

Original Research

To compare morbidity of late preterm infants with term infants- A clinical study

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ABSTRACT:

Background: The morbidity and mortality pattern in late preterm infants is higher than term infants (gestational age ≥ 37 weeks). The present study compared morbidity of later preterm infants with term infants. **Materials & Methods:** The present study was conducted on 20 late preterm infants and 20 term infants of both genders. In all infants, mode of delivery, APGAR score, hypoglycemia, morbidity, jaundice and sepsis etc. was recorded. **Results:** Mean gestation weeks in group I was 35.6 and in group II was 38.1, mode of delivery was vaginal in 12 in group I and 10 in group II, cesarean in 8 in group I and 10 in group II, APGAR score at 1 minute was 7.31 in group I and 7.78 in group II, at 5 minute was 8.48 in group I and 8.67 in group II. The difference was significant ($P < 0.05$). Hypoglycemia was seen in 4 in group I and 1 in group II, jaundice in 2 in group I and 0 in group II, sepsis 1 in group I and 1 in group II and Respiratory morbidity 1 in group I and 0 in group II. The difference was significant ($P < 0.05$). **Conclusion:** Authors found that late preterm infants were at high risk for respiratory morbidity, jaundice, hypoglycemia and sepsis.

Key words: Jaundice, hypoglycemia, Sepsis.

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INTRODUCTION

The American Academy of Paediatrics (AAP), American College of Obstetrics and Gynaecology (ACOG) and National Center for Health Statistics (NCHS) define late preterm birth as the delivery of an infant from 34 weeks to 36 weeks and 6 days of gestation (i.e., 239 to 259 days after the first day of the LMP). They account for 9.1% of all births and three-quarter of all preterm births.¹

The morbidity and mortality pattern in late preterm infants is higher than term infants (gestational age ≥ 37 weeks).² 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. 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.³

The late preterm group has 2 to 3 fold increased rates for mild to moderate morbidities, such as hypothermia, hypoglycemia, delayed lung fluid clearance and respiratory distress, poor feeding, jaundice, infection, and readmission rates after initial hospital discharge. As the late preterm subgroup accounts for nearly 10% of all births, even a modest increase in any morbidity will have a huge impact on the overall health care resources. Thus, it is not surprising that the absolute number of late preterm infant being admitted to NICUs has been increasing worldwide. Only few studies have been conducted to assess the neonatal morbidity and mortality in late preterm infants. These were done in developed countries and were retrospective in nature.⁴ The present study compared morbidity of later preterm infants with term infants.

MATERIALS & METHODS

The present study was conducted in the department of Pediatrics. It comprised of 20 late preterm infants and 20 term infants of both genders. The study was approved from ethical committee. Parents were informed regarding the study and written consent was obtained.

Das such as age, gender etc. was recorded. In all infants, mode of delivery, APGAR score, hypoglycemia, morbidity, jaundice and sepsis etc. was recorded. Results were subjected to statistical analysis. P value less than 0.05 was considered significant.

RESULTS

Table I Distribution of patients

Gender	Group I (Late Preterm)	Group II (Term)
Number	20	20

Table I shows that both groups had 20 infants each.

Table II Comparison of variables in both groups

Variables (mean)	Group I	Group II	P value
Gestation weeks	35.6	38.1	0.71
Mode of delivery vaginal	12	10	0.12
Cesarean	8	10	
APGAR at 1	7.31	7.78	0.05
APGAR at 5	8.48	8.67	0.04

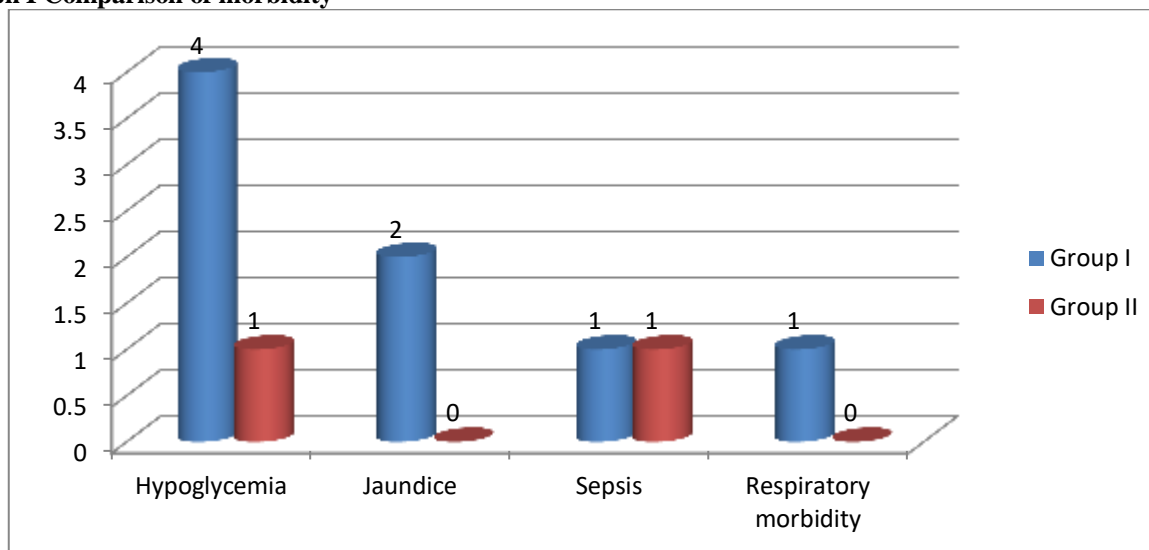
Table II shows that mean gestation weeks in group I was 35.6 and in group II was 38.1, mode of delivery was vaginal in 12 in group I and 10 in group II, cesarean in 8 in group I and 10 in group II, APGAR score at 1 minute was 7.31 in group I and 7.78 in group II, at 5 minute was 8.48 in group I and 8.67 in group II. The difference was significant (P< 0.05).

Table I Comparison of morbidity

Morbidity	Group I	Group II	P value
Hypoglycemia	4	1	0.01
Jaundice	2	0	0.05
Sepsis	1	1	1
Respiratory morbidity	1	0	0.7

Table I, Graph I shows that hypoglycemia was seen in 4 in group I and 1 in group II, jaundice in 2 in group I and 0 in group II, sepsis 1 in group I and 1 in group II and Respiratory morbidity 1 in group I and 0 in group II. The difference was significant (P< 0.05).

Graph I Comparison of morbidity



DISCUSSION

Neonatal period, in spite of its shortness, is considered as most critical phases of life. To achieve MDG-4, a substantial reduction in neonatal deaths will be required. The first step in improving early neonatal survival is to document the number and rate of deaths, and identify their common causes. As the late preterm neonates subgroup accounts for nearly 10% of all births, even a modest increase in any morbidity will have a huge impact on the overall health care resources. Thus, it is not surprising that the absolute number of late preterm infant being admitted to NICUs has been increasing worldwide.⁵ The present study compared morbidity of later preterm infants with term infants.

In this study, both groups had 20 infants each. We found that mean gestation weeks in group I was 35.6 and in group II was 38.1, mode of delivery was vaginal in 12 in group I and 10 in group II, cesarean in 8 in group I and 10 in group II, APGAR score at 1 minute was 7.31 in group I and 7.78 in group II, at 5 minute was 8.48 in group I and 8.67 in group II. Shapiro et al⁶ obtained actual data on pattern of early neonatal morbidities and mortality among late preterm infant. Mean weight in term neonates is more (3.14±0.48) than late preterm neonates (2.35±0.43). Chance of any morbidity was almost 3 times higher in late preterm compared to term neonates. Proportional death rate was more than double in late preterm neonates (13.79%) compared to term neonates (6.25%).

We found that hypoglycemia was seen in 4 in group I and 1 in group II, jaundice in 2 in group I and 0 in group II, sepsis 1 in group I and 1 in group II and Respiratory morbidity 1 in group I and 0 in group II. Yoder et al⁷ in their study included 363 late preterm infants and 2707 term infants. Two hundred fifty seven (70.8 %) of late preterm and 788 (29.1%) of term infants had at least one of the predefined neonatal conditions. Late preterm infants were at significantly higher risk for overall morbidity due to any cause.

Although late preterm infants are the largest subgroup of preterm infants, there has been little research on this group until recently. This is mainly because of labeling them as “near-term”, thus being looked upon as “almost mature,” with little need to be concerned. However, recent research has revealed a contrary trend. While serious morbidities are rare, the late preterm group has 2 to 3 fold increased rates for mild to moderate morbidities, such as hypothermia, hypoglycemia, delayed lung fluid clearance and respiratory distress, poor feeding, jaundice, infection, and readmission rates after initial hospital discharge.⁸ Immature liver glycogenolysis, hormonal dysregulation, and inefficient hepatic glycogenesis and ketogenesis predispose preterms for developing symptomatic hypoglycaemia. Also, late-preterm infants have increased chances of developing

hyperbilirubinaemia because feeding difficulties that predispose them to an increase in enterohepatic circulation, decreased stool frequency, and dehydration. Late-preterm infants are also more vulnerable to develop various respiratory morbidities including transient tachypnea of the newborn, respiratory distress syndrome, pneumonia, and pulmonary hypertension. Most common factor responsible for late preterm birth is preterm labour.⁹

Aggarwal et al¹⁰ found that compared with full-term infants, spontaneous late preterm delivery was independently associated with an increased risk of neonatal morbidity, including respiratory distress syndrome, sepsis, intraventricular hemorrhage, hypoglycaemia, and jaundice requiring phototherapy.

CONCLUSION

Authors found that late preterm infants were at high risk for respiratory morbidity, jaundice, hypoglycemia and sepsis.

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