



Correlation of Latch Score and Breastfeeding Jaundice Requiring Phototherapy in Exclusively Breast Fed Term Neonates

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Abstract

Background: LATCH is an acronym that stands for latch, audible swallowing, type of nipple, comfort and hold. Each component is scored from 0-2 and the total score ranges from 0-10. A total score less than 8 is considered low/ unsatisfactory. Breast feeding jaundice is the result of the baby not receiving enough breastmilk to lower their bilirubin levels. This causes the bilirubin to be reabsorbed into the intestines and keep the levels elevated which triggers jaundice.

Objective: This study aimed to correlate the LATCH score in mother-baby dyads and breastfeeding jaundice in term neonates.

Methods: A total of 45 term neonates were included in the study. Mothers were evaluated for the LATCH score at 24 hours, 48 hours and 72 hours after delivery and

tabulated. serum total bilirubin levels were drawn at 72 hours. Neonates requiring phototherapy and with no other predisposing disposing factors were included in the study. The collected data was subjected to statistical analysis.

Results: Among the collected samples, 52% were from males and 48% from females. Of these, 31% (14/45) were found to have clinical jaundice or serum total bilirubin levels crossing the cutoffs requiring phototherapy. Out of the 14 term neonates requiring phototherapy, 12 mothers had a poor LATCH score (score less than 8). Out of the remaining 69% (31/45) mother baby dyads, only 0.9% (2/45) had a poor LATCH score, which was recorded at the 24 hour mark and improved to a favourable score at the 48 hour mark.

Conclusion: The study revealed that the LATCH score which is primarily used as an educational tool can be used to also predict breastfeeding jaundice in term neonates with no other predisposing factors to neonatal jaundice.

Keywords: LATCH SCORE, neonatal jaundice, breast milk, breastfeeding jaundice, breast milk jaundice.

Introduction

Breastfeeding is considered an important intervention to reduce infant and under-5 mortality. Breastfeeding is one of the few interventions where the survival benefits span the entire continuum of childhood: newborn, infancy and early childhood. Both the World Health Organization (WHO) and United Nations Children's Fund (UNICEF) recommend early initiation of breastfeeding, exclusive breastfeeding during the first 6 months of life and continued breastfeeding until 24 months of age.¹ Yet breastfeeding rates globally generally remain low. Only 43% of the world's newborns are put to the breast within 1 hour of birth and 40% of infants aged 6 months or less are exclusively breastfed.² Studies indicated that maternal related factors, such as maternal education, current marital status, smoking status, place of residence, employment, and economical status of mothers, history of antenatal and postnatal care are associated with EBF practice.³ Improper breastfeeding technique may result in inadequate feeds leading to excessive weight loss, hypernatremic dehydration, jaundice and rehospitalization. Evidence suggests that early initiation of breastfeeding and exclusive breastfeeding at hospital discharge are associated with improved rates of exclusive breastfeeding until six months and increased duration of breastfeeding.⁴ Institutional delivery creates better opportunity for neonates to receive skin-to-skin care from their mother, a newborn care practice proven

to increase the likelihood of early initiation, exclusive, and prolonged duration of breastfeeding. Anticipatory guidance around breastfeeding should be provided to women considering a planned c-section. Strengthening utilization of antenatal care and institutional delivery would have an added benefit in improving exclusive breastfeeding practice.⁵ Suboptimal intake jaundice, also called breastfeeding jaundice, most often occurs in the first week of life when breastfeeding is being established. Newborns may not receive optimal milk intake. This leads to elevated bilirubin levels due to increased reabsorption of bilirubin in the intestines. Inadequate milk intake also delays the passage of meconium. Meconium (first stool) contains large amounts of bilirubin that is then transferred into the infant's circulation. In most cases, breastfeeding can, and should, continue. Adequate feedings can reduce the risk of jaundice.⁶ The efficiency of breastfeeding must be assessed objectively to achieve adequate success in breastfeeding. One of the factors that ensure successful breastfeeding is the latching of the baby to the breast. Though it is normal norm for mothers to breastfeed, without proper understanding this can become a task, so complex for the mother-infant dyad. The commonly used assessment tools are: LATCH Scoring System, Infant Breastfeeding Assessment Tool (IBFAT), Mother Baby Assessment Tool (MBA), Bristol Breastfeeding Assessment Tool (BBAT).⁷ LATCH is an acronym that stands for latch, audible swallowing, type of nipple, comfort and hold. LATCH score provides a systematic method to evaluate five key components of the breastfeeding technique.⁸ LATCH score is a simple tool to identify mothers who require breastfeeding support and counselling before discharge from the hospital to prevent early breastfeeding cessation.⁹ Through this the

areas which needs intervention can be detected even within 24 hours of child's birth, so that exclusivity of breastfeeding can be improved, helps to identify the nature of the problem, so that appropriate measures can be taken by counselling and training the mothers.

Materials and Methods:

This Cross-sectional analytical study was conducted in a tertiary care centre from March 2023 to September, 2023, including all inborn term neonates. The exclusion criteria were not exclusively breastfed infants due to maternal or neonatal causes, Risk factors which have an established etiological role in neonatal jaundice. Eg: Rh incompatibility, ABO incompatibility, cephalohaematoma, sepsis etc. Neonates with other co morbidities, medical or surgical.

The study was approved by the Institutional Ethics Committee. Informed consent taken from the mother after explaining the study in their own vernacular language. The data was collected using an organized proforma. Baseline data including obstetric score, gender, mode of delivery was taken and participants with risk factors were excluded. Mothers were evaluated for the LATCH score at 24 hours, 48 hours and 72 hours after delivery and tabulated.

LATCH is an acronym that stands for latch, audible swallowing, type of nipple, comfort and hold. Each component is scored from 0-2 and the total score ranges from 0-10. A total score less than 8 is considered low/unsatisfactory.

Blood samples (2ml) were collected in clot activator Vacutainer from each neonate while employing standard infection prevention procedures, after 72 hours of life. The serum was obtained after centrifuging the blood for 5 min at 2500 rpm. The serum samples were then used to determine the concentrations of Serum bilirubin direct

and indirect. The assay was carried out using Au 480 Beckmann coulter autoanalyzer. Serum bilirubin cutoffs for neonatal jaundice were correlated with age related established cutoffs for neonates requiring phototherapy.

The neonates requiring phototherapy were shifted for intensive double surface/single surface phototherapy in the NICU. The results were tabulated in MS Excel spreadsheet and were subjected to statistical analysis.

Statistical analysis: Descriptive analysis of all the explanatory and outcome parameters was done using frequency and proportions for categorical variables, whereas in Mean & SD for continuous variables. Chi Square Test was used to compare the Prevalence of Jaundice based on the gender of the babies. Independent Student 't' Test was used to compare the mean LATCH scores based on the presence of Jaundice at different time intervals. One-way ANOVA Test was used to compare the mean LATCH Scores at 24 hrs based on the Mode of Delivery and Obstetric scores. The level of significance was set at P<0.05.

Results

Among the 45 study neonates, 23 (51.1%) were male and 22 (48.9%) were female. A total of 14 babies were shifted for phototherapy after 72 hours in view of clinical or biochemical evidence of jaundice. Comparison of prevalence of jaundice based on the gender of babies showed female babies were more prone for jaundice requiring phototherapy but the results were not statistically significant. (Table-1)

Table 1

Comparison of Prevalence of Jaundice based on the gender of the babies using Chi Square Test						
Variable	Category	Males		Females		p-value
		n	%	n	%	
Jaundice	Present	5	21.7%	9	40.9%	0.17

	Absent	18	78.3%	13	59.1%	
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Statistical analysis of the mean LATCH scores at 24, 48 and 72 hours showed a significant correlation between the scores and the presence of jaundice. Poor LATCH scores i.e., less than 8 at any time interval showed a

Table 2:

Comparison of mean Latch scores based on the presence of Jaundice at different time intervals using Independent Student t Test						
Time	Jaundice	N	Mean	SD	Mean Diff	p-value
24 hrs	Present	14	6.71	0.73	-1.23	<0.001*
	Absent	31	7.94	0.25		
48 hrs	Present	14	6.71	0.73	-1.29	<0.001*
	Absent	31	8.00	0.00		
72 hrs	Present	14	6.79	0.70	-1.31	<0.001*
	Absent	31	8.10	0.40		

Maternal characteristics showed a significant statistical association (p<0.001) between LATCH scores and the obstetrical score. 9 out of 11 Primigravida mothers

Table 3:

Comparison of mean Latch Scores at 24 hrs based on the Obstetric Scores using One-way ANOVA Test						
Obstetric Score	N	Mean	SD	Min	Max	p-value
Primi	11	6.64	0.51	6	7	<0.001*
G2A1	7	7.86	0.38	7	8	
G2P1L1	13	7.69	0.75	6	8	
G3P2L2	14	8.00	0.00	8	8	

Maternal age, mode of delivery and presence of maternal comorbidities did not show any statistical significance

Table 4:

Comparison of mean Latch Scores at 24 hrs based on the Mode of Delivery using One-way ANOVA Test							
Mode of Delivery	N	Mean	SD	Min	Max	p-value	
Normal Vaginal Delivery	12	7.42	0.79	6	8	0.30	
Emergency LSCS	28	7.68	0.61	6	8		
Elective LSCS	5	7.20	1.10	6	8		

Discussion

LATCH score provides a systematic method to evaluate five key components of the breastfeeding technique. It

significant association with jaundice requiring phototherapy. (p<0.001). This shows that adequate counselling and timely intervention using the LATCH score can prevent breastfeeding jaundice. (Table- 2)

showed a poor LATCH score and all 9 of the babies were shifted to the NICU for phototherapy. (Table-3)

with the LATCH score or requirement of phototherapy. (Table-4)

helps to identify the nature of the problem, so that appropriate corrective measures can be taken by counselling and training the mothers with simple visual

aids. Better LATCH scores in the early postnatal period were shown to correlate positively with exclusive breastfeeding rates at discharge and at 6-8 weeks of life. Breast feeding jaundice is the result of the baby not receiving enough breastmilk to lower their bilirubin levels. This causes the bilirubin to be reabsorbed into the intestines and keep the levels elevated which triggers jaundice.

This Cross-sectional analytical study was conducted in a tertiary care centre from March 2023 to September, 2023. The majority of mothers belong to the age group of 21 to 28 years of age group. The mean age of the mothers was 21.89 ± 3.61 years with minimum age of 18 years and maximum age of 38 years. Emergency LSCS was the commonest mode of delivery (62.2%) in the present study. 51.1% of infants were males and 48.9% were females.

Primigravida mother infant dyads who were not familiar with the process of breastfeeding had a statically significant lower mean LATCH score (6.64). Mothers who have a caesarean delivery, had a mean average LATCH score of 7.68 and 7.20 for those who underwent emergency and elective LSCS respectively as shown by our study and other studies.¹⁰ These subgroups of mothers require aggressive counselling to promote exclusive breastfeeding.

31% (14/45) were found to have clinical jaundice or serum total bilirubin levels crossing the cutoffs requiring phototherapy. Out of the 14 term neonates requiring phototherapy, 12 mothers had a poor LATCH score (score less than 8). Out of the remaining 69% (31/45) mother baby dyads, only 0.9% (2/45) had a poor LATCH score, which was recorded at the 24 hour mark and improved to a favourable score at the 48 hour mark. In a study done by Abbas IM and Hasan RT total

LATCH scores positively correlated with duration of breastfeeding (n=128; $r=0.26$, $p=0.003$) and to mother's scores (n=132; $r=0.58$, $p=0.001$).¹¹ This correlates with our findings as time passes in the postpartum period, breastfeeding becomes easier with counselling, education and familial support.

The LATCH score is a simple, useful measure for health workers to use in maternity wards to assess breastfeeding, especially for documenting data and monitoring lactation. Because the first days of life are pivotal for the initiation and duration of breastfeeding, the influence of an early LATCH score is essential in the prediction of exclusive nursing at discharge. Low scores mean mothers will have to feed their kids, nutrition other than breastmilk in the first days of life, jeopardizing exclusive lactation's near and future benefits.⁷

Primigravida pregnancies, patients who delivered by cesarean section, tend to have a low LATCH score at 24 hours. Substantial improvement is seen in the intervening 24 hours resulting a favourable LATCH score by 48 hours which also correlated with reduced NICU stay for phototherapy.

Hence, our study reinforces the necessity of adequate breastfeeding to prevent breastfeeding jaundice. LATCH scores are a reliable predictor for assessing the quality of breastfeeding objectively and predicting which neonate will require phototherapy. Adequate counselling, education of family members and mothers, visual aids and pamphlets and group discussions explaining the process, benefits and technique of breastfeeding are significant methods to prevent neonatal jaundice due to inadequate breastfeeding.

The study has some limitations. We did not follow the mother-infant dyads beyond 72 hours. Other problems such as dehydration fever and hypoglycemia related to

breastfeeding that appear were not assessed. We also did not include mother infant dyads who required NICU admission due to unrelated problems to breastfeeding and late preterm neonates, who may be at greater risk of improper breastfeeding. In addition to education and familial other factors could also have contributed to the improvement in the LATCH score and requirement of phototherapy for causes other poor breastfeeding. We also did not follow up the babies which were shifted to the NICU for phototherapy for their LATCH scores where a more dedicated education and training was given. Nonetheless, LATCH scores were proven to be an important tool to assess breastfeeding and prediction of breastfeeding jaundice requiring phototherapy.

Conclusion

In conclusion, the issues related to breastfeeding is of paramount during the initial days after child birth especially jaundice which can be distressing to parents. LATCH is a effective, easy and ready to use assessment which does not require a steep learning curve to identify these issues and allow clinicians to restore appropriate breastfeeding with proper intervention. The study revealed that the LATCH score which is primarily used as an educational tool can be used to also predict breastfeeding jaundice in term neonates with no other predisposing factors to neonatal jaundice. Breastfeeding jaundice, a preventable cause of neonatal jaundice with appropriate feeding can be predicted and reduced with the use of LATCH score resulting in an easy postpartum stay, less financial burden and stress to infant mother dyads.

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