

Revealed and Unrevealed Secrets of Human Milk Banking

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I. INTRODUCTION

Breast feeding is the best feeding

The first human milk bank in India was started on November 27, 1989 by Dr. Armeda Fernandez at Sion Hospital in Dharavi, Mumbai. Mother's milk provides nutrition, helps babies grow and protects them from infection and diseases. It is even more important for sick babies and those born prematurely. It gives them a better chance of survival. A large number of vulnerable babies are not able to access mother's own milk for short or long term due to unavoidable reasons like mother's sickness, death and delay in milk production. In such cases, donor human milk from a milk bank can be life-saving. [3]

II. HUMAN MILK BANKING

Milk banks collect, screen, process and dispense human milk donated by lactating parents who are not biologically related to the infants who will receive their milk. Milk banks around the world play an essential role in the community where they are located. Their priority is saving babies lives by providing prescribed human milk when a parent's own breast milk isn't available. [2]

Need and Importance of human milk banking

According to the World Health Organization, every year, more than 20 million infants are born under 2.5 Kg weight. Over 96% of them are in developing countries. The low-birth-weight (LBW) infants are at risk of retardation, infectious disease, developmental delay and death during infancy and childhood. Though WHO recommends that the infants should be fed by the mother's own milk, but in case the mother's milk is not available, the alternatives include breast milk from a donor or formula milk. [1]

Neonatal ICUs (NICU) admissions are usually critical cases of infants who are either premature or suffering from acute health conditions caused due to prematurity. In many such cases of premature births, mothers are unable to lactate properly and therefore, the second option is to turn to donor milk from human milk banks which are vital to ensure the baby's growth and development. Human milk banks have been prevalent for quite some time but it was only recently that it gained acceptance and picked up the pace. Having said that, a human milk bank (most commonly known as breast milk bank) is an asset from where hospitals can

acquire breast milk and stay assured of the nutritional impact that is necessary for babies' survival. [9]

One among eight babies is born prematurely. This is the cause behind several complications including digestive anomalies like an intestine infection which can be fatal for the infant. Breast milk protects the baby from succumbing to such complications due to the presence of immune factors. Most NICU mothers (almost 72%) of premature infants are unable to provide the right quantity of milk for their babies. Also, factors like stress, ill-health, medications, multiple births, etc. may hamper the process causing inadequate lactation or non-lactation. [10]

NICUs should get in touch with human milk banks in the case of the following scenarios:

- Premature baby or considerably small for gestational age.
- Immunity disorders.
- Post-surgical nutrition.
- Renal Failure.
- Short Gut Syndrome.
- Metabolic Diseases.
- Bronchopulmonary Dysplasia.

The process of human milk banking

1. **Donor mother registration and screening** - Milk donors are screened for health concerns and communicable disease. The donor mothers should meet the following basic requirements:
 - In good health and able to breastfeed, with a surplus of milk.
 - Willing to undergo a thorough health history screening for communicable diseases.
 - Non smoker
 - Non drug and alcohol user [4]
2. **Milk expression of the donor mother** – Breast milk expression can be done either manually or by a breast pump. Manual expression is a low cost and effective means of expression and associated with the least risk of contamination.

3. **Pasteurization and testing** – It is necessitated by the fact that majority of milk samples grow one or more bacteria before milk pasteurization. The fresh raw donated milk is immediately pasteurized after collection. Holder method of pasteurization is widely used. [10]
4. **Storage in freezer** – Fresh raw breast milk is safe for four to six hours at room temperature. It can be stored in the freezer compartment of the refrigerator for five to seven days and in the deep freezer for six months.
5. **Prescription for babies** – Donor milk is prescribed for babies who are in need after informed consent from physician and recipient's parents [5]

III. MERITS OF DONATING HUMAN MILK

- Donating milk helps prevent breast engorgement among mothers
- Saving lives of many needy babies in the hospital
- Safeguards children from obesity through necessary balances and checks on the amount of milk they consume
- Lowers the risks of heart ailments during adulthood which is attributed to high cholesterol levels in human milk consumed by the child which makes their liver to better metabolize cholesterol content throughout the life
- Reduced risk of juvenile diabetes through release of lesser insulin among the child and thereby prevents diabetes mellitus
- Enhances formation of adequate amount of myelin among children which safeguards them from running the risk of getting struck by multiple sclerosis in later childhood
- It contains immune components that safeguard babies from any allergen attacks in the early stages of life [6]

IV. ETHICAL CONSIDERATIONS FOR HUMAN MILK BANKS

- Women who are donating breast milk need to support their own infant's needs prior to donating
- Parents should not be pressured or coerced into donating or receiving human milk
- Written informed consent obtained from donor mother
- All infants should have equitable access to donated human milk irrespective of gender, race, social class, religion, etc
- The donor mothers should be screened for suitability of donation by reviewing her health records [7]

V. CONCLUSION

Breast milk, often referred to as liquid gold, is packed with high nutrition which cannot be replicated or replaced. It is clear that artificial formula will never provide the broad range of benefits of human milk. There is an urgent need to establish milk banks across the country, especially in the large neonatal units of all hospitals. Systems of newborn care can be strengthened by integrating Human Milk Banking with health-care services and Breast Feeding support, which will bolster the infrastructure, human resources, and technical and financial means necessary for strong milk banking systems and improve national strategies for reducing neonatal and infant mortality.

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