



## BREAST FEEDING PRACTICES IN CHILDREN WITH SEPSIS ADMITTED IN INTENSIVE CARE.

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### Article received on:

23/05/2019

### Accepted for publication:

09/08/2019

**ABSTRACT... Objectives:** The objective was to study breast feeding practices in children with sepsis admitted in intensive care unit of Children Hospital, Lahore. **Study Design:** Descriptive cross-sectional study. **Setting:** Medical Intensive Care Unit of The Children Hospital and Institute of Child Health Lahore. **Period:** From June 2018 to December 2018. **Material & Methods:** Considering 95% confidence level, 7.5% margin of error and the expected percentage of bottle feeding children i.e. 27% (least among both) feeding types in children with sepsis admitted in ICU, a sample size of 140 children was taken. All the patients from 6 month to 2 years of age and either gender admitted in medical ICU with sepsis were included in the study through non-probability consecutive sampling. After taking an informed written consent from caregiver, a preformed and pre-tested questionnaire was used for data collection. Diagnosis of sepsis as based upon the criteria for SIRS. Exclusively breastfed children for first 6 months of life were classified as 'breastfed'. Data was analyzed using SPSS version 22 and Chi-square test. P value < 0.05 was taken as significant. **Results:** Total 140 children were included in the study with the mean age of  $14.64 \pm 5.26$  months. In this study, 47 (33.57%) children were found breast fed while 93 (66.43%) children were not breast fed as per history. **Conclusion:** The study concluded that breast feeding practice is uncommon in children admitted in intensive care unit with sepsis and breastfeeding was found to be significantly associated with maternal education and gender of the child.

**Key words:** Breastfeeding, Intensive Care, Infants, Systemic Inflammatory Response Syndrome (SIRS), Sepsis.

**Article Citation:** Hammad A, Anwar HM, Latif S, Naeem MM. Breast feeding practices in children with sepsis admitted in intensive care. Professional Med J 2020; 27(5):935-938. DOI: 10.29309/TPMJ/2020.27.05.3748

## INTRODUCTION

One of the best source of nutrients for infants is breast milk which is helpful for their growth. Breast feeding should be started as early as possible by feeding the colostrum as recommended by World Health Organization.<sup>1</sup>

WHO advocates exclusive breast feeding for initial 6 months of infant's life and after that infants should get nutritious and safe complementary feed up to 2 years while taking breast feed. Childhood morbidity and mortality increases if children are not breastfed especially exclusively breastfed during first 6 months of life. About half of all childhood deaths worldwide are associated with poor nutrition. Malnutrition causes poor immunity and therefore these children have more chances to die of diarrhea and respiratory

tract infections which are very common in our society.<sup>2,3,4</sup> In most cases of preventable deaths worldwide, malnutrition is the main cause and it can be eliminated through adequate breast feeding. Despite of the well-recognized role of exclusive breast feeding in health, it is not widely practiced in developing countries like Pakistan. In Pakistan, exclusive breast feeding rate is 37% during the initial 6 months of life which is also alarming.<sup>5</sup>

In a recent study, sepsis was found in 22% children with breast feeding and 16.7% children with bottle feed.<sup>6</sup> While Shiva F et al reported the frequency of sepsis as 27.2% bottle fed and 22.2% breastfed children.<sup>7</sup>

Sepsis in pediatric age group is one of the growing

issues in developing countries. According to WHO and UNICEF, in 2008, about 8 million children who died under 5 years age, about 70% of deaths were due to common infectious diseases like pneumonia, malaria, measles, diarrhea, influenza.<sup>8</sup> Protective effect of breast feeding against these infections is already proven and well known. But limited data is available on preventive effect of breast feeding against sepsis.

In order to determine the frequency of breastfeeding in children with sepsis this study was designed. Considering the paucity of data available on this important condition which is associated with high morbidity and mortality in children, it is necessary to conduct a study with appropriate sample size to clarify the role of breastfeeding in children with sepsis. Latest data may highlight the link between breastfeeding practices and childhood sepsis. The result will help future studies to understand the role of breastfeeding practices in sepsis.

The objective was to study breast feeding practices in children with sepsis admitted in the Intensive care unit of The Children Hospital, Lahore.

## MATERIAL & METHODS

This was a descriptive cross-sectional study and was conducted in Intensive Care Unit of The Children Hospital and Institute of Child Health Lahore from June 2018 to December 2018 after approval from hospital ethical committee. Considering 95% confidence level, 7.5% margin of error and the expected percentage of bottle feeding children i.e. 27%<sup>5</sup> (least among both) feeding types in children with sepsis admitted in ICU, a sample size of 140 children was taken. All the patients from 6 month to 2 years of age and either gender admitted in medical ICU with sepsis were included in the study through non-probability consecutive sampling. Children having any anatomical defect making breast feeding impossible or if mother was not available for breastfeeding after child birth, were excluded. After taking an informed written consent from caregiver, a preformed and pre-tested questionnaire was used for data collection, mentioning that this information will only be used

for research purposes and their secrets will be kept confidential. Sepsis was diagnosed after applying criteria for SIRS. The criteria for SIRS include tachycardia ( $> 2$  SD of mean for age), tachypnea ( $> 2$  SD of mean for age), temperature (less than 98.6 °F or above 100.4 °F), and leukocyte count ( $< 4000$  cells / mm<sup>3</sup> or  $> 12000$  cells / mm<sup>3</sup>). The presence of any two of the above was considered as sepsis. Children who were exclusively breastfed for first 6 months of life were labeled 'breastfed'. All the collected data was analyzed on SPSS version 22. Categorical variables like gender and feeding types were presented in frequencies and percentages. Mean + S.D were calculated for continuous variable like age. To deal with the effect modifiers data stratification was done for age, gender, socioeconomic status and mother's literacy level and then chi-square test was applied. Significant P value was taken  $< 0.05$ .

## RESULTS

Out of total 140 patients included in the study the mean age as  $14.64 \pm 5.26$  months with age range of 6 months to 24 months. In this study, 47 (33.57%) children were not breastfed while 93 (66.43%) children had breast feeding. Stratification of breastfeeding frequency with literacy level of mother showed that frequency of breastfeeding is high among educated women as compared to their counterpart ( $p=0.000$ ). The gender of child also significantly affected breastfeeding ( $p=0.005$ ). The majority of the children (66.0%) with no history of breastfeeding were female. The weight of the child and monthly family income has no association with breastfeeding. Table-I

Breastfeeding	Frequency	Percentage
Yes	93	66.43%
No	47	33.57%
Total	140	100%

Table-I. Frequency of breastfeeding in patients.

Stratification of breastfeeding frequency with literacy level of mother showed that breastfeeding was more common among educated women than their counterpart.

Variable	Breastfeeding Yes No				P-Value
	Frequency	Percentage	Frequency	Percentage	
<b>Literacy level of Mother</b>					
Unable to read and write	21	22.6%	24	51.1%	0.000
Up to primary	13	14.0%	13	27.6%	
Up to matriculation	34	36.6%	07	14.9%	
Graduation and above	25	26.8%	03	06.4%	
<b>Mother's working status</b>					
Housewife	65	69.9%	39	82.9%	0.09
Working Lady	28	30.1%	08	17.1%	
<b>Gender of patient</b>					
Male	55	59.1%	16	34.0%	0.005
Female	38	40.9%	31	66.0%	
<b>Weight of patient</b>					
>6 kg	42	45.2%	18	38.3%	0.43
≤ 6kg	51	54.8%	29	61.7%	
<b>Monthly family income</b>					
<50,000	66	70.9%	35	74.5%	0.66
≥50,000	27	29.1%	12	25.5%	

**Table-II. Socio-demographic characteristics and breastfeeding.**

Among the women who breastfed their children 36.6% had education up to matriculation and 26.8% were graduate or higher level of education. The education of women was found to be significantly associated with breastfeeding ( $p=0.000$ ). Among breast feeding women, 69.9% were housewives and 30.1% were working ladies. The gender of child was also found to be significantly affecting feeding practice ( $p=0.005$ ). The majority of the children (66.0%) with no history of breastfeeding were female. The weight of the child and monthly family income has no association with breastfeeding as shown in Table-II.

## DISCUSSION

The immune system of children of 1-2 years age is in developing stage. Development of immune system depends much upon exposure to gut micro flora. The secretory IgA immune globulins present in mother's milk play a vital role. It also limits the bacterial translocation through neonate's gut mucosa. In this way breast milk protects the neonate and infant from common infections and sepsis. This defense mechanism of breast milk limits infections at gut mucosal level. Therefore many western countries have adopted the WHO policy of exclusive breast feeding for first 6 months of life while many countries recommend

introduction of complementary feeding at 4 to 6 months of age.

A study done in Uganda reported that laboratory confirmed sepsis was found in 22% breastfed children and 16.7% bottle fed children.<sup>9</sup> In our study the frequency of breastfeeding is high among educated mothers as compared to uneducated counterpart which is consistent with the findings of Herich LC et al<sup>10</sup> in which higher odds of exclusive breastfeeding were noted among educated mothers compared to those of uneducated counterparts.

In our study we stratified data in accordance to monthly family income of the parents, the findings revealed no significant association of breastfeeding with income status. The gender of child was found to be significantly associated with breastfeeding ( $p=0.005$ ). The majority of the children (66.0%) with no history of breastfeeding were female. The weight of the child and monthly family income has no association with breastfeeding.

The breastfeeding importance is very well recognized around the world. In majority of the developing countries, only 37% of children below 6 months of age have exclusive breastfeeding.

Breastfeeding provides many benefits to mother including protection from breast cancer and birth spacing. By promoting breast feeding universally we can prevent 823,000 annual deaths in children younger than 5 years and 20,000 annual breast cancer related deaths. The breastfeeding is simple, easy to practice and cost-effective intervention in reducing childhood morbidity and mortality.<sup>11</sup>

## CONCLUSION




The study concluded that breast feeding practice is uncommon in children admitted in intensive care unit with sepsis and breastfeeding was found to be significantly associated with maternal education and gender of the child.

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## AUTHORSHIP AND CONTRIBUTION DECLARATION

Sr. #	Author(s) Full Name	Contribution to the paper	Author(s) Signature
1	Ali Hammad	Concrived basicidea, Data collection, Manuscript writing.	
2	Hafiz Muhammad Anwar	Data analysis.	
3	Sadia Latif	References writing.	
4	Malik M. Naeem	Proof reading, Literature review.	