ORIGINAL ARTICLE

A Study to Determine the Frequency of Diarrhoea in Breast Fed and Bottle Fed infants of age upto two years

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ABSTRACT

Aim: To compare the frequency of occurrence of diarrhea in breast feeding and botle feeding in infants upto the age of two years among general population
Study design: Case-control study
Place & duration: The study was carried out at paediatric outpatient department of Ibn-e-Siena Hospital & Research Institute Southern bypass Jahangirabad Multan from 15 September to 15 October 2017 for one month.
Methods: 100 infants (50 Cases & 50 Controls) upto the age of two years with breast or bottle feeding attending the paediatric outpatient department of Ibn-e-Siena Hospital were clinically examined and history taken for the occurrence of diarrhea according to the questionnaire. Data was recorded and analysed for results.
Results: In this sample of hundred infants (50 Cases & 50 Controls) the rate of occurrence of diarrhea among bottle fed babies was 4.1 times than that of those with breast feeding.
Conclusions: This study concluded that bottle fed babies are at greater risk of developing diarrhea as compared to the breast fed babies.
Keywords: Breast feeding , bottle feeding , diarrhea.

INTRODUCTION

Diarrhea is defined as passage of > 300 ml liquid faeces / 24 hours. On the basis of duration diarrhea may be classified as acute, chronic , persistent and relapsing. Acute diarrhea lasts for < 7 days , chronic form remains for > 2 weeks while persistent diarrhea persists for weeks & months. Diarrheal relapse can occur after apparent cure as in amoebic infection. Either large gut or small gut is blamed for diarrhea. Diarrhea of large bowel is watery with mucus or blood as compared to that of small bowel type which is bulky and stink. Presence of fever shows infection. Associated vomiting indicates systemic intoxication, cholera and malaria. Diarrhea is most common in infants between the age of 6 months to 2 years. Frequency of diarrhea is a useful guide to its severity. Children under 3 years of age may experience as many as 10 episodes of diarrhea / year. Diarrhea is the most common cause of death in young infants in developing countries where early weaning and malnutrition are common. Diarrhea results in dehydration due to excessive water & electrolytes loss or inadequate fluid intake. Dehydrated child is thirsty, lethargic , have sunken eyes, loss of skin turgor, feeds poorly, have less urinary output and if severe have tachycardia and peripheral circulatory collapse. Rotavirus infection is common cause of diarrhea and salmonella, shigella, compylobacter & E. coli are the other bacterial causes. The main goal in the clinical management of diarrhea is to maintain the child hydration and nutritional status.

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MATERIAL & METHODS

This case-control study carried out at paediatric outpatient of Ibn-e-Siena Hospital, which is a teaching hospital involved a sample of population of 100 infants (50 Cases & 50 Controls) upto the age of 2 years whose parents consulted the paedtrician at this hospital to get their infants checked. This survey continued for one month. The parents of the infants were asked questions in accordance with pre-designed proforma to get relevant information particularly about the mode of feeding (Breast feeding & Bottle feeding) and the frequency of occurrence of loose stools in their infants. The data obtained was recorded and analysed to get the result of the study.

RESULTS

Among 100 infants involved in the study, 50 were suffering from diarrhea (Cases) and 50 were non diarrheal infants (Controls). Table 1 shows the association of diarrhea with breast feeding and it states that among breast fed infants 30 % were suffering from diarrhea and 64% had no diarrhea. Table 2 shows association of diarrhea with bottle

feeding and it tells us that among bottle fed infants 70% were suffering from diarrhea while 36% had normal stool. Table No.3 helps in the calculation of Odds ratio which provides us with an estimate of risk. The Odds ratio in this study was 4.1 which means that the infants who have diarrhea are 4.1 times as likely to have used bottle feeding compared to breast feeding. Therefore we can say that in this study infants who have diarrhea are more likely to have bottle feeding. Result of the this study is that infants with bottle feeding showed a risk of having diarrhea 4.1 times than that of those with breast feeding.

Table 1: Association of Diarrhea with Breast Feeding.

Risk factor	Mode of Feeding	Infants with Diarrhea	Infants without Diarrhea
Present	Breast feeding	15 (a)	32 (b)
Absent	Bottle feeding	35 (c)	18 (d)

- Proportion of diarrheal infants who were breast fed=a/a+c
- Proportion of non diarrheal infants who were breast fed=b/b+d

Table 2: Association of diarrhea with bottle feeding.

Risk factor	Mode of Feeding	Infants with Diarrhea	Infants without Diarrhea
Present	Breast feeding	35 (a)	28 (b)
Absent	Bottle feeding	15 (c)	32 (d)

- Proportion of diarrheal infants who were bottle fed. =a/a+c
- Proportion of non diarrheal infants who were bottle fed =b/b+d

Table 3:

Risk factor	Mode of Feeding	Infants with Diarrhea	Infants without Diarrhea
Present	Bottle feeding	35(a)	18(b)
Absent	Breast feeding	15(c)	32(d)

- The Odds of a Case having been exposure +ive =a/c
- The Odds of a Control having been exposure +ive =b/d
- Odds Ratio =a/c ÷ b/d

DISCUSSION

Holy Quran says mothers should give breast feed to their infants for two complete years. The benefits of breast feeding are well established. Breast milk is readily available and it contains antibodies especially secretory IgA which acts as passive natural immunity and protects the infants against various infections. Breast milk is safe and easily digestible. Breast milk contains the right balance of nutrients which promote growth and booster immune system of the baby. Brest milk is considered the gold standard for infant nutrition. Breast feeding is very convenient method of providing nutrition to the infants. This method is not only beneficial to the infants it also keeps the mothers healthier. In addition, breast fed baby's stool is usually soft and semiformed but in bottle fed babies the stool is firmer like normal adult stool and is passed less frequently than that of breast fed infants. The study revealed that most mothers have insufficient knowledge about the benefits of breast feeding and hazards of bottle feeding especially the uneducated mothers. More over in well off families the trend of bottle feeding is found and this job is carried out by maid servants who are usually uneducated. Such maid servants are from poor families and don't care for personal and domestic hygiene. Also this bottle feed providing woman have not the habit of hand washing with soap, wearing clean clothes , keeping the bottles clean & protecting it from flies and proper boiling of milk. Therefore it is wise to give breast feeding to infants to protect them from dangers of bottle feeding.

Recommendations: Steps should be taken to promote breast feeding and health education programme is one of the most important spect to promote it. In designing a health education programme it is necessary to asses the need by collecting data about the mothers who breast feed their babies and the mothers who are in great need of education as judged by nutritional status of their infants in a given area. This health education programme can be carried out by involving health workers including medical staff and health educators, use of posters & leaflets , mass media (newspapers, radio ,television) and by the help of religious sector. Mothers must breast feed their infants upto the age of 6 months as there is definite advantage of breast feeding. Supplements of artificial milk should be strongly discouraged. There is a need for improving weaning practices. Mothers must promote personal and domestic hygiene as well as water supply and sanitation. Vaccination for measles, rotavirus and cholera is advised.

CONCLUSIONS

Bottle feeding is more common than breast feeding among the community despite the fact that bottle fed babies are at greater risk to develop diarrhea than the breast fed babies. This shows insufficient and poor information about the breast feeding benefits among the mothers. There is a need for more understanding and learning about breast feeding usefulness and dangers of bottle feeding.

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