Quadrant 02: Breastfeeding- Dr. Sabu Richard Abraham

1. Preparing the Mother for Breastfeeding

The antenatal mother has to be motivated and prepared for breastfeeding. In the last trimester of pregnancy, breast and nipples should be examined for retracted or cracked nipples. Oiling, massaging and applying suction using 'inverted syringe technique' are useful. Primigravidas and those who have experienced difficulty with lactation previously need more care and motivation. Antenatal mother should take more food, extra 300 kcal and 15 g protein and lactating mother should take extra 400-500 kcal and 25 g protein. This can be achieved by one to two extra helpings of family food. She should also take plenty of green leafy vegetables, seasonal fruits and fluids.

2. Initiation of Breastfeeding

Baby must be put to breast within half an hour after normal delivery and within four hours after caesarean sections. Prelacteal feeds like gold rubbed in water, honey, distilled water, glucose etc., should not be given. These items will satisfy the thirst and will reduce the vigour to suck and may lead to diarrhoea and helminthic infestation. Soon after birth, the baby is awake, alert and 'biologically ready' to breastfeed and initiation of breastfeeding is very easy. Later on, the baby goes to prolonged sleep and thereafter initiation may be difficult. Breastfeeding can be initiated even when mother is sedated or on IV fluids. In the first 2-\ days, small quantity of colostrum (10-40 ml) that is secreted is all what the baby needs. Colostrum is rich in protein and immunoglobulins. The mother and baby should be relaxed and comfortably postured during breastfeeding. Initially they may need some help. The baby's head may be resting on the elbow of the mother and she should support the baby with the same hand. She should also support the breast between the index finger and middle finger of the opposite hand during feeding. 'Rooming-in' is keeping the mother and the baby in the same room, 'bedding-in' is keeping the mother and baby in the same bed and 'mothering-in' is keeping the baby on the abdomen of the mother.

These measures ensure mother-infant bonding and skin-to-skin contact. Skin-to-skin contact, eye-to eye contact and mother—infant bonding lead to successful breastfeeding and emotional adjustment. Sucking should be continued as long as the baby desires to suck. This will satisfy the sucking instinct of the baby and will express the 'hind-milk' which is more nutritious. When sucking takes place only for a few minutes, the baby will get only the 'foremilk'. This will satisfy only the thirst of the baby and 'hindmilk' has to be fed to satisfy the nutritional demands and to ensure more milk production. It is better to suckle from both the breasts and generally babies finish feeding by twenty minutes. In case of twin babies, exclusive breastfeeding should be the choice.

3. Reflexes that Help in Breastfeeding

Three reflexes, namely rooting, sucking and swallowing, help the baby in breastfeeding. When the breast nipple is allowed to touch the cheek of the baby, the baby will open the mouth and initiate sucking. This is called rooting reflex. Sucking and swallowing become coordinated by 34 weeks of gestation. Sucking by the baby, prolactin (milk production) reflex and oxytocin (milk ejection) reflex initiate and maintain lactation in the mother. Sucking acts as the afferent stimulus for prolactin and oxytocin reflexes. Oxytocin reflex is also called 'let down reflex'. Let down reflex will be efficient only when the mother is relaxed and comfortable. Trickling of a few drops of milk from the opposite breast while initiating feeding (let down reflex) gives a positive clue about milk production and ejection. Colostrum is replaced by 'transition milk' in a few days and later on by 'mature milk'. It gradually increases till 6 months after delivery and later plateaus off. Average quantity of milk is 500-800 ml/day.

4.Common Problems during Breastfeeding

a) Flat or inverted nipples: The size of the resting nipple is not important. It is just a guide to show where the baby has to take the breast. The areola and the breast tissue beneath should be capable of being pulled out to form the teat. Occasionally, on attempting to pull out the nipple, it goes deeper into the breast; this is true inverted nipple.

b) Fullness and engorgement of the breast: Fullness of the breast is a frequent problem. However, milk flow continues and the baby can feed normally. If enough milk is not removed, engorgement of breast may result. Breast engorgement is an accumulation in the breast of increased amounts of blood and other body fluids, as well as milk. The engorged breast becomes very full, tender and lumpy. The common causes of engorged breasts are: giving prelacteal feeds, delayed initiation of breastfeeds, early removal of the baby from the breast, bottle-feeding and any restriction on breastfeeding.

Engorgement may cause the nipple to flatten, making it difficult for the baby to suckle effectively. The mother too avoids feeding because of a tight and painful breast. This leads to inadequate emptying, decreased production of milk and sometimes infection. Engorgement of the breast can be prevented by avoiding prelacteal feeds, keeping the baby on mother's milk both in hospital and home, unrestricted and exclusive breastfeeding on demand, and feeding in the correct position.

Once engorgement occurs, the baby should be breastfed frequently followed by expression of breast milk. The following measures will help relieve the problem usually within 24 to 48 hours:

■ Applying moist heat to the breast 3 to 5 minutes before a feed, followed by gentle massage and stroking the breast towards the nipple

■ Expressing enough milk to soften the areola, enabling proper attachment

■ Feeding frequently, every 2-2.5 hours or sooner at least for 15-20 minutes each side after milk let down has occurred

■ Feeding the baby in a quiet, relaxing place

■ Paracetamol may be needed to relieve the pain in the breast

c) Sore nipple and cracked nipples: If a baby is not well attached to the breast he or she sucks only the nipple (poor attachment). It is the most common cause of sore nipples in the first few days. If feeding continues in a poor position, it may lead to a cracked nipple because of physical trauma to this area and later to mastitis and breast abscess.

Oral thrush in the baby is another important cause of sore/cracked nipples, but it usually develops after a few weeks of birth. To prevent soreness and cracking of the nipples, attention should be paid to teaching correct feeding positions and techniques to the mother.

If there is pain in the nipple area during breastfeeding, mother should wait until the baby releases the breast, or insert her finger gently into the baby's mouth to break the suction first, so as to avoid injury to the nipple. Then the mother should be helped with attachment and repositioning the baby, so that it will not cause pain.

This is the test of correct attachment. Breastfeeding should be continued on the affected breast as it usually heals after correcting the sucking position. Medicated creams are best avoided as they may worsen the soreness and draw away the attention from the crucial issue.

d) Blocked duct: If the baby does not suckle well on a particular segment of the breast, the thick milk blocks the lactiferous duct leading to a painful hard swelling. This 'blocked duct' is not associated with fever. Treatment requires improved removal of milk, and avoiding any obstruction to milk flow.

Ensure that the infant is sucking in good position. Some authors recommend holding the infant with the chin towards the affected part of the breast, to facilitate milk removal from that section, while others consider that generally improved attachment is adequate. Explain the need to avoid anything that could obstruct the flow of milk, such as tight clothes and pinching or scissoring the breast too near the nipple.

Encourage the mother to breastfeed as often and as long as her infant is willing, with no restrictions, including night feeds. Suggest that she apply wet heat (e.g., warm compresses or a warm shower) over the breast.

e) Mastitis and abscess: If the blockage of the duct or engorgement persists, infection may supervene. The breast becomes red, hot, tender and swollen. Mastitis must be treated promptly and adequately. If treatment is delayed or incomplete, recovery is less satisfactory. There is an increased risk of developing breast abscess and relapse. A breast abscess may occur sometimes without mastitis.

The main principles of treatment are:

- Supportive counselling
- Effective milk removal
- Antibiotic therapy
- Symptomatic treatment

Antibiotic treatment is indicated if either:

- Cell and bacterial colony counts and cultures are available and indicate infection, or
- Symptoms are severe from the beginning, or
- A nipple fissure is visible, or
- Symptoms do not improve after 12-24 hours of improved milk removal.

5. How often to breastfeed?

Exclusive demand feeding is the ideal schedule to follow. There is no 'tailor made schedule', as milk production, sucking habits, stomach capacity etc., vary from baby to baby. Practise frequent breastfeeding initially and allow 'self-regulation' by the baby.

The mother can soon find out the average time interval the baby will rest after a feed. She can adjust her rest period in between. Almost all mothers can be relied upon to practise demand feeding. She will know why her baby is crying; e.g., is it to sleep? Is it due to illness? etc.

There is no need to give boiled and cooled water or fruit juice in between while the baby is on exclusive demand feeding. A full-term appropriate for gestational age (AGA) baby who is thriving well does not need multivitamin drops as well.

6. Burping after feeding

Babies tend to take in a lot of air during feeding.

This will lead to abdominal distension, colics, regurgitation etc. To get rid of this, the mother has to do 'winding' or burping. The baby can be put on the left shoulder, the head has to be supported with mother's left hand and then with the right arm support the buttocks and gently pat on the baby's back with the right hand.

Slowly air will escape and the baby will become comfortable.

Burping can also be done in other positions, e.g., place the baby prone in the mother's lap and gently pat on the back.

7. How to know whether breast milk is sufficient or not?

Most of the mothers and grandmothers are worried whether breast milk is sufficient or not? They may put pressure on the doctor to prescribe an infant milk substitute (IMS). When mothers come complaining that breast milk is not sufficient, a patient listening is required.

The following points will help in decision making. Is the baby frequently passing plenty of pale-coloured urine? Is the baby passing 1-6 liquid stools per day ? Is the baby gaining weight? If yes, the baby is getting enough milk. Next ask whether the mother is offering other feeds or feeding bottle in between.

This preload will decrease the vigour of sucking and will lead to incomplete emptying of breast and suppression of lactation. Feeding bottles cause 'nipple confusion'. Sucking from the bottle is a totally different and at the same time a more easier art compared to breastfeeding.

When both are offered, babies who generally tend to be lazy, resort to the more easier technique of bottle feeding. If baby requires mother's milk and bottle feeding, the complete emptying of the breast is very essential before the bottle feed is started.

8. How long to breastfeed?

Breastfeeding should be continued well into the second year of life. It is better to breastfeed till two years of life; the period of maximum brain growth and myelination. After 4-6 months of age, weaning foods should be offered in addition to breastfeeding.

9. Whether to breastfeed when the baby or the mother is ill?

Breastfeeding should be continued when the baby is ill. It should be discontinued only if there are gastrointestinal contraindications to oral feeding. It can be given during infections like rhinitis, viral fever, diarrhoeal diseases, respiratory infections, asthma etc. It is the most easily digestible food for the ill baby.

It will be the best pacifier to the sick baby and it often acts as a life saviour to many babies. It will satisfy the nutritional and fluid demands and will offer anti-infective and immunological factors.

Babies may suck with less vigour and so they may be offered more frequent feeds. Expressed breast milk (EBM) should be given if the baby cannot suck. This will prevent suppression of lactation.

Babies with congestive heart failure do very well on EBM as it has a very low sodium content. A few drops or small quantities of EBM given to sick babies on IV fluids has been shown to paint the gut with immunological factors, to promote gut function and to reduce the incidence of necrotising enterocolitis (NEC).

Breastfeeding can be continued during most of the maternal illnesses including viral fever, mastitis, breast abscess, UTI, TB, hepatitis B etc. If the mother is an open case of TB, she should be initiated on chemotherapy and the baby should be put on chemoprophylaxis.

In India, where TB is rampant and the chance for drug resistance is high, it is better to give INH and rifampicin instead of INH alone. After 3 months, ensure that mother is sputum negative and do Mantoux (Mx) test on the baby. If Mx test is negative, stop drugs and give BCG.

If Mx test is positive, continue treatment for a total of 6-9 months. In hepatitis B, the baby can be given hepatitis B specific immunoglobulin, followed by hepatitis B vaccination. In AIDS, as long as there is no caretaker or agency to take up the feeding and care of the baby, breastfeeding may be continued. This is the only possible option in many cases even though there is a chance of HIV transmission through breast milk. The chance for perinatal transmission of AIDS is almost 30%.

In mastitis and breast abscess, temporary stoppage and expression of breast milk from the affected side may be required. In postpartum psychosis, breastfeeding can be allowed under supervision. In sore nipples, ensure proper attachment of the baby to the areola, apply milk or oil on the nipple, expose the nipple to air and treat oral thrush in the baby by clotrimazole mouth paints. It can also be applied on the nipple.

10. Contraindications to Breastfeeding

Even though there are a few temporary contraindications to breastfeeding, permanent contraindications are very rare. Congenital lactose intolerance and galactosaemia are contraindications.

These are extremely rare conditions and such babies cannot be given animal milk also. In acquired lactose intolerance which is temporary, breastfeeding can be continued. Similarly, breastfeeding can be continued in the so-called ‘breast milk jaundice' thought to be due to 3-alpha 20-beta pregnanediol which may inhibit bilirubin conjugation.

11. The Advantages of Breastfeeding

The numerous advantages of breast milk are beyond description and understanding.

a) The physical benefits are optimum fluidity and warmth.

) It is very economical. The approximate cost to artificially feed a baby less than 6 months of age is estimated to be more than one-third of the average family income, i.e., almost more than the per capita income. We are unable to afford this at national level, community level or at family level.

c) It is very convenient. There is no need to carry or sterilize utensils. It can be made available anywhere at any time.

d) It is very physiological. It is the sweetest milk with high lactose content. The protein is easily digestible. The lipids are rich in essentia] fatty acids, long chain polyunsaturated fats (LCP), phospholipids and prostaglandin precursors. It supplies enzymes like amylase, lipoprotein lipase, bile salt stimulated lipases (BSSL), oxidases, lactoperoxidases, leucocyte myeloperoxidase etc. These enzymes increase digestibility and also act as defence against microbes. It also contains growth regulating factors, growth promoting factors and growth modulators. LCPs promote brain growth and reduce dyslexia and hyperactivity.

e) Biochemically it is superior. The protein is mostly whey protein (80%) rich in a-lactalbumin and lactoferrin and the rest is casein (20%) Lactablumin is rich in tryptophan which is the precursor of serotonin which plays an important role as neurotransmitter. Lactoferrin ensures absorption of iron and zinc and it is bacteriostatic as well. It binds iron and makes it unavailable to the bacteria. Alpha-casein and lactoglobulin, which are allergens, are absent in human milk. Even though protein is lower in breast milk, non-protein nitrogens are high The non-protein nitrogen in breast milk plays a significant role in the growth and development of the infant. It is also rich in binding proteins that bind thyroxin, Bp , vitamin D etc. The calcium-phosphorous ratio is more than 2 and it ensures calcium absorption.

f) Immunologically, it is extremely safe and is non-allergenic. It supplies passive immunity. Macrophages, lysozymes and complements offer immunity to the baby. It also supplies acute phase reactants. Nutritional composition of breast mik supports the gut microflora which plays essential role in enhancing the immunity of the infants. It contains immunoglobulins, secretory components and secretory IgA (SIgA). SIgA offers surface protection to the respiratory and GI tracts. Immunoglobulins other than SIgA are generally split up in the gut. SIgA are produced in the mammary gland by plasma cells that originate from immunocompetent lymphoid tissue, namely, gut associated lymphoid tissue (GALT) and bronchus associated lymphoid tissue (BALT) by virtue of enteromammary and bronchomammary axes. IgG and IgM levels become undetectable in the second month of lactation. Secretory IgA may resist proteolytic degradation in the neonatal gut and may offer some protection. Breast milk supplies T and B lymphocytes. T lymphocytes are responsible for transfer of immunological memory. The ‘bioactive factors’ in milk are proteins like lactoferrin, non-protein nitrogen like nucleotides, enzymes, hormones, growth factors, factors for host defence, oligosaccharides, mucins, probiotic substances and polyamines. The bifidus factor promotes the growth of lactobacilli. Polya-mines like spermine, spermidine and putrescine promote cell growth and differentiation. Putrescine is a precursor of gamma amino butyric acid (GAB A). GAB A is an inhibitory neurotransmitter.

g) Psychologically, it ensures emotional stability and personality development due to close contact with the mother and mother-infant bonding.