

EXCLUSIVE BREAST FEEDING EFFECTS ON MORBIDITY CAUSED BY DISEASES AND HOSPITAL STAY IN INFANTS UNDER 6 MONTHS OF AGE – A PROSPECTIVE STUDY

Paediatrics

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Abstract:

Lack of exclusive breast feeding among infants under 6 months of age are associated with increased morbidity and hospitalization for respiratory, gastrointestinal, urinary tract infections and other common childhood ailments. Objective of this study is to assess to risk of various infections in infants and decreased hospital stay in infants with exclusive breast feeding in comparison to those with mixed breast feeding (exclusive breast feeding for 3 to 4 months with introduction of complimentary liquid or solid food with continued breast feeding thereafter through 6 months}. 122 children were included in this multicentric study, ranging between age group of 2 months to 1 year. 30 infants were exclusively breast fed and 92 were mixed breast fed. During study period of 1 year, it was observed that out of 30 infants, 3{10%} have mild degree of diarrhoea, 1 (3.3%) has short duration of lower respiratory tract infection. In these cases hospital stay was 2 to 3 days while out of 92 infants, 20 {21.7%} were having severe diarrhoea and vomiting with hospital stay ranging 5 to 7 days, 25 (27.1%) were having lower respiratory tract infection, 8 (8.6%) were having urinary tract infection and 4 (4.3%) were having otitis media and fever with hospital stay of 3 to 7 days. This data reveals that infants with mixed breast feeding have significant morbidity due to various illness of childhood period and increased hospital stay.

Keywords: Exclusive breast feeding, Morbidity, Complimentary food

Introduction

Exclusive breast feeding is an unequaled way of providing ideal food for healthy growth and development of infants. As a global public health recommendation, infants should be exclusively breast fed for the first 6 months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional requirements, infants should receive nutritionally adequate and safe complimentary food while breast feeding continues for upto 2 years of age.¹ This guidelines of IYCF (infants and young child feeding) were changed in 2001 and excusive breast feeding was stressed for 6 months highlighting defense of human milk against lower respiratory or gastrointestinal illness. Breast milk has IgA, oligosaccharides, lactoferrin and other

immune cells which furnish bactericidal, fungicidal and virucidal properties to protect infant during first year of life.^{2,3} In India as per NHFS-3 only 20.6% of infants are breast fed till 4 – 5 months of age.⁴ WHO has also proposed the target of 2025 to increase the exclusive breast feeding rate to 50%.⁵ A large cluster randomized trial, that is promotion of breast feeding intervention trial (PROBIT) was conducted between June 1996 and December 1997 with a year follow up in Belarus in which total 31 maternity hospitals and polyclinic participated. Sample population was divided in to 2 groups, intervention group in which there was encouragement for initiating and maintaining breast feeding and control group in which usual infants practice were followed, it was observed that intervention group was more likely to exclusively breast fed for 3,6,9 and 12

months and there was significant reduction in risk of one or more gastrointestinal tract infections but no significant reduction in respiratory tract infection or otitis media was seen.⁶

This study is conducted with the objective to assess the impact of exclusive breastfeeding or morbidity and decreasing hospital stay in for various childhood illness.

Material and Methods

122 infants of age group ranging between 2 months to 12 months were included in this study conducted at KD Medical college hospital & research centre, Mathura UP and other hospitals for a period of 1 year admitted in various centre with effect from May 2015 to April 2016. The exclusion criteria were preterm infants, Low birth weight infants of less than 2.5 kg and infants having APGAR less than 7. Exclusive breast feeding history, demographic data and anthropometric data were taken into consideration.

Morbidity was recorded on grounds of gastrointestinal infections, respiratory infections, urinary tract infections and otitis media.

As per the breastfeeding pattern infants were categorized in 2 groups: exclusively breastfed and top fed.

1. Exclusively breastfed – this group comprised infants who were given breastfeeding only excluding the water also (30 infants).
2. Top fed – this group included infants who were given milk other than exclusive breastfeeding that is cows, buffalos, goats and formula milk, both breast and other milk (mixed fed) and those who were given water in addition to breast milk (92 infants).

Clinical examination, physical examination and necessary test of each child were conducted. Necessary investigation like CBC, and as per requirement must blood culture sensitivity, urine culture sensitivity and chest x-rays were performed.

Table I - Risk of Disease Occurance in both Category

	Exclusively Breastfed	Top Fed
Total - 122	30	92
Gastrointestinal infection	3 (10%)	20 (21.7%)
Respiratory infection	1 (3.3%)	25 (27.1%)
Urinary Tract infection	0 (0%)	8 (8.6%)
Otitis Media	0 (0%)	4 (4.3%)

Table 2

Hospital Stay in both category		
Hospital Stay	Exclusive Breastfed	Top Fed
Less than 3 Days	4	0
More than 3 Days	0	57

Observation data reveals that the morbidity due to various childhood diseases is less in exclusively breastfed infants and more in top fed infants. In addition to this hospital stay due to various illnesses also decreased in exclusively breast fed infants in comparison to top fed infants.

Out of total 122 infants admitted for management in hospital; 31.7% suffered from gastroenteritis which indicates that this is the most common disease among the infants. Out of 31.7% infants, 10% were breast fed and 21.7% were top fed. It is seen that top fed infants are more prone to gastroenteritis which may be due to different constituents in animal milk and poor hygiene condition of feeding bottle. Occurrence of respiratory tract infection is also 3.3% in breastfed infants in comparison to 27.1% in top fed infants.

Discussion

Results of this study reveals that there is significant association between breast fed infants in relation to morbidity caused by gastroenteritis and respiratory diseases and hospital stay period for management of sick infants.

Respiratory and gastrointestinal infections comprises 62.1% of the selected causes of hospitalization and 3% of all admissions. Moreover greater rates were reported in infants less than 1 years of age consistent with the reported trend in paediatric admission.^{7,8}

No significant relation was found in urinary tract infection and otitis media. It was shown that breast fed infants had shorter duration at stay in hospital for management which was less than 3 days in comparison to 5 to 7 day hospital stay in case of top fed infants.

Results almost similar to our study were shown in study conducted by Cushingseatal in USA in 1202 healthy infants who were followed up for 6 months of life.⁹

Another study in AIIMS, Delhi on admitted pneumonia infants also showed that lack of exclusive breast feeding is associated with prolonged hospital stay, that is more than 5 days as 86% of infants who had prolonged hospital stay were not exclusively breast fed compared to 14% of exclusively breastfed.¹⁰

Same results are depicted in study from Brazil on broncholitis patients in which it was concluded that exclusive breastfed was negatively correlated with hospital stay.¹¹ A study from Scotland concluded that exclusive breast fed infants had a shorter length of hospital stay (mean 2.81 days) compared to formula fed infants (mean 3.25 days).¹²

In this study hospital admission due to gastroenteritis in breast fed infants was 10% while in top fed infants it was 21.7% (table 1) which is in consonance with randomized trial from Belarus (PROBIT) in which there were 2 groups, intervention group in which breast feeding was encouraged based on baby friendly hospital initiative and control group in which feeding pattern which was being followed was continued. In intervention group 3.2% of infants were admitted because of gastroenteritis while in control group there were 3.6% of infants.

Result of this study is also supported by a study from Scotland in which hazard ratio for gastroenteritis in formula fed infants was 1.59 in comparison to 1.0 in case of exclusive breastfed infants.¹²

Results of this study is also consistent with study concluded by Amarpreet kaur and others at Guru Govind Singh Medical College and Hospital, Faridkot, India, in which hospital admission because of gastroenteritis in breast fed infants was 14.66% while in top fed infants it was 19.83%.¹³

Conclusion

This study in consonance with other similar studies reveals the strength of association between breast feeding and reduced infant morbidity due to various diseases in comparison to top feeding. Moreover, it is also observed that statistically there is significant association between exclusively breastfed infants and shorter duration of hospital stay in case of gastroenteritis and respiratory infections in comparison with top fed infants.

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