



A STUDY OF TERM NEONATES WITH JAUNDICE IN A TERTIARY CARE HOSPITAL

Menni Chowdary Babu

Associate professor, Department of Paediatrics, Government medical college, Srikakulam

Seepana Somasekhara Rao

Associate professor, Department of Paediatrics, Government medical college, Srikakulam

Dr Pilli Sandeep

Assistant professor, Department of Paediatrics, Government medical college, Srikakulam

Dr Kurmana Madhavi*

Assistant professor, Department of Paediatrics, Government medical college, Srikakulam. *Corresponding Author

ABSTRACT **Background:** In the newborn period neonatal jaundice most commonly encountered problem in the first week of newborn life, its accounts for up to 60% of term and 80% of preterm babies in the first week of life. The main objective of the study was to study aetiological factors leading to neonatal jaundice. **Material and Methods:** This is a prospective observational study conducted in the neonatal intensive care unit (NICU) and post-natal ward. This study was conducted from March 2022 to August 2022. A total of 720 term neonates were admitted to NICU and post-natal ward during this period. Out of them, 120 newborns were having significant neonatal jaundice (Serum bilirubin > 15 mg/dl) and required intervention. **Results:** The incidence of neonatal hyperbilirubinemia in our study was 16.7%. The main aetiological cause of neonatal jaundice in our study was Physiological jaundice constituted 70 (58.3%), followed by ABO incompatibility constituted 24 (20%), followed by sepsis 12(10%), Rh incompatibility 6(5%), cephalhematoma 4 (3.3%), breastfeeding 4 (3.3%). **Conclusion:** We should investigate all neonates with clinical jaundice to find out the aetiology. Early neonatal jaundice detection, appropriate monitoring, and prompt therapies including phototherapy, blood exchange, and treating the underlying cause will lower neonatal morbidity.

KEYWORDS : neonatal hyperbilirubinemia, physiological jaundice, ABO incompatibility.

INTRODUCTION:

In the newborn period neonatal jaundice most commonly encountered problem in the first week of newborn life, its accounts for up to 60% of term and 80% of preterm babies in the first week of life.¹ The term "jaundice" refers to the newborn's skin and sclera becoming yellowish discoloured as a result of bilirubin accumulation in the mucous membranes and skin. Clinically, it develops when the serum bilirubin level rises to 7 mg/dl in neonates and adults with >2mg/dl.² In most neonatal jaundice cases, no intervention is required. Approximately 5-10 % of them have clinically significant neonatal jaundice (Serum bilirubin >15mg/dl) required phototherapy intervention.³

Kernicterus or bilirubin encephalopathy, a preventable neurological syndrome with undesirable side effects, is caused by unconjugated bilirubin deposition in the cortical nuclei and brain stem.⁴ Kernicterus is observed in one-third of the neonates with a bilirubin level of 25–30 mg/dL who have not undergone the treatment.

All healthy newborns are at potential risk if jaundice is unmonitored or improperly treated. Because of this, early diagnosis and early therapies including phototherapy, blood exchange, and treating the underlying cause are crucial to optimal care. The current research was carried out to determine the cause of significant hyperbilirubinemia in newborns enrolled on the neonatal critical care unit and postnatal ward in Government general hospital Srikakulam.

MATERIAL AND METHODS:

This is a prospective observational study conducted in the neonatal intensive care unit (NICU) and post-natal ward in Government General Hospital, Srikakulam, Andhra Pradesh. Over 6 months (March 2022 to August 2022). 120 live, singleton term neonates admitted with neonatal jaundice in the Neonatal Intensive Care Unit (NICU) and Post Natal Ward was included in the study.

Inclusion Criteria :

1. Term Neonates with jaundice delivered in the hospital and referred from peripheries, admitted to NICU during the study period. 2. Term Neonates with serum bilirubin more than 15 mg/dL

Exclusion Criteria:

1, Preterm babies 2. Babies who left against medical advice 3. Parents who refused to give consent.

Neonatal Jaundice was assessed by clinical methods and confirmed by biochemical methods. Every newborn delivered in a hospital has been closely watched from birth onwards in daylight for any signs of jaundice.

Newborn Cases were evaluated along with the maternal and antenatal history. Laboratory parameters included serum bilirubin (total, direct, indirect) CBC, CRP, and Cell morphology. Blood groups of mother and baby were assessed. Depending on the clinical presentation and the findings of the initial investigations, additional investigations have been conducted. The collected data have undergone statistical analysis.

RESULTS:

A total of 720 term neonates were admitted to the neonatal intensive care unit (NICU) and post-natal ward during this period. Out of them, 120 newborns were having significant neonatal jaundice (Serum bilirubin > 15 mg/dl) and required intervention. The incidence of neonatal hyperbilirubinemia in our study was 16.7%. A total of 120 cases were studied.

Male babies 75 (62.5 %) were affected more than females 45 (37.5%). The mean age of neonates was 4.3 ± 2.1 days. The mean age of mothers was 22.1 ± 3 years; with the youngest being 19 and the oldest 36 years. The mean gestation age was calculated to be 38.2 ± 3 weeks.

In our study 62 (51.6%) were born through normal labour, 58 (48.4%) by caesarean section. In our study, normal birth weights >2.5kgs were 92 (76.7%) remaining 28(23.3%) cases of birth weight between 1.5kgs to 2.5 kgs. The mean serum bilirubin level in our study was 17.2 ± 3.1 mg/dl.

Table 1: Aetiological factors of hyperbilirubinemia

Aetiological factors of hyperbilirubinemia	Number	Percentage
Physiological jaundice	70	58.3%
ABO incompatibility	24	20%
Sepsis	12	10%
Rh incompatibility	6	5%
Cephalhematoma	4	3.3%
Breastfeeding	4	3.3%

All the babies showed significant improvement with phototherapy only one baby required exchange transfusion (ABO incompatibility baby).

DISCUSSION:

In our study total of 120 term newborns presented with significant neonatal jaundice out of these Male babies, 75 (62.5%) were affected more than females 45 (37.5%) which is similar to the study done by Narang et al, 1996 India⁵ and Kalita D et al⁶.

In the present study, physiological jaundice was observed in the majority of babies 58.3% (70 out of 120 babies). This is similar to the study done by Bahl et al⁷ study, physiological jaundice contributed to the majority of patients (63.8%) studied and Patel A et al⁸ study shows physiological hyperbilirubinemia in 40% of babies. This was followed by ABO incompatibility as the second leading cause of neonatal jaundice 24 (20%) similar to studies done by Patel A et al⁸ (21.8%), Manuel D et al⁹ (25%), Kalita D et al⁶ (20.76%) Bohra J et al¹² (24.4%) and Ahmed Ali et al¹⁰ (24.4%).

In our study, 12 newborn babies had sepsis comprising 10% of cases. Our findings were similar to a study done by Kulkarni S.K¹¹ reported 8.3% of cases with sepsis and a study done by Kalita D et al⁶ reported 6.92% of cases with sepsis. Rh incompatibility was responsible for 5% of cases in this study which was similar to the study done by Bohra J et al¹² found which contributed to 13.8% of the cases.

In our study cephalohematoma as an aetiological factor for neonatal jaundice was observed in 3.3% of cases which was similar to the study done by Kulkarni S.K¹¹ (3.33%) Manuel D et al⁹ (4%) and Kalita D et al⁶ (2.88%)

The majority of the babies were on exclusive breastfeeding (96%). 3.3% of babies developed breastfeeding jaundice due to inadequate milk production or infrequent feeds. This may be due to inadequate milk production by the mother or because of poor breastfeeding techniques. Reduced feeding leads to dehydration causing lesser bowel movements in the newborn, which results in decreased bilirubin excretion from the body.¹³

After phototherapy, the outcomes for all the newborns were good. The majority of newborns with jaundice recover with phototherapy;

CONCLUSION:

We concluded that physiological jaundice is the most common cause of neonatal jaundice followed by ABO incompatibility, sepsis, and Rh incompatibility. The less frequent causes are cephalohematoma and breastfeeding jaundice. The most crucial aspects of managing newborn jaundice are parental counselling and newborn baby monitoring to prevent complications due to jaundice. Phototherapy was a secure, affordable, and efficient method of lowering bilirubin levels in newborn jaundice.

REFERENCES:

1. Barbara JS, Kliegman RM. Jaundice and hyperbilirubinemia in the newborn. In: Kliegman RM, Behrman HB, Jenson HB, editors. Nelson textbook of paediatrics, 17th ed. Philadelphia: Elsevier Saunders. 2004:592-8
2. Porter ML and Dennis BL. Hyperbilirubinemia in Term Newborn. American Family Physician 2002, vol65, 599-606.
3. Kiviahian C, Jams EJ. The natural history of neonatal jaundice. Paediatrics 1984; 74: 364-370
4. Boskabadi H, Maamouri G, Mafnejad S, Rezagholizadeh F. Clinical course and prognosis of hemolytic jaundice in neonates in North East of Iran. Macedonian J Med Sci 2011;4:403-7.
5. Narang A, Ghatwala G, Kumar P, et al. Neonatal jaundice, an analysis of 551 cases. Indian paediatrics 1996;34:429-32.
6. Kalita D, Mishra G, Shivananda VM. Aetiological profile of neonatal hyperbilirubinemia in neonatal intensive care unit of Gauhati Medical College and Hospital, Guwahati, Assam. J. Evolution Med. Dent. Sci. 2016;5(34):1865-1868.
7. Bahl L, Sharma R, Sharma J. Aetiology of neonatal jaundice at Shimla. Indian paediatrics. 1994;31:1275-8.
8. Patel A, Saradava K, Chauhan H. Clinical profile and aetiological factors of neonatal jaundice from a rural area of Kutch, Gujarat, India. Int J Contemp Pediatr 2021;8:143-6.
9. Manuel D, Shajahan RA. Neonates with Jaundice A Clinical Profile. Asian J. Clin. Pediatr. Neonatol. 2020;8(1):21-23.
10. Ahmad Ali, Anurag Tomar. Aetiological profile of neonatal hyperbilirubinemia in rural area of Rajasthan. IJB & Medical research March 2015;4(2):223-32.
11. Kulkarni S.K., Dolas A.L., Doibale M.K. risk factors of neonates with indirect hyperbilirubinemia in a tertiary care hospital. International Journal of Basic and Applied Medical Sciences 2014 Vol. 4 (1).395-399
12. Bohra J, Chuba Kumzuk LCR. Etiological study of jaundice in neonates. Int J Contemp Pediatr 2019;6:
13. Shailender Mehta, Praveen Kumar, Anil Narang. A Randomized Controlled Trial of Fluid Supplementation in Term Neonates With Severe Hyperbilirubinemia The Journal of pediatrics, 2005 – Elsevier