Original Research Article

DOI: http://dx.doi.org/10.18203/2349-3291.ijcp20204047

Profile and pattern of infants with mothers having lactation failure

Arti Dhingra^{1*}, Sonia Bhatt², Rajesh Kashyap³

Received: 25 June 2020 Revised: 22 August 2020 Accepted: 02 September 2020

*Correspondence: Dr. Arti Dhingra,

E-mail: rtdhingra@yahoo.co.in

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Breastfeeding mothers face various kinds of problems to breastfeeding. Literature on the frequency and outcome of perceived breast milk insufficiency in mothers of hospitalized neonates in India is patchy and scanty.

Methods: Neonates weighing 1000 grams or more, and their mothers willing to breastfeed formed the study population. Relevant history was taken and clinical examination was performed along with anthropometry of the baby at the time of enrolment in the study. Mothers of neonates were also interviewed. Breast milk was also analyzed for sodium level by ion selective electrophoresis. Weight, head circumference and height were measured at each visit.

Results: Of total 285 mothers, 188 mothers (65.9%) said that their milk formation was not sufficient and remaining 97 mothers said that their milk formation was sufficient to fulfil the needs of newborn. Breast milk sodium level was >16 mmol/L in 142 (75.5%) mothers in the crisis group as compared to 21 (21.6%) in the non crisis group. Babies in the crisis group weighed significantly less at admission as well as discharge. The proportion of sick babies, use of bottles/pacifiers and pre lacteal feeds was significantly higher in the crisis group. The velocity of growth of neonates after discharge in both the groups was comparable.

Conclusions: Lactation failure was more common among those mothers who were involved in delayed initiation of breastfeeding. Structured counselling sessions with reinforcement on lactation support were proved to be useful to mitigate the situation.

Keywords: Breastfeeding, Counselling, Infants, Lactation failure, Mothers

INTRODUCTION

Mother's milk offers infants and young children complete nutrition, early protection against illness apart from promotion of growth and development. Lactation is beneficial to mother's health as well as provides specific nourishments, growth, and development to the baby. 1,2 Lactation failure is defined as the need to start top feeds for the baby within 3 months of delivery because of inadequate breast milk supply. 3,4

It is a nature's precious gift for the infant; however, lactation insufficiency is one of the explanations

mentioned most often by women throughout the world for the early discontinuation of breast- feeding and/or for the introduction of supplementary bottles. Globally, lactation insufficiency is a public health concern, as the use of breast milk substitutes increases the risk of morbidity and mortality among infants in developing countries, and these supplements are the most common cause of malnutrition.⁵⁻⁷

Breastfeeding mothers face various kind of problems to breastfeeding. Literature on the frequency and outcome of perceived breast milk insufficiency in mothers of hospitalized neonates in India is patchy and scanty. In the

¹Department of Pediatrics, SHKM Government Medical College, Nalhar, Haryana, India

²Department of Pediatrics, FH Medical College and Hospital, Agra, Uttar Pradesh, India

³Department of Pediatrics, KD Medical College, Mathura, Uttar Pradesh, India

light of above facts, it is pertinent to study the frequency of perceived breast milk insufficiency and to assess post discharge duration of breast feeding and growth (up to three months) in neonates admitted to a referral neonatal unit from northern India.

METHODS

This descriptive cross sectional study was conducted by the department of pediatrics of a tertiary care health centre during September 2015 to August 2016. Department provides intensive care to sick and low birth weight out born neonates. Neonates weighing 1000 g or more, and their mothers willing to breastfeed formed the study population. Relevant history was taken and clinical examination was performed along with anthropometry of the baby at the time of enrolment in the study. The neonates were weighed without cloths with the help of electronic weighing scale after calibrating it. Head circumference was measured by placing a fiber optic tape over the occiput and measuring the largest circumference.

Height was measured using an infantometer with the head of the baby fixed and knees extended. Standard protocol was followed to encourage effective establishment of lactation and included the following: the mother was allowed free access to her neonate in the nursery, she was provided a bed so long as the baby was admitted in the nursery, she was encouraged to be involved in the general care of the baby, she was taught manual expression of breast milk with emphasis on exact site of pressure (at areolar margin and not squeezing the nipple), manual expression 10-12 times in 24 hours (including at night) was emphasized, mother was advised to put the baby to breast 10-12 times/day, after manual expression for non nutritive sucking (in cases where breastfeeding was delayed in view of baby's illness) with transition from tube feeding to direct breastfeeding, building mother's confidence was at high priority in the unit and situations that undermine it were avoided, breastfeeding rates were

monitored and breastfeeding was considered a precondition for discharge, all doctors and nurses working in nursery were trained in lactation management (including management of inverted, flat and sore nipple.⁸

Mothers of neonates were also interviewed. They were asked about their perception of breast-feeding. Study proforma contained question about what made the mothers believe they "did not have enough milk". It was based on WHO/UNICEF resource material on breastfeeding counseling. Interview was performed on the day of recruitment and on every second day till the outcome of the study. Breast milk was also analyzed for sodium level by ion selective electrophoresis. Counseling sessions for mothers based on WHO guidelines on Breastfeeding counseling were planned and rolled out.9,10 reinforcement sessions on lactation support were emphasized at each follow up visit. Weight, head circumference and height were measured at each visit.

Permissions were obtained from Institutional Ethical committee. All the proforma were manually checked for completeness and were then coded for computer entry. The collected data was entered in Excel and analyzed using SPSS version 22 (IBM, Chicago, USA). Descriptive statistics were be used to describe findings. Chi square test for qualitative data and students t test for quantitative data were used to test statistical significance wherever applicable.

RESULTS

Two hundred and eighty five mothers fulfilled the inclusion criteria in the defined study period thus data of two hundred and eighty five subjects was analyzed and presented here. Out of total 285 mothers, 188 mothers (65.9%) said that their milk formation was not sufficient (crisis group/group A) and remaining 97 mothers said that their milk formation was sufficient to fulfil the needs of newborn (no crisis group/group B).

Table 1: Comparison of variables in relation to breastfeeding in both the study groups.

Characteristics/variables	Group A (n=188) (%)	Group B (n=97) (%)	P value
Breast milk sodium level >16 mmol/L	142 (75.5)	21 (21.6)	< 0.001
Passage of urine <6 times/24 hours	150 (79.8)	15 (15.5)	< 0.001
Birth asphyxia	41 (21.8)	32 (33)	0.04
Sepsis	72 (38.3)	45 (46.4)	0.18
Presence of congenital abnormality	15 (7.9)	3 (3.1)	0.11
Prematurity	14 (7.44)	14 (14.4)	0.06
Breastfeeding not initiated	78 (41.5)	23 (23.7)	< 0.05
Cessation of suckling	144 (76.5)	25 (25.8)	< 0.001
Baby given prelacteal feed	115 (61.2)	33 (34.0)	< 0.001
Night feeds	23 (12.2)	73 (75.3)	< 0.001
Long feeds	46 (24.5)	87 (89.6)	< 0.001
Use of bottles/pacifiers	68 (36.2)	0 (0)	NA

Table 2: Comparison of gro	owth in preterm and terr	n babies in both the study groups.

Variables	Group A (n=188)	Group B (n=97)	P value
Pre term	·		
Weight gm/day	23.3 (20.3-28.1)	24.5 (20.8-29.3)	>0.05
Head circumference cm/wk	0.68 (0.50-0.86)	0.77 (0.42-0.94)	>0.05
Length cm/week	0.84 (0.62-0.98)	0.79 (0.54-0.96)	>0.05
Term	·		
Weight gm/day	26.9 (24.2-29.4)	27.2 (24.4-30.6)	>0.05
Head circumference/week	0.38 (0.25-0.67)	0.48 (0.27-0.75)	>0.05
Length cm/week	0.82 (0.52-0.98)	0.83 (0.55-0.97)	>0.05

Breast milk sodium level was >16 mmol/L in 142 (75.5%) mothers in the crisis group as compared to 21 (21.6%) in the non-crisis group. This difference was found to be statistically significant. Passage of urine <6 times/24 hours in their babies was reported in 150 (79.8%) mothers in crisis group as compared to 15 (15.5%) in the non-crisis group. This difference was also observed to be statistically significant. The associated morbidities were observed in the form of birth asphyxia and sepsis. Birth asphyxia was found to be 21.8% and 33% in crisis and non-crisis groups respectively. Similarly, sepsis was found to be 38.3% and 46.4% in both the groups respectively. This difference was also observed to be statistically significant. The proportion of premature babies was significantly higher in the crisis group. Mothers were asked about status of breastfeeding. It was "not initiated" in 41.5% and 23.7% in the two groups respectively.

More mothers were primipara with lower mean age in the crisis group. Babies in the crisis group weighed significantly less at admission as well as discharge. The proportion of sick babies, use of bottles/pacifiers and pre lacteal feeds was significantly higher in the crisis group (Table 1).

Growth parameters were captured in pre term and term babies in both the groups for upto three months of age. The velocity of growth of neonates after discharge in both the groups was comparable. Increment in weight, height and head circumference remained adequate until the end of the study period. Mean weight of preterm neonate was 23.3 gm/day in the crisis group as compared to 24.5 gm/day in the non-crisis group. Mean weight of neonate at term was observed to be 26.9 gm/day in the crisis group as compared to 27.2 gm/day in the non-crisis group. Differences in various growth parameters were not statistically significant (Table 2).

DISCUSSION

Breast milk is the best food for a newborn. Not enough milk or Lactation crisis is a clinical condition that is very important yet less explored by subject experts. Lactation crisis may land up in serious consequences in relation to child survival as well. In healthy mothers who fail to breastfeed her normal infant, emotional interference with letdown reflex could be a possible explanation. Certain kinds of stimulus such as stress, anxiety, low confidence inhibit oxytocin to let down the milk.

Study by Mathur GP et al shown that 75 mothers with lactation failure were studied, who's less than 4 month old babies were admitted to the hospital. Partial lactational failure (94.7%) was noted more often than complete lactational failure (5.3%). Initiation of breastfeeding was delayed for 2 to 5 days usually for traditional reasons (77.3%) and because the mothers felt that the milk output was inadequate (92%).¹¹ Those

infants who are breast fed, cry for longer periods of time as compared to those on formula milk. Many a times, this phenomenon creates the confusion to mother and she thinks that her milk is not adequate for her child. The perception of not having enough milk often leads to infrequent suckling, leading to a true reduction in production of breast milk. 12,13

Literature has revealed that lower levels of sodium in breast milk and decreased frequency of micturition in neonate is associated with true not enough milk. In our study we observed that breast milk sodium level was >16 mmol/L in 75.5% mothers in the crisis group as compared to 21.6% in the non crisis group. Passage of urine <6 times/24 hours in their babies was reported in 79.8% mothers in crisis group as compared to 15.5 % in the non crisis group. More intensive lactation support is actually needed in mothers with true 'not enough milk'. Another study¹⁴ from New Delhi on perceived breast milk insufficiency in mothers of neonates observed that 73.33% in the crisis group had breast milk sodium levels>16 mmol/L as compared to 12.12% in the non crisis group. Same study also reported that micturition <6 times/24 hours was reported in 83% mothers in crisis group as compared to 18.1% mothers in non crisis group.14

In this study, we found that mean weight of preterm neonate was 23.3 gm/day in the crisis group as compared

to 24.5 gm/day in the non crisis group. Mean weight of neonate at term was observed to be 26.9 gm/day in the crisis group as compared to 27.2 gm/day in the non crisis group. Similar findings were noted by another author from northern India. They observed that growth velocity of neonates was adequate in both the groups for up to three months. Babies in the crisis group weighed significantly less at admission as well as discharge.

There were several strengths of this study. First and foremost, authors have chosen a very relevant research question that is both a public health problem as well as less explored entity. Secondly, study population in the present study consisted of hospitalized out born neonates and their mothers in a neonatal intensive care unit. This study was conducted on vulnerable population. Hardly any study is available, in which authors have taken sick neonates as study subjects. Regarding limitations, hospitalization creates stress that may inhibit maternal Oxytocin to let down the milk and has a negative effect on infants' breast milk consumption. Thus mothers in this study constitute a population vulnerable to lactation crisis. Additionally, the neonates in the neonatal intensive care unit were neither sucking nor in constant contact of the mother. These factors may have created bias in this study.

CONCLUSION

Lactation failure was more common among those mothers who were involved in delayed initiation of breastfeeding. Structured counselling sessions with reinforcement on lactation support were proved to be useful to mitigate the situation. Standard breastfeeding counselling should be part of primary neonatal care.

Funding: No funding sources Conflict of interest: None declared

Ethical approval: The study was approved by the

Institutional Ethics Committee.

REFERENCES

- 1. De NC, Pandit B, Mishra SK, Pappu K, Chaudhuri SN. Initiating the Process of Relactation: An Institute based Study. Indian J Pediatr. 2002;39:173-8.
- 2. Reinert do Nascimanto MB, Issler H. Breastfeeding the premature infant: experience of a baby friendly hospital in Brazil. J Hum Lact. 2005;21:47-52.

- 3. Bloom G, Goldbloom RB, Robinson SC, Stevens FE. Factors affecting the continuance of breast feeding. Acta Paediatr Scand. 1982;Supple 300:9-14.
- 4. Greiner T, Van Estrick P, Latham MC. The insufficient milk syndrome: An alternative explanation. Med Anthropol. 1981;5:233-47.
- 5. Neifert MR. Prevention of breastfeeding tragedies. Pediatr Clin N Am. 2001;48:273.
- 6. Mogan J. A study of mother's breastfeeding concerns. Birth. 1986;13:104-8.
- 7. Sjolin S, Hofvander Y, Hillervik C. Factors related to early termination of breastfeeding. A retrospective study in Sweden. Acta Pediatr Scand. 1977;66:505-11
- 8. Mathur NB, Seth A, Mishra TK. Physical growth and biochemical indicators of Protein adequacy in exclusively breastfed neonates weighing <1500 grams. J Trop Pediatr. 2000;46:288-92.
- World Health Organization CDD Programme. Breastfeeding Counselling: A training course, 1993. Available at: https://www.who.int/maternal_child_adolescent/documents/pdfs/bc_trainers_guide.pdf. Accessed on 17 August 2020.
- 10. Jones J, Steketee RW, Black RE, Bhutta ZA, Morris SS. How many child deaths can we prevent this year. Lancet. 2003;362:65-71.
- 11. Mathur GP, Chitranshi S, Mathur S, Singh SB, Bhalla M. Lactation Failure. Indian J Pediatr. 1992;29(12):1541-4.
- 12. Auerbach KG, Avery JL. Relactation: A study of 366 cases. Pediatrics. 1980;65:236-42.
- 13. Joshi JV, Bhandarkar SD, Chadha M, Balaiah D, Shah R. Menstrual irregularities and lactation failure may precede thyroid dysfunction or goitre. J Post grad Med. 1993;39:137-41.
- 14. Mathur NB, Dhingra D. Perceived breast milk insufficiency in mothers of neonates hospitalized in neonatal intensive care unit. The Indian Journal of Pediatrics. 2009;76(10):1003-6.
- 15. Aggarwal A, Arora S, Patwari AK. Factors influencing introduction of supplemental feeds before four months. Indian Pediatr. 1998; 35: 269-73.

Cite this article as: Dhingra A, Bhatt S, Kashyap R. Profile and pattern of infants with mothers having lactation failure. Int J Contemp Pediatr 2020;7:2026-9.