiratory distress, apnea, feeding intolerance, hyperbilirubinemia, hypoglycemia and hypothermia, moreover, the prevalence of these problems may be different in each country.

**MATERIAL AND METHOD**

This is a hospital based prospective observational study, carried out at Patna medical college and hospital patna Bihar, for a duration of 15 months.

**INCLUSION CRITERIA:**

All late preterm neonates (34-< 37 weeks of gestation) which were born at the Obstetrics department of Paediatrics from duration fifteen months have been included.

All term neonates which were born during the study period included as control group.

**EXCLUSION CRITERIA:**

Preterm babies (<34 weeks of gestation) Out born neonates which were admitted in SCNU and still births have been excluded.

**METHOD**

All the inborn late preterm babies have been included in the

study. Selection of late preterm neonates is done by determination of gestational age.

Gestational age is determined by using Naegle's formula, antenatal ultrasound records and by applying Ballard scoring system on newborn.

All infants enrolled in the study were followed up for first seven days of life for any morbidity and mortality, the common morbidity eg. Apnea, hypoglycemia, jaundice, sepsis, perinatal asphyxia, respiratory distress syndrome. The babies were either shifted to NICU or to mother's side based on the baby's condition and was followed up till discharge or death. All the neonates were enrolled on a structured protocol, which included the data on antenatal care, maternal risk factors, mode and place of delivery, birth weight, gestational age, gender, diagnosis, relevant investigations, duration of stay and outcome. The data was recorded on Proforma and analysed using descriptive statistics. Survival was defined as the discharge of a live infant from the hospital. Our study was to evaluate the short term outcomes of late preterm babies in comparison with term babies.

We compared the mortality and morbidity pattern of preterm neonates with the term counter part, the data of term neonates retrieved from hospital record.

**RESULTS**

**Table 01: Comparison of various causes of morbidities between Late Preterm and Term Babies**

Neonatal Morbidities	Late Preterm (Total :N=2602 )(Total :N=2602 )	Term (Total: N= 11770)
Jaundice	234 (9%)	394 (3.34%)
Septicaemia	203 (7.8%)	398 (3.38%)
Respiratory Distress	198 (7.6%)	402 (3.41%)
Birth Asphyxia	155 (5.6%)	235 (2%)
Hypoglycemia	157 (6%)	30 (2.56%)
Feed Intolerance	86 (3.3%)	196 (1.6%)
Neonatal Convulsion	84 (3.22%)	89 (0.75%)
Apnea	79 (3.03%)	54 (0.45%)
NEC	55 (2.11%)	26 (0.22%)
Congenital Malformation	29 (1.11%)	59 (0.5%)

**Table 02: Comparison of Occurrence of Neonatal Convulsion between Late Preterm and Term Babies.**

Neonatal Convulsion	Gestational Maturity		Total
	Late preterm (%)	Term (%)	
Yes	84(3.2)	89(0.76)	173
No	2518(96.8)	11681(99.24)	14199
	2602	11770	14372

$p < 0.000$  (difference is statistically significant)  $RR = 2.74$ ,  $95\%CI = 2.34, 3.20$

In our study Neonatal convulsions were more common among the late preterm neonates as compare to term group.

## DISCUSSION

Out of the total live births, term births (37 weeks /more) were 75.99%, late preterm births were 16.8% and preterm birth below 34 weeks were 7.2%. it indicates that late Preterm constitutes significant proportion of total birth. There is increase in proportion of late preterm neonates similar to study in USA where as the proportion of late preterm babies has been increased from 6.2 % in 1995 to 7.5 % in 2008, these changes are results of early obstetric interventions<sup>5</sup>, for examples early termination of pregnancy in eclampsia, and other maternal and fetal morbidities.

Among the preterm, 69.98% were late preterm and remaining 30% were less than 34 weeks which is almost close to the study in USA in 2005, where late preterm babies constituted 70 % of premature births and 30 % less than 34 weeks. In our study the commonest maternal risk factor was found to be PIH in 25.2% of late preterm neonate followed by preterm premature rupture of membranes in 16.79% of late preterm, similar pattern of maternal risk factors was found in the hospital based prospective study carried out at the pmch patna bihar.

Kramer MS et al<sup>7</sup>, where PIH were present 29.3% of late preterm birth. With reference to the gender, males were more common (57.5%). The preference for the male child in the society and the biological vulnerability of the males to infection. The males were more common (59%) among the admitted late preterm neonates. Araujo, BF, Zatti H et al, found that late preterm were statistically more likely to be subjected to hypoglycemia as compared to term neonates.

## CONCLUSION

This study revealed that late preterm neonates have significantly higher risk of mortality and morbidity compared with term newborns, and jaundice, septicemia, respiratory distress and hypoglycemia were found as major morbidities, among late preterm the rate was found to be 9%, 7.8%, 7.6% and 6% respectively while in term group the rate was 3.34%, 3.38%, 3.41% and 2.56% respectively. Occurrence of these morbidities among late preterm neonates as compared to term group is at higher aspect.

## REFERENCES

- Margreet J Teune, et al, A systematic review for severe morbidity in infants born late preterm. American Journal of Obstetrics & Gynecology. 2011 Oct; 205(4):374. al.
- Loftin RW, Habli M, Snyder CC, Cormier CM, Lewis DE, DeFranco EA, et al. Late Preterm Birth Rev Obstet Gynecol 2010; 3(1):109
- Escobar GJ, Gonzales VM, Armstrong MA, et al. Rehospitalization for neonatal dehydration: a nested case-control study. Arch Paediatr Adolesc Med. 2002;156:155.
- Escobar GJ, Clark RH, Greene JD. Short-term outcomes of infants born at 35 and 36 weeks gestation: we need to ask more questions. Semin Perinatol. 2006;30(1):28-33.
- Watchko JF. Hyperbilirubinemia and bilirubin toxicity in the late preterm infant., Clin Perinatol 2006;33:839-52..
- Mittendorf R, Williams MA, Berkey CS, Lieberman E, Monson RR (1993). "Predictors of human gestational length". American Journal of Obstetrics and Gynecology, 168 (2): 480-484 LMP
- Kramer MS, McLean FH, Boyd ME, et al. The validity of gestational age estimation by menstrual dating in term, pre-term and post-term pregnancies. JAMA 1988;260:3306-8
- Escobar GJ, Clark RH, Greene JD. Short term outcomes of infants born at 35 and 36 wks gestation: we rates of late preterm birth, 1992-2002. Semin

perinatal 2006;30:13

- Araujo BF, Zatti H, madi JM et al. Analysis of neonatal morbidity and mortality in late preterm newborns infants. J paediatr (Rio.J) 2012,88(3): 259-62.