

Supplementary suckling technique: Relactation tool for mothers not breastfeeding their infants.

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Abstract

Introduction: Exclusive breast feeding is advised by WHO upto 4 months of infancy and if possible up to 6 months of age. However breast feeding is many a times stopped or given along with other milk supplements, leading to increase in malnutrition, morbidity and mortality in infants less than 6 months age. Supplementary Suckling Technique (SST) is one of the recommended method of establishing lactation in mothers who are nonlactating or have stopped lactating after discontinuing breast feed.

Objective: To evaluate the success of supplementary suckling technique in restoring lactation in mothers with infants less than 6 months of age.

Material and method: The study was conducted over a period of 12 months in pediatric department of a tertiary care hospital. Mothers of infants <6 months, not exclusively breast feeding their infants who were admitted with different ailments were included in this study. Complete data was collected in a predefined format including anthropometry and feeding details. Establishment of breast feeding and weight gain with help of SST was considered as success.

Results: 74 infants, less than 6 months of age, who were not being exclusively breast fed were admitted amongst whom SST was tried in 59, with male female ratio of 2.4:1. Maximum patients were <1 months of age (30 (51%)) and average hospital stay was 6.74 days (5-18). Lactation was successfully established in 52 (86.4%) and failed in 8 (13.5%) with average weight gain of 12.57 gm/kg/day (0.8-44.3).

Conclusion: Supplementary suckling technique has a good success rate when implemented by dedicated staff members in motivated mothers.

Keywords: Supplementary suckling technique, Maternal milk inadequacy, Lactation.

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Introduction

Exclusive breast feeding provides optimal nutrition and protects against infections that can precipitate malnutrition. Educational and information programs are run all over country by various institutes and government. Despite this fact mothers forego breast feeding and start early milk supplementation, often with improper choice of milk and method of feeding. Worldwide rates of exclusive breast feeding are strikingly low, only 25%-30% among 2-5 months infants and situation is graver in Uttar Pradesh (7.3%). 13.6% of children <6 months of age in Uttar Pradesh suffer from severe acute malnutrition and partial breast feeding plays a major role as a causative factor. Failure of breast feeding has been attributed to multiple factors such as cultural and traditional practices, illiteracy, lack of antenatal counselling, working mother, lack of family support and others.

Milk production is largely a supply and demand process, if baby is not fed frequently enough, milk production goes down and mother complains of lactation failure.

In the past relactation and lactation were considered exceptional experiences but now many authors have proved that relactation is possible. Supplementary suckling technique is used to induce lactation and increase breast milk secretion apart from other methods like drop and drip. This study was designed to assess the success of this technique in our set up as there is paucity of literature in this regard.

Materials and Methods

This study was conducted in pediatric department of a tertiary care hospital in Bundelkhand region. During the study period of 12 months, infants of less than 6 months of age who were admitted in ward (general and nutritional rehabilitation center) who were not receiving exclusive breast feeds, receiving bottle feeds, diluted/undiluted formula/animal feeds, not gaining weight or those with pedal edema were included in the study. Sick babies, babies who had suffered from birth trauma or had major congenital anomalies were excluded from the study, along with

babies whose mothers were unavailable to breast feed. Mothers with serious systemic illness, mastitis and breast abscess were not included in the study. Demographic data was collected and all the infants included in study were examined in detail according to a structured format. Infant was treated for the primary medical illness he/she was admitted for and feeds were started according to the condition of the baby. Breast feeding position and attachment were assessed and rectified where required. Mothers were provided with adequate diet and motivation along with counselling for removing doubts regarding breast feeds. Supplementary suckling technique was used to establish lactation by trained staff personnel.

In SST, one end of a 6 or 8 F feeding tube was stuck to the mother's breast close to the nipple and the other end of the tube laid in a bowl of diluted F 100 milk, kept at a lower level than the mother's breast, while the infant suckled at the mother's breast. Mothers were encouraged to breast feed by allowing suckling by the baby for 10 minutes on each breast, every 2 hours followed by supplementary technique. Initially the amount of supplement was given in full amount according to infant's weight, normally 150 ml/kg of the infant's body weight divided into 8 or more feeds. As breast milk production increased, the amount of supplement consumed decreased. Infant's weight was monitored regularly. This allowed for maternal breast stimulation and also infant satisfaction in receiving feeds. SST was considered successful if the mother had milk production and the baby started gaining weight on

breast feeds. Mothers were counselled on discharge for follow up and for continuing breast feeds till infant is 6 months of age. At every follow up continuation of breast feeds was advocated and weight gain of the infant noted.

Results

During the study duration of 1 year, 74 infants <6 months of age were admitted in pediatric department who were not exclusively breast fed. 59 of these infants and their mothers were included in the study and 15 excluded. There were 42 males (71%) and 17 females (29%), with ratio of 2.47:1. Maximum infants were less than 1 month of age (30%-51%), with youngest being 8 days old and oldest 150 days old. Mothers on asking, gave various reasons for not breast feeding exclusively, single most important reason has been outlined in Table 1. Inadequate milk production formed the maximum proportion among these mothers (47.45%). Prelacteal feed was given to 38 (64.4%) of these infants while 44 (74.57%) were receiving bottle feed and 15 (25.42%) katori spoon or paladai feed. Animal milk (cow, buffalo, goat) was being administered in undiluted form in 19 (32.2%) and in diluted form in 25 (42.4%). Formula feed in proper dilution and technique was being fed in 6 (10.1%) and improperly in 9 (15.3%) of these infants. 21 (35.6%) of these infants had weight for length at <-3 SD, 15 (25.4%) <-2 SD, 6 (10.1%) <-1 SD and 2 (3.38%) at median, according to WHO growth charts. There were 15 infants who had length of less than 45 cm.

Reasons	Number	Percentage
Inadequate milk	28	47.45
Others (work, other's advice, milk quality not good)	21	35.59
Infants illness	4	6.77
Maternal illness	3	5.08
No lactation since birth	3	5.08
Feeds		
Prelacteal feeds	38	64.4
Bottle feeds	44	74.57
Katori spoon/Paladai	15	25.42
Cow/Buffalo/Goat undiluted milk	19	32.2
Cow/Buffalo/Goat diluted milk	25	42.4
Formula feed proper dilution	6	10.1
Formula feed improper technique	9	15.3

Table 1. Reasons for not exclusively breast feeding and method/type of feeding.

SST was successful in 51 (86.4%) of these mothers while it failed in 8 (13.6%) in establishing lactation. Average hospital stay of these babies was 6.74 days (5-18 days). Average weight gain seen in these infants was 12.57 gm/kg/day (0.8-44.3). Maximum success rate was seen in infants whose age was less than 2 months (93.8%). Success rate decreased with increase in

age. 75% success was noted in babies 2-4 months of age and only 33.33 in >4 months of age (Table 2). Among the 21 infants with weight for length <-3 SD, only 15 (71.4%) succeeded with SST while 100% success was observed among infants with weight for length at median and at <-1 SD. 93.3% success was demonstrated in infants with weight for length <-2 SD and also in those with length <45 cm (Table 3).

Age (months)	Total	Success number	%	Failure number	%
0-2	44	41	93.18	3	6.8
2-4	12	9	75	3	25
4-6	3	1	33.33	2	66.66

Table 2. Age and success of SST.

Weight for length	Number	Success number	%	Fail number	%
Median	2	2	100	-	-
<-1 SD	6	6	100	-	-
<-2 SD	15	14	93.3	1	6.67
<-3 SD	21	15	71.4	6	28.57
<45 cm length	15	14	93.3	1	6.67

Table 3. Weight for length and success of SST.

35 (59.3%) of these infants came for first follow up visit but the number decreased with subsequent visits, with 45.76% at second and only 40.6% at third and 37.3% fourth visit. There was documented weight gain in these infants (Table 4). There

were 5 infants who were again started on milk supplements post discharge. Mothers were counselled to continue breast feeds and also provided with any support they needed, during these post discharge visits.

	Number	%	Average weight gain (gm/kg/day)
1st follow up	35	59.3	4.86
2nd follow up	27	45.76	9.05
3rd follow up	24	40.67	9.82
4th follow up	22	37.3	9.69

Table 4. Follow up and weight gain.

Discussion

Exclusive breast feeding continues to deteriorate leading to higher rate of malnutrition and diseases in these infants. The first few weeks of postpartum period has been identified as critical time for establishing lactation or for early termination of breast feeding. A study comparing mortality between exclusively breast fed and partially breast fed infants showed relative risk of death of 4.2 which rose to 14.2 when compared to totally top fed infants. This risk of death further increased to 23.3 between exclusively breastfed and totally top fed infants when analysis was limited to the first 2 months of life. Breast feeding, though being a natural phenomenon, mothers require support and help with proper positioning for establishing adequate lactation. Mothers who have stopped breast feeding are also able to relactate with proper education, guidance and support. Many techniques are available to help this process of relactation.

Supplementary suckling technique involving feeding tube and bowl was used in our study in 59 cases, of which 51 (86.4%) were successful in establishing breast feed. This result is comparable with other studies like Vygen et al., who reported 85% success and Tomar RPS who reported 85.8% success in establishing relactation. Auerbach and Avery did one of the

largest retrospective study and reported relactation in 240 mothers Seema et al. studied 50 mothers of hospitalized infants <4 months old with 98% successful relactation while Banupurmah S et al., who researched initiation of lactation in 1000 mothers of babies aged <6 weeks on OPD basis demonstrated 91.6% success. These rates were higher than those in our study which might be due to younger ages of the sample population in above mentioned studies.

These mothers gave various reasons for starting milk supplement, commonest being inadequate milk production (47.75%) as perceived by them, followed by others like advice of neighbours and relatives, work, feeling that milk quality was not good, etc. This was similar to study by Tomar RPS, where 'not enough milk' was commonest reason in 53.1%. Maternal illness or factors was observed in 3 (5.08%) cases in our study which included inverted nipples in 2 and fissure in 1. This percentage was higher in study done by Seema et al., (12%) but similar to Tomar RPS.

Prelacteal feeds were given in 64.4%, bottle feeds in 44 (74.57%) and katori spoon in 25.42% in our study. These rates were 88.4% for bottle feeds and 9.5% katori spoon, 2.1% paladai feed in a similar study.

Kondapalli CS reported that among 100 infants who were bottle fed, 32% were initiated on bottle feed before 6 months of age. Similarly 26% bottle feeding was observed in another study. These differences may be due to difference in size and demography of sample population. All these authors unanimously discourage bottle feed. Infants who are bottle fed take longer time to adapt to breast feeding as observed in our study as well as noted by other researchers. Infants are more willing to take to breast when they are younger while older infants take time as they are habituated to bottle or katori. Auerbach and Avery reported that 90% of infants <1 week old, 75% between 1-8 week and only 51% >8 weeks suckled well when first time they were put to breast. Another study reported that 4 of 5 mothers were successful at relactation when infants were less than 3 weeks of age while 4 of 5 failed when tried to relactate for infants more than 3 weeks. Our study also demonstrates decreasing success with increasing age of infant. This might be because as the infant approaches around 6 months of age, interest in weaning food increases and also the hormonal reflexes in mothers become weak.

In our study there was decreasing trend of success with decreasing value of weight for length (WHO growth chart) with 100% success when infant was at median or at <-1 SD weight for length, which decreased to 71.4% when infant was <-3 SD. This signifies the importance of early intervention before the child becomes malnourished. Also with decreasing weight, there is increasing vulnerability to various illnesses which may further hamper willingness and ability of infant to suckle.

Our study also demonstrated decreasing rates of follow up with time despite proper counselling and support. Weight gain was evident in these infants and breast feeding continued. There were 5 mothers who had again started giving milk supplements instead of breast milk sighting inadequate weight gain during follow up, indicating need for further counselling, support and awareness at community level as well. However status of those infants who did not come for follow up remained unknown. Marieskind commented that there are 2 paramount requirements for relactation, a strong desire by the mother to feed and stimulation of the nipple. Brown and Jelliffe added a third which is a support system to build and maintain woman's confidence. Hence proper counselling of the mother along with the family members should be stressed upon.

Conclusion

Breast feeding alone can save many lives and lay a healthy foundation for infants less than 6 months of age. Relactation is possible if the mother is properly motivated and provided with help and support by trained professionals. There is increasing need to intervene early before the infant becomes severely malnourished and educate parents for follow up.

Ethical Consideration

Ethical clearance for the study was obtained from the Research and Ethics Committee of the University of Nigeria Teaching Hospital Enugu. The IRB institution name is university of

Nigeria Teaching Hospital, Ituku-Ozalla Enugu, approval number is IRB 00002323 and approval date is 18/02/2019.

Author Contributions

JMC and EO conceived and designed the study. VO, NU conducted data gathering. BC performed statistical analyses. JMC wrote the article.

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Declaration of Patient Consent

The authors certify that they have obtained all appropriate patient consent forms.

Conflicts of Interest

None.

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