

**Original Research Article****A study on the failure of breast feeding during the first month of life**

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Ph: +91- 9674856277 (M), Email: drbkddatta1965@gmail.com**Abstract****Background:** Breastfeeding provides unsurpassed natural nutrition to the newborn and infant.**Methodology:** Out of 100 cases of breast feeding failure, 11 babies were selected, whose mothers had complete failure of breast feeding during the first postnatal growth, who were aged exactly one month (plus or minus one to two days on either side), were full term, of average weight (2.5-3kg at birth) completely healthy on clinical examination with no clinical evidence of infection in any part of the body and their weight gains during the first months were within normal limits (300 to 350 gms). All the babies in the present study were fed with tinned milk.**Results:** Failure of establishment of lactation properly from the very beginning was responsible in 17 cases (24%). In 63.4% of the total number of cases in this group, no obvious reason was found other than simple 'lactational insufficiency'.**Conclusion:** Most of the cases of breast feeding failure were found to be due to some cause in the mother i.e. 71% of the total number of cases. In most cases of this group the cause was simply 'inadequate lactation' 63.38% of the different factors responsible for failure of breast feeding, lack of knowledge among parents about the uniqueness of breast milk for their babies, is important.**Keywords:** Lactation, Pregnancy, Breastfeeding, Lactational insufficiency, Lactational failure.**Introduction**

Lactation begins with secretory differentiation of breast tissue during pregnancy. Hormonal changes in estrogen, prolactin, progesterone, and IGF-1 cause differentiation of the mammary epithelium

in preparation for milk production. Alveoli form by the end of the first trimester of pregnancy. Placental prolactin, placental growth hormone, and human placental lactogen support mammary differentiation and milk formation. Progesterone

produced by the placenta prevents synthesis of mature milk until after birth. Secretory activation occurs as progesterone levels fall and milk production increases from 50 mL/d at birth to approximate 500 mL/d in the first 2 to 3 days after delivery.^{1,2} Breastfeeding provides unsurpassed natural nutrition to the newborn and infant. Human breast milk also contains numerous protective factors against infectious disease and may influence immune system development, as noted in previous studies of infant response to vaccination and thymus gland development.³

In addition to being the best source of nutrition for newborns and infants, human breast milk also provides immunologic protection against many infections.^{4,5} For the fetus and newborn, immunologic defenses are present, but immature. To compensate, the mother's immunoglobulin (Ig) G antibody moves across the placental barrier to provide some protection. After birth, these maternal antibodies wane in the first 6 to 12 months of human life. The neonate and infant can receive additional maternal protection from breast milk, however. Human breast milk contains large quantities of secretory Ig A (sIgA). These antibodies, which have formed as a consequence of the mother's previous exposure to infectious agents, can bind to potential pathogens and prevent their attachment to the infant's cells.

It has been further suggested that breastfeeding facilitates increased immunologic tolerance, and may thus decrease future risk of autoimmune disorder.⁶ Koletzko and co-authors found that formula feeding in place of breastfeeding was independently associated with increased risk of Crohn's disease but not ulcerative colitis.^{7,8}

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.⁹ Total lactation failure was defined as either a total absence of milk flow or secretion of just a few drops of breast milk following suckling for at least 7 days.¹⁰ Partial lactation failure was defined as either inadequate milk output or the need for supplemental feedings to sustain growth.^{10,11}

Lactation insufficiency or failure is relatively common among women.¹² The most common cause of lactation failure is insufficient milk or no milk (80%). The age, parity, education, socioeconomic status, religion, family structure, and urban versus rural status of mother all had a bearing on the occurrence of lactation failure.¹³ The perception of not having enough milk often leads to infrequent suckling, leading to a true reduction in production of breast milk.¹⁴

Materials and Methods

The present study investigated 100 cases of failure of breast feeding. The cases included both complete and partial failure. We also estimated the serum immunoglobulin levels of eleven completely artificially fed and same number of completely breast fed infants- all aged one month and all healthy, to find out any difference in the levels.

We conducted our study in the well baby clinics mainly, and also in the neonatal nursery of a tertiary care teaching & referral hospital, Kolkata after taking approval from institutional ethics committee. We collected our cases from those babies who were delivered within one year's time before our investigation started and also from those babies who were delivered during our investigation.

The study included mothers of all age groups from 19 to 20 years upto 40 years on an average. All of them who have delivered in the same hospital were from middle socioeconomic class group with a few exceptions. We used the term "complete failure" to indicate those cases, where mothers attempted only for first 3 to 4 days to suckle their babies at the breasts. Being unsuccessful, they gave up and started to feed the babies with bottled milk. The term 'partial failure' had been used to indicate those cases, where babies fed principally and regularly with bottled milk during the first months of their lives with only occasional feeds at the breast, e.g. a night feed, purpose of which is psychological satisfaction mainly rather than to fulfil hunger.

History of feeding patterns, diet intake, family, any illness during pregnancy, mode of delivery, post natal complications, health status of baby post natal period and other relevant information were captured. Detailed history and examination of baby and mother was done and data captured. Out of 100 cases of breast feeding failure, 11 babies were selected, whose mothers had complete failure of breast feeding during the first postnatal growth, who were aged exactly one month (plus or minus one to two days on either side), were full term, of average weight (2.5-3kg at birth) completely healthy on clinical examination with no clinical evidence of infection in any part of the body and their weight gains during the first months were within normal limits

(300 to 350 gms). All the babies in the present study were fed with tinned milk.

Another 11 babies were selected from the Well Baby Clinics (as controls) who were fed entirely with breast milk during the first month of their lives. They were of same age, of similar birth weight and gestational age, having same health and nutritional status.

Results

On investigating 100 cases of failure of breast feeding, we found that causes of breast feeding failure fall mainly into three groups (Table 1). Table 1 show that highest number of cases falls into Group A (which were due to cause in the mother).

Table 1: Showing circumstances interfering with breast feeding

Groups	Causes of breast feeding failure	Total no. of cases	Percentage
A	Maternal causes	71	71%
B	Causes in the baby	19	19%
C	Other causes	10	10%
	Total	100	100%

The cases included in Group A, where some maternal cause was responsible- showed various reasons of breast feeding failure. These included- inadequate milk supply from the beginning; milk supply becoming inadequate after a few days; breast and nipple abnormalities; illness of the

mother, etc (Table 2). Failure of establishment of lactation properly from the very beginning was responsible in 17 cases (24%). In 63.4% of the total number of cases in this group, no obvious reason was found other than simple ‘lactational insufficiency’.

Table 2: Showing various causes in the mothers leading to failure in feeding their babies at the breasts

Causes in the mothers	No. of cases	Percentage (%) of total no. of cases of failure due to maternal causes
Inadequate milk supply from the beginning	17	24
Milk supply becoming inadequate later on	28	39.4
No obvious cause in	45	63.4
Breast and nipple abnormalities	8	11.3
Sick mother	18	25.3
Some obvious cause in	26	36.6
Total	71	

Table 3: Breast and nipple abnormalities in the mother responsible for lactational failure (N=8)

Breast and nipple abnormalities	No. of cases	Percentage (%) of total no. of cases of failure due to breast and nipple abnormalities
Cracked nipple	2	25
Inverted, flat nipple	2	25
Breast abscess	1	12.5
Painful breast congestion	3	37.5
Total	8	100%

Painful breast congestion was responsible in slightly higher percentage of cases (37.5%) of the

total number of cases of failure due to breast and nipple abnormalities (Table 3).

Table 4: Showing various causes of sickness of the mother which resulted in lactation failure (N=18)

Causes of maternal sickness	No. of cases	Percentage (%) of total no. of cases of failure due to maternal illness
Caesarean section	8	44.5
Tubal ligation operation	5	25
Post natal eclampsia	1	5.5
Maternal accident (burn)	1	5.5
Stitch abscess (of episiotomy wounds)	1	5.5
Rheumatic heart disease	1	5.5
Caesarean hysterectomy due to uterine tumor	1	5.5
Total	18	100%

It is evident from table 4, that caesarean section (in 44.5%) had postnatal tubal ligation operation (in 28%), which are subsequently followed by

post partum illness of the mother and separation from the body, caused lactation failure in a considerable number of cases.

Table 5: Showing various causes in the baby which resulted in lactation failure (n=19)

Causes in the baby	No. of cases	Percentage (%) of total no. of cases of failure due to some causes in the baby
Baby unable to suck the breast	9	47.4
Illness of the baby	5	26.3
Unwillingness of baby to suck the breast	5	26.3
Total	19	100%

It is evident from table 5 that inability of the bay to suck the breast (47.4% cases) was an important

cause of lactation failure. It may be due to a variety of factors as shown in table 5.

Table 6: Showing causes in the babies responsible for its inability to suck the breast (n=9)

Causes of inability of the baby to suck the breast	No. of cases	Percentage (%)
Prematurity	8	88.9
Congenital anomaly (Pierre-Robin syndrome)	1	11.1
Total	9	100%

Table 7: Various illnesses of the newborn babies which are responsible for breast feeding failure (n=5)

Illness in the baby	No. of cases	Percentage
Neonatal asphyxia	2	40%
Congenital heart disease (transposition of great vessels)	1	20%
Baby crying excessively with breast feeding	2	40%
Total	5	100%

The illness of the newborn babies constituted 26.3% of the total number of cases of lactation failure due to some cause in the baby.

Table 8: Showing other causes of breast feeding failure

Causes	No. of cases	Percentage
Working mother	6	60
Twin babies, mother unable to manage them simultaneously at the breasts	2	20
Husband objected	1	10
Doctor's advice to feed tinned milk	1	10
Total	10	100

It is evident from table 8 that mother working outside home was an important cause of lactation

failure which constituted 6 cases out of total 100 cases of lactation failure.

Table 9: Showing relation of breast feeding failure with maternal age

Maternal age in years	No. of cases	Percentage (%)
Upto 25 years		
Upto 20 years	12	12
20 to 25 years	22	22
More than 25 years		
26 to 30 years	29	29
31 to 35 years	37	37
Total	100	100

It shows increased incidence of breast feeding failure in the age group above 25 years (66%) and much less incidence of breast feeding failure in below 25 years age group (34%).

Table 10: Showing relation of breast feeding failure with maternal parity

Parity	No. of cases	Percentage (%)
Para 1	47	47
Para 2	33	33
Para 3	15	15
Para 4 and above	5	5
Total	100	100

It shows more failure of breast feeding in primigravida (47%) than in second gravid (33%). Least incidence in women with four or more children (5%) [Table 10]. Less incidence of failure in third gravid (15%) and

Table 11: Showing relationship of maternal education with breast feeding failure

Maternal education	No. of cases	Percentage
No formal qualification	45	45
School certification	37	37
Tertiary qualification	18	18
Total	100	100

Table 11 shows that increased incidence of success of breast feeding with increased levels of maternal education.

Table 12: Showing relationship of failure of breast feeding with the period after which ‘rooming-in’ was done

Period after which ‘rooming-in’ was done	No. of cases	Percentage
Within 3 days after birth	27	27
After 3 rd day, before 7 th day	35	35
After 7 th day	38	38
Total	100	100

Table 12 shows much less incidence of breast feeding failure (27%) when ‘rooming in’ was done within first 3 days of life. Much higher incidence of failure was found when ‘rooming in’ was done after 3 days. It showed increased incidence of success of breast feeding with high family income per month.

Table 13: Showing relationship of breast feeding failure with responsibilities of the mother in the family

Maternal responsibilities	No. of cases	Percentage (%)
Having little household responsibilities	42	42
Having household responsibilities	58	58

It shows increased incidence of success of breast feeding when mother has little domestic responsibilities (Table 13).

Discussion

In the present study of 100 cases of breast feeding failure, it was found that some cause in the mother was responsible in the great majority of cases which constituted 71% cases in the present series. In this group, some obvious causes were found in only 26 (36.6%) mothers of which 25.3% mother had sickness and 11.3% mothers had breast and nipple abnormalities. Painful breast congestion was the major (37.5% cases) breast and nipple abnormalities causing lactational failure. Major causes of sickness of mother causing lactational failure were caesarean section in 44.5% cases and post partum tubal ligation operation in 28% cases. In majority of cases, where maternal causes were responsible for lactational failure, no obvious reason of maternal difficulty was found. This group constituted 63.4% of the total number of cases, which was the maximum number in the present series. Similar results were shown by Robinson (1943)¹⁵ and Huggins KE (2000)¹⁶. In their studies a definite cause of breast feeding failure was not established in 40 to 60% of cases. Dummer (1949) showed similar results in whose series 51% of failures were due to 'physiological insufficiency' which was suggested as the main cause of breast feeding failure. Davies DP (1979) reported that inadequate milk supply was the cause of failure of breast feeding in 38% and cessation of milk supply in 18.2% of their cases.¹⁷ Study by Mathur GP et al (1992) shown that 75 mothers with lactation failure were studied, whose 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%).¹³ 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%). The various causes of lactation failure were determined and the relationship to various factors was analyzed. The commonest cause of lactation failure was insufficient milk or no milk (80%). The age, parity, education, socio-economic status, religion, family structure and urban vs rural status of

mother--all had a bearing on the occurrence of lactation failure. An attempt was made to relactate all these mothers. The outcome was successful in 69.3 cases and failed in only 4% cases. In 26.7% cases, we cannot predict the outcome as the mothers hospital stay was very brief with no follow up.¹³

Study by Toppare MF et al (1994)¹⁸ investigated risk factors for lactational failure in puerperium among 60 mothers with inadequate daily milk supply for their babies were the lactational failure group, and 60 mothers with similar age having babies with similar age and weight were chosen as the control group. Low prolactin levels, low serum iron and low serum ferritin levels and low aldosterone values and birth in community hospitals were associated with significantly increased risk of deficient lactation. High income of the family, increase osmolality of breast milk, high systolic blood pressure of the mother, birth by cesarean section was some of the variables that increased the risk that could not reach the level of significance. Correcting iron deficiency even if it is not overt, sparing more time for the mothers discussing the benefits of breast milk to their babies, and avoiding caesarean section if possible may help increase the incidence of breast milk feeding.

The synonyms of lactation insufficiency are as follows: lactational inadequacy¹⁹, breast milk insufficiency²⁰, lactation failure^{9, 21}, mother's milk insufficiency (MMI)²², perceived insufficient milk (PIM), insufficient breast milk, partial lactation failure²³, neonatal insufficient milk syndrome (Nims), hypogalactia or lactation inadequacy, breast-feeding failure²⁴ and suboptimal infant breastfeeding (SIB)²⁵. Many reasons of this lactational inadequacy had been put forward by several researchers. In the present study it was found that primipara have maximum incidence of breast feeding failure (47%). This finding was in consistent with the observation of Davies DP et al (1979)¹⁷ who found that women with one or two children have more difficulties with lactation

(52.5 – 55%), and women with three or four children have less failure rate (44.4 to 46%).

Conclusion

Most of the cases of breast feeding failure were found to be due to some cause in the mother i.e. 71% of the total number of cases. In most cases of this group the cause was simply 'inadequate lactation' 63.38% of the different factors responsible for failure of breast feeding, lack of knowledge among parents about the uniqueness of breast milk for their babies, is important.

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