

A study of incidence of neonatal jaundice in newborns at a tertiary health care centre

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Abstract

Background: Hyperbilirubinemia in neonates is a primary concern due to its long term neurological effects on neonates.

Aim and objective: To study the incidence of neonatal jaundice in new born at a tertiary health care centre
Methodology: Present study was a prospective study carried out in 450 newborns at tertiary health care centre. Those patients with clinical jaundice were noted and data was collected. Data was collected using pretested questionnaire. Data was analysed using appropriate statistical tests. **Results:** Incidence of jaundice in our study was 44.44%. Most commonly observed jaundice was breast feeding jaundice (50%) followed by ABO incompatibility (15.48%). Incidence of neonatal jaundice was more in male babies (55%) and low birth weight babies.

Key Word: neonatal jaundice.

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INTRODUCTION

Neonatal hyperbilirubinemia (jaundice) is the most commonly observed morbidity in neonates. It was observed that 65% of term new born and 80% of preterm infants develop clinical jaundice in 1st week¹ Jaundice is accumulation of unconjugated bilirubin. In most of the infants it is a normal transitional phenomenon. If the levels rise excessively it leads to long term neurologic sequelae like kernicterus, cerebral palsy and hearing loss.²⁻⁴ There are various causes and factors related to neonatal jaundice. Breastfeeding jaundice is seen in breastfed babies during the first week of life. It is more likely to occur when babies do not nurse well or the mother's milk is slow to come in. Breast milk jaundice may appear in some healthy, breastfed babies after first

week. It will peak during second and third weeks and may last at low levels for a month or more. Some substances in the breast milk affect the breakdown of bilirubin in the liver causing jaundice. Other related causes and factors are sickle cell anemia, Rh incompatibility, cephalohematoma (bleeding underneath scalp due to difficult delivery), TORCH group of infections. Previous studies showed that severe neonatal jaundice contributed to neonatal morbidity and mortality.⁵⁻⁹ Early detection of such risk factors in neonates is important for preventing the mortality and morbidity. This study was conducted to study the incidence of neonatal jaundice in newborn at a tertiary health care centre.

AIM AND OBJECTIVE

To study the incidence of neonatal jaundice in new born at a tertiary health care centre

METHODOLOGY

Present study was a cross sectional study carried out in a tertiary health care centre. Study population was newborn. Total 450 newborns were studied.

Inclusion criteria

1. Newborn with neonatal jaundice

Exclusion criteria

1. Baby admitted to NICU
2. Baby with severe congenital malformation.
3. Patients whose parents were not given consent

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Study was approved by ethical committee. A valid written consent was taken from the parents of patient after explaining study to them. Significant hyperbilirubinemia was defined as the value of bilirubin according to AAP guidelines in term neonates and Cockington's charts in preterm, above which phototherapy or exchange transfusion or both are required^{10,11}. Clinical jaundice is visible yellowish discoloration of skin in day light. Non physiological jaundice was diagnosed when onset of jaundice occurs before 24 hours of age, elevation of serum bilirubin requires phototherapy, a rise in serum bilirubin levels of 0.2mg/dl/hour, jaundice persisting after 8 days in term baby infant with underlying illness like vomiting, lethargy, poor feeding, excessive weight loss, apnea, tachypnea or temperature instability, jaundice persisting after 8 days in a term baby or after 14 days in a premature infant.¹² Those patients with clinical jaundice were noted and data was collected. Data was collected using pretested questionnaire. Data included sociodemographic data like age, sex, socioeconomic condition etc. Detailed history of the patient was taken. Maternal factors during pregnancy were also noted. These included maternal nutrition, h/o any infection in pregnancy. Through clinical examination of the patient was done. Various risk factors and causes for occurrence of neonatal jaundice were noted. Data was analysed using appropriate statistical tests.

RESULTS

Out of total 450 neonates 200 patients developed clinical jaundice. Incidence of jaundice in our study was 44.44%. Out of total 200 patients 116 (58%) newborns developed physiological neonatal jaundice. Incidence of non physiological jaundice was seen in 84 (42%) patients. Table 1 shows distribution of non physiological jaundice in patients. Most commonly observed jaundice was breast feeding jaundice (50%) followed by ABO incompatibility (15.48%). Other associated causes were RH incompatibility (5.95%), H/o birth asphyxia / prematurity (11.91%), H/o GDM (Gestational Diabetes Mellitus) 3.57%, H/o sepsis, infections (2.38%) and other (10.71%). Other causes were H/o sibling death, h/o hypothyroidism to mother. Table 2 shows type of delivery in mothers of patients. Most common mode of delivery was normal vaginal delivery (72%). Caesarean section was observed in 26% mothers. Two patients were born by instrumental delivery, out of them one had non physiological jaundice. Out of total 200 deliveries 160 (80%) were induced with oxytocin. Out of total 200 patients 58% were born with normal birth weight. 28% patients were born as Low birth weight (28%). 14% patients were with very low birth weight (less than

2000gms). Incidence of neonatal jaundice was more in male babies (55%) than female babies (45%).

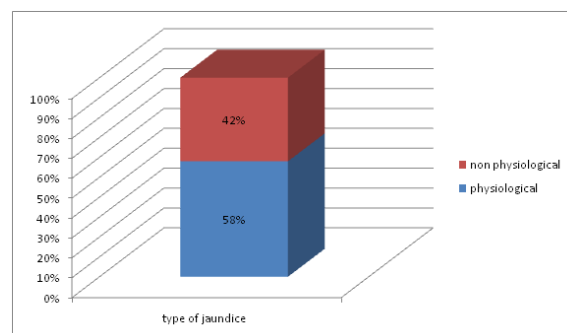


Table 1: Distribution of patients with non physiological jaundice according to causes

Srno	Type of jaundice	No of patients	Percentage
1	Breast feeding jaundice	42	50
2	ABO incompatibility	13	15.48
3	RH incompatibility	05	5.95
4	H/o birth asphyxia / prematurity	10	11.91
5	H/ o GDM	03	3.57
6	H/o sepsis , infections	02	2.38
7	Other	09	10.71
8	Total	84	100

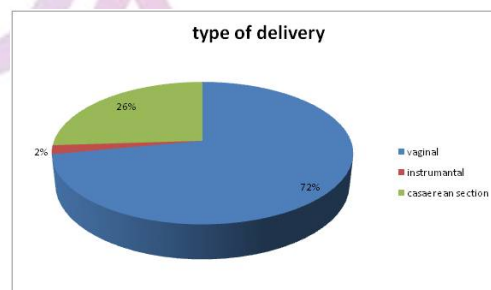


Figure 2: Distribution of patients according to type of delivery

Table 2: Distribution of patients according to birth weight

Sr no	Birth weight	No of patients	Percentage
1	Normal Birth Weight	116	58%
2	Low Birth Weight	56	28%
3	Very Low Birth Weight	28	14%

DISCUSSION

Incidence of jaundice in our study was 44.44%. similarly in a study by Kumar RK *et al* about About 50 percent of term and 80 percent of preterm infants developed jaundice in the first week of life¹³ In our study 58% newborns developed physiological and 42% newborns developed non physiological neonatal jaundice. In accordance of our study a study by Anil Narang *et al* showed 14.5% neonates developed neonatal jaundice

needing therapeutic intervention.¹⁴ Most commonly observed jaundice was breast feeding jaundice (50%) followed by ABO incompatibility (15.48%). Similar results were seen in Huang MJ *et al* breast feeding jaundice was most common non physiological jaundice.¹⁵ Breastfed newborns are at increased risk for early onset exaggerated physiologic jaundice due to relative caloric deprivation in first few days of life.¹⁶ Schneider AP in their study stated that decreased volume and decreased frequency of feedings may result in mild dehydration and the delayed passage of meconium. Compared with formula-fed newborns, breastfed infants are three to six times more likely to experience moderate jaundice (total serum bilirubin level above 12 mg per dL).¹⁷ Most common mode of delivery was normal vaginal delivery (72%). Caesarean section was observed in 26% mothers. Similar results were seen in Najib *et al* where vaginal delivery was most common mode of delivery¹⁸. Out of total 200 deliveries 160 (80%) were induced with oxytocin. we did not find any association of oxytocin with development of neonatal jaundice. Similar results were seen in Ghosh *et al*¹⁹. contrary to our study David *et al* found that mothers whose labours were induced with oxytocin developed higher mean serum bilirubin levels than infants whose mothers had not received oxytocin at all²⁰ In our study Out of total 200 patients 58% were born with normal birth weight. 28% patients were born as Low birth weight (28%).14% patients were with very low birth weight (less than 2000gms). Similar findings were seen in Najib *et al* ¹⁸ In our study incidence of neonatal jaundice was more in males than females similar findings were observed in previous studies.^{14,18} In a study by Singhal *et al* incidence of hyperbilirubinemia was 56.8% in males.

CONCLUSION

Incidence of neonatal jaundice is 44.44%. Early detection of risk factors is needed for reducing the incidence.

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