



Human Breast Milk Banks- A Review

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DOI: 10.31080/ASMI.2020.03.0497

Received: January 07, 2020

Published: January 27, 2020

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Abstract

Breast milk, also called liquid gold provides nutrition to the babies and is an exclusive source of nourishment for first six months of life and remains part of healthy infant diet for first two years of life and beyond [1,2]. The breast milk helps the babies to grow and protects them from various infectious diseases [3] like prematurity, malabsorption, short-gut syndrome, diarrhea, intolerance and immunodeficiency diseases [4] as the mother's milk transfer IgG antibodies which develop the natural acquired immunity of the babies. It gives them a better chance of survival [3].

Keywords: Breast Milk; Milk Banks

Breast milk banks

In India, over 1.4 million deaths of children under the age of 5 occurs and almost 50% of these cases are babies under 28 days. Breast milk place an important role in preventing these deaths [2]. According to UNICEF India, the mothers in both high and low income countries face challenges such as poor healthcare and nutrition [3]. In a recent study, it has been reported that a large number of babies are not able to access mother's own milk for short or long term due to reasons like mother's sickness, death or delay in milk production [3].

Breast milk bank is an organization that collects the donated human milk, screens for quality, processes by ensuring milk safety and makes it available for infants in need (premature and critically ill-babies) [1,2]. These are the comprehensive lactation management centres (CLMC) and lactation management units (LMU), depending upon the level of health facilities where these units are established under the guidelines of Ministry of Health and Family Welfare [3]. In India, Delhi-NCR's first existing human breast milk bank is Amaara, an initiative by Breast milk foundation, Fortis and La Femme. In a report in Indian Awaaz, on October 2019, the gov-

ernment has set a target of ensuring 70% infants to have access to breast milk by 2025, the target will be increased to 100% [5].

Process of donating milk in milk banks

There are various steps for the process of donating milk in blood banks:

- Donor mother registration and screening- Any lactating women voluntarily willing to donate her surplus expressed milk can be a part of it [3]. There are certain conditions like- the mother must be in good health [3]; should be negative for HIV and VDRL; not under any drugs; free from evidence of hepatitis [1]. After approval from the doctor, there is a consent form for the women and the doctor which ensures that neither the donor mother nor the infant will suffer if the mother donates milk [4].
- Milk expression of the donor mother- For collection of mother's milk, hand expression is the best method, but some centres uses sterilized hand pumps. The milk is collected in glass containers or steel utensils [4].

- **Pasteurization and testing-** Before pasteurization, bacterial counts on each donor's milk is done according to the following to ensure proper pasteurization in case of heavy microorganism load in the milk, if the colony count [4]- $<10^3$ cfu- milk is used $>10^5$ cfu- milk is not used 10^3 - 10^5 cfu- milk is only used if organisms are skin commensals For pasteurization, temperature of 56°C for 30 min is recommended because this temperature inactivates most of the bacteria and virus like HIV 1 and HIV 2 while retaining the immunological and nutritional properties of breast milk [4].
- **Storage in freezer-** The breast milk after pasteurization is stored in freezers for further use. This maintains the shelf-life of the milk and preserves it (Figure 1) [4].



Figure 1: Storage of pasteurized human milk.

Advantages of donating milk

- **Prevention of breast engorgement:** Breast engorgement is a condition which occurs in females during pregnancy making their breasts firm and swollen due to which it becomes difficult for the babies to breastfeed [1].
- **Use of excess milk:** When a mother produces more milk than required for the baby to drink, the excess milk can be utilized in donations [1].
- **Save a life:** Donating excess of milk not only gives relief from pain to the mother but also helps in saving lives of many needy babies in the hospital [1].

Conclusion

The donation of breast milk is a noble cause to save the lives of many needy babies. Due to prevailing health issues in the mothers and awareness regarding human milk banks, the government of India has taken an initiative to establish MAA- Mothers Absolute Affection- a nationwide program of Ministry of Health and Family Welfare to promote breastfeeding and Vatsalya- Maatri Amrit Kosh- a program established in collaboration with Norwegian government. Breastfeeding and milk donation also helps to keep a mother healthy and maintains the hormonal balance of an individual. Therefore, keep donating!!!!!!

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