ECRONICON OPEN ACCESS

EC PAEDIATRICS
Research Article

Prevalence of Physiological Jaundice among the Newborns

Chandraleka R and Manju Bala Dash*

Department of OBG, Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry, India

***Corresponding Author**: Manju Bala Dash, HOD, Professor, Department of OBG, Mother Theresa Post Graduate and Research Institute of Health Sciences, Puducherry, India.

Received: July 05, 2019; **Published:** October 11, 2019

Abstract

Background: Neonatal jaundice is the increased rate of hemoglobin release from the breakdown product of red blood cells due to increased level of hemoglobin during birth. It occurred because of decreased life span of red blood cells among neonates [70 to 80 days] when compared to adults [90 to 120 days]. Globally, 60% of term babies and 80% of preterm babies are acquired with neonatal jaundice. In the year of 2010, 7.6 million deaths were estimated among the under 5 children due to jaundice. In that 40% of death occurred during the time of neonatal period. It is important to identify the signs and symptoms of jaundice early and to do the necessary management.

Aim:

- To assess the prevalence of physiological jaundice among the newborns.
- To associate the prevalence with selected obstetrical variables.

Methodology: A descriptive study was conducted among newborns in a selected hospital, Puducherry. Sample size was 30, selected through purposive sampling technique. The quantitative approach and descriptive design was used in this study. Data was collected through interview schedule from the mother of the newborn regarding demographic and obstetrical variables and examination was done to assess the prevalence of physiological jaundice among the newborns.

Result: The result reveals that, 30% (9) babies had physiological jaundice. The neonatal jaundice among the neonates were associated with the postnatal day at the level $p < 0.001$ level.

Conclusion: From this study the researcher concluded that, the neonates are developing neonatal jaundice as the postnatal day progresses. 9 newborns were developed physiological jaundice out of 30 newborns.

Keywords: *Neonatal Jaundice; Neonates*

Introduction

The term "Jaundice" is described that yellowish- orange discoloration of the sclera and skin due to excessive bilirubin level in the mucous membranes and skin [1,2].

Neonatal jaundice is the increased rate of hemoglobin release from the breakdown product of red blood cells due to increased level of hemoglobin during birth. And also it occurred because of decreased life span of red blood cells among neonates [70 to 80 days]

when compared to adults [90 to 120 days]. Another reason for neonatal jaundice was decreased metabolism of hepatic bilirubin due to hepatocytes immaturity [3-5].

The mechanism behinds the neonatal jaundice is the imbalance between production and conjugation of the bilirubin, which leads to increased bilirubin levels [6].

The advanced stage of neonatal jaundice was kernicterus [7,8]. Globally, 60% of term babies and 80% of preterm babies are acquired with neonatal jaundice [9,10]. In the year of 2010, 7.6 million deaths were estimated among the under 5 children. In that 40% of death occurred during the time of neonatal period [11].

Majority of infants had the serum bilirubin level of 5 to 6 mg/dl, if the babies are breast fed exclusively and the neonatal jaundice will not progress into hyperbilirubenimia [12-14].

Objectives of the Study

- To assess the prevalence rate of neonatal jaundice among the neonates.
- To associate the neonatal jaundice with the selected demographic variables.

Methodology

The present study was aimed to assess the prevalence rate of neonatal jaundice among neonates. In order to achieve the study objectives, a quantitative research approach and the descriptive research design was used in this study [15]. The study was conducted in a selected hospital at Puducherry. The population comprises of the newborn who were born in selected hospital at Puducherry. The newborns were selected according to the inclusion criteria. The sample size comprised of 30 newborns. The process of selection of sample from the entire population is considered as sampling technique. Purposive sampling technique was used in this study. Inclusion criteria of this study were 1. Mother and newborn who were present at the time of data collection. 2. Mothers who were willing to participate. 3. Newborn with neonatal jaundice. The tool was divided into two sections. Section A: consists of demographic and obstetrical variables of the mothers including name, age, residence, education, occupation, income, obstetrical score, postnatal day, sex of the baby.

Section B: consists of weight of the baby and status of neonatal jaundice. Data was collected from each mother and newborn after obtaining individual consent from the mother. Mothers were introduced about the study and researcher was collected the information by interview schedule. The weight of the newborn was checked and presence of neonatal jaundice was assessed by physical examination of newborn and it was confirmed by bilirubin level from the case sheet.

Results

The result of the present study showed that, the majority of 56.7% (17) mothers belongs to the age group of 21 - 25 years, 56.7% (17) mothers were living in urban area, 50% (15) mothers were graduate, 93.3% (28) mothers was homemaker, 63.3% (19) mothers were primi gravida, 76.7% (23) mothers were in the postnatal day of 1-3 days, 63.3% (19) babies are belongs to the male category 53.3% (16) babies had the birth weight of 2.6 - 3 kgs.

The result revealed that, 30% (9) babies had presence of neonatal jaundice whereas 70% (21) babies had absence of neonatal jaundice.

The neonatal jaundice among the neonates were associated with the postnatal day at the level $p < 0.001$ level.

Discussion

The result of the present study showed that, the majority of 56.7% (17) mothers belongs to the age group of 21-25 years, 56.7% (17) mothers were living in urban area, 50% (15) mothers were graduate, 93.3% (28) mothers was homemaker, 63.3% (19) mothers were primi gravida, 76.7% (23) mothers were in the postnatal day of 1-3 days, 63.3% (19) babies are belongs to the male category 53.3% (16) babies had the birth weight of 2.6 - 3 kgs.

Demographic and obstetrical variables	Frequency (n)	Percentage (%)
Age		
21 to 25 years	17	56.7
26 to 30 years	11	36.7
Above 30 years	2	6.7
Residence		
Rural	13	43.3
Urban	17	56.7
Education		
Illiterate	0	00.0
High school	3	10.0
Higher secondary	12	40.0
Graduate	15	50.0
Occupation		
House wife	28	93.3
Working in private	2	6.7
Working in government	0	0.0
Income		
< Rs. 5000	11	36.7
Rs. 5000 to Rs. 10000	16	53.3
> Rs.10000	3	10.0
Obstetrical score		
Primi gravida	19	63.3
Multi gravida	11	36.7
Postnatal day		
1 to 3 days	23	76.7
4 to 6 days	6	20.0
7 days and above	1	3.3
Sex of the baby		
Female	11	36.7
Male	19	63.3
Weight of the baby		
2 to 2.5 kg	6	20.0
2.6 to 3 kg	16	53.3
3.1 to 3.5 kg	8	26.7
Neonatal jaundice		
Present	9	30.0
Absent	21	70.0

Table 1: *Distribution of demographic and obstetrical variables of the mothers (N = 30).*

Demographic and obstetrical variables	Percentage (%)	Chi square X^2 df p-value
Age		
21 to 25 years	56.7	0.423 2 0.809
26 to 30 years	36.7	
Above 30 years	6.7	
Residence		
Rural	43.3	0.524 1 0.47
Urban	56.7	
Education		
Illiterate	00.0	2.143 2 0.343
High school	10.0	
Higher secondary	40.0	
Graduate	50.0	
Occupation		
House wife	93.3	0.408 1 0.523
Working in private	6.7	
Working in government	0.0	
Income		
<Rs.5000	36.7	2.73 2 0.26
Rs.5000 to Rs.10000	53.3	
>Rs.10000	10.0	
Obstetrical score		
Primi gravida	63.3	1.975 1 0.160
Multi gravida	36.7	
Postnatal day		
1 to 3 days	76.7	13.6 2 0.001
4 to 6 days	20.0	
7 days and above	3.3	
Sex of the baby		
Female	36.7	0.335 1 0.563
Male	63.3	
Weight of the baby		
2 to 2.5 kg	20.0	0.139 2 0.933
2.6 to 3 kg	53.3	
3.1 to 3.5 kg	26.7	

Table 2: *Association of demographic and obstetrical variables of the mothers (N = 30).*

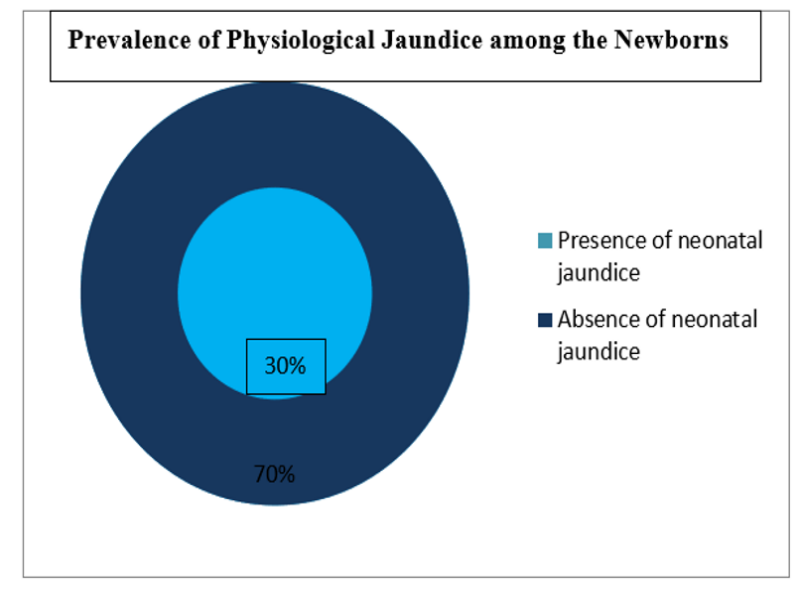

Figure 1: *Distribution of presence and absence of neonatal jaundice among neonates.*

The result reveals that, 30% (9) babies had presence of neonatal jaundice whereas 70% (21) babies had absence of neonatal jaundice. The neonatal jaundice among the neonates were associated with the postnatal day at the level $p < 0.001$ level. The present study was supported by the study conducted by Shilongo SN., *et al*. (2017), reported that the age of the neonate from 3 - 5 days are more risk at developing neonatal jaundice among the neonates [16].

Conclusion

From this study the researcher concluded that, most of the newborns are commonly developing physiological jaundice were the day of postnatal period progresses. Newborns of primigravida were mostly affected due to improper breast feeding. As a health care professional, we have to educate the mother about breast feeding, risk factors and prevention of neonatal jaundice during their antenatal visit itself to prevent the prevalence and complication of neonatal jaundice.

Recommendation

Based on the result of the study and the experience of the researcher the following recommendations are made

- A study can be conducted for the longer period to make the study result more efficient.
- A sample size can be increased to generalize the study findings.
- The study can be conducted as a comparative study among primi gravida and multi gravida mothers to find the common risk factors.

Bibliography

1. National Institute for Health and Care Excellence. Neonatal jaundice (homepage on the internet). Clinical guideline 98. London: Royal college of obstetricians and gynecologists (2010).

2. Khan RS., *et al*. "Investigating Jaundice". *Medicine* 43.10 (2015): 573-576.

3. AM Geiger., *et al*. "Rehospitalisation for neonatal jaundice: risk factors and outcomes". *Paediatric and Perinatal Epidemiology* 15.4 (2001): 352-358.

4. MJ Maisels and E Kring. "Length of stay, jaundice, and hospital readmission". *Pediatrics* 101.6 (1998): 995-998.

5. DS Seidman., *et al*. "Hospital readmission due to neonatal hyperbilirubinemia". *Pediatrics* 96.4 (1995): 727-729.

6. Kaplan M., *et al*. "Imbalance between production and conjugation of bilirubin: A fundamental concept in the mechanism of neonatal jaundice". *Pediatrics* 110.4 (2002): e47.

7. SU Sarici., *et al*. "Incidence, course and prediction of hyperbilirubinemia in near-term and term new-borns". *Pediatrics* 113.4 (2004): 775-780.

8. M Wang., *et al*. "Hemolytic disease of the newborn caused by a high titer anti-group B Ig G from a group A mother [1]". *Pediatric Blood Cancer* 45.6 (2005): 861-862.

9. KM Haque and M Rahman. "An unusual case of ABO- haemolytic disease of the newborn". *Bangladesh Medical Research Council Bulletin* 26.2 (2000): 61-64.

10. TM Slusher., *et al*. "Transcutaneous bilirubin measurements and serum total bilirubin levels in indigenous African infants". *Pediatrics* 113.6 (2004): 1636-1641.

11. Liu L., *et al*. "Global, regional, and national causes of child mortality: an updated systematic analysis for 2010 with time trends since 2000". *Lancet* 379.9832 (2012): 2151-2161.

12. Ip S., *et al*. "An evidence-based review of important issues concerning neonatal hyperbilirubinemia". *Pediatrics* 114.1 (2004): e130-e153.

13. Maisels MJ. "What's in a name? physiologic and pathologic jaundice: the conundrum of defining normal bilirubin levels in the newborn". *Pediatrics* 118.2 (2006): 805-807.

14. Maisels MJ., *et al*. "Hyperbilirubinemia in the newborn infant > or =35 weeks' gestation: an update with clarificatioins". *Pediatrics* 124.4 (2009): 1193-1198.

15. Polit and Hungler. "Nursing research-principles and practice, 7th edition", Philadelphia: Lippincott.

16. Shilongo SN., *et al*. "Prevalence of Critical Bilirubin Results among Neonatal Patients in Windhoek, Nambia". *SM Journal of Family Medicine* 1.1 (2017): 1001.

Volume 8 Issue 11 November 2019