



Human Milk Bank: A Way to Ensure the Right to Human Milk for Every Child

Vedamurthy R, Pauline Sharmila, Kul Pooja, Wichamjailiu Ringkangmai

Department of Pediatric Nursing, Faculty of Nursing, SGT University, Gurugram (Haryana)-122505, India

E-mail id: vedamurthy_fnur@sgtuniversity.org or vedamurthy29@gmail.com

ABSTRACT

For first six months of life, breastmilk provides all the nutrients to the infant. This duration of life, a newborn only need breastmilk and no other liquids or nutrients. Both colostrum and mature breastmilk contain antibodies, good bacteria, and other agents that help lower baby's risk of infections and conditions like gastroenteritis, respiratory tract infections, ear infections, type-1 diabetes and type-2 diabetes, and obesity. Breastmilk is also easy to digest and absorbed in the baby's GI system. Breastfeeding is crucial for a baby's brain development as well as their eyesight, speech, jaw, and mouth development. Due to some reason baby will not receive breastmilk, for those babies also can get the breast milk from the milk bank. Before donating the milk, the mother should undergo some investigation. Since there is a limited supply of donor breast milk, it should be given to newborns in hospitals who are ill since they are most at risk and are most likely to benefit from an exclusively human milk diet.

Key words: Breastmilk, human milk, baby, nutrients

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INTRODUCTION

Due to the fact that human milk is still the only milk that is specifically crafted and perfectly matched for a baby, breastfeeding is still the finest way of infant nutrition. It should be encouraged for all mothers to breastfeed their newborns. Breast milk should be expressed and given to the baby when a mother is unable to breastfeed her child directly due to a circumstance. If a mother's own milk cannot be obtained or is insufficient, pasteurized donor human milk (PDHM) is the next best option [1]. India has difficulties due to the high frequency of low birth weight infants and the high death and morbidity rates associated with VLBW. Low birth weight babies accounts for roughly 20% over all hospital admissions in India. These infants' risk of infection can be greatly decreased by breast-feeding them. To help the thousands of low birth weight and preterm babies, the government, medical professionals, and civil society must work together to spread the idea of human milk banking [2]. According to a French study, the typical donor mother was of normal childbearing age and had a wonderful family. Nearly half of them did not have a job outside the home, and many of them were employed in the health and social services sectors. The mothers' motivating factors for donating were mostly humanitarian, and they all had a positive outlook on life. Donating milk is a caring and compassionate behavior. The majority of nations do not support donors, but in a few, they do so in a little amount of money in exchange for their actual out-of-pocket expenditures.

History

- Under Armida Fernandez's leadership, the Sion Hospital in Mumbai, India, established the first human milk bank in Asia in 1989. Neo-natologist Jayashree Mondkar currently oversees the milk bank. Every year, this milk bank provides services to close to 3,000 to 5,000 infants. In the Neonatal Intensive Care Unit, unwell and vulnerable babies receive close to 800 to 1200 litres of human milk annually.
- The Vatsalya—Maatri Amrit Kosh, the first milk bank, was founded at Lady Hardinge Medical College in 2017. It was founded as a part of the Norway-India Partnership Initiative in cooperation with the Norwegian government and Oslo University (NIPI).
- The "Yashoda" Human Milk Bank was created in September 2013 at the Pimpri, Pune, Maharashtra location of the Dr. D. Y. Patil Medical College, Hospital, and Research Center. It is the country's first private medical college to develop a human milk bank. And was founded with the help of the Rotary Club of Nariman Point, Mumbai.

- The Comprehensive Lactation Management, Training and Research Center (CLMTRC) and a sophisticated human milk bank were established on January 31 2019.
- At the Dr. Panjabrao Deshmukh Medical College in Amravati, the Rotary Club of Amravati Midtown developed the first human milk bank in Central India in 2016. Currently, it has three units [3].

What is a Human Milk Bank?

Breast milk is gathered, processed, and stored in human milk banks, which services are offered by hospitals or nursing homes. This milk is given voluntarily by breastfeeding women in good health.

The nutritional needs of infants who were biologically born to other moms are crucially met by this milk. Given that it provides all the necessary nutrients for a newborn baby's growth and development, some people refer to this milk as "liquid gold [4]."

Who Receives Milk from Donors?

The following individuals are the most frequent users of donor milk:

Newborns with gastrointestinal defects having gastrointestinal surgery resulting to short bowel syndrome. Infants who are premature, particularly those whose birth weight is less than 1,500 grams, as a result of their elevated risk of infection and necrotizing enterocolitis. When the mother is temporarily unable to fully breastfeed her child, such as when the mother is sick or in the hospital; when weaning from parenteral nourishment; when metabolic abnormalities, particularly diseases involving amino acids; and when the mother's own milk has not yet begun to produce (initial days after birth). Premature newborns are not only the biggest group of recipients of donor milk, but they also greatly benefit from consuming human milk. Strong trophic benefits that human milk has on the developing gut allow for full enteral feedings to occur earlier than they would otherwise. Strong defences against sepsis and necrotizing enterocolitis, two diseases with high mortality rates, are provided by human milk for premature infants. Since some mothers instinctively reject to its use, donor milk is only given once its source has been told to the mother and she has given her agreement. Preterm birth shortens pregnancy, which in turn shortens the period of preparatory lactogenesis. This is why moms of premature infants frequently cannot or only occasionally can generate enough amounts of milk. Additionally, suckling by an older baby is more successful at stimulating and maintaining milk production than the required mechanical milk expression. Older infants and kids with a range of illnesses—including severe food allergies or feeding intolerances, failure to thrive on formula, rotavirus enteritis that won't go away, and cancer chemotherapy—are given donor milk. Adopted children occasionally receive donor milk. Additionally, there are numerous case reports of adult patients with unique medical needs receiving donor milk, such as IgA-deficient liver transplant recipients receiving additional IgA or adult cancer patients [5].

Is Donor Milk Safe?

Sometimes, this possibility raises concerns due to the likelihood of the transfer of disease germs. The probability of disease transmission is quite limited because to current donor screening and pasteurisation procedures for donor milk. In actuality, there hasn't been a single instance of a disease being transmitted in recent years through donor milk that has been banked. It's unknown if that also applies to unofficial milk purchases [5].

Benefits of human breast milk for the preterm infant

A systematic comparison of breast milk and formula cannot be done for ethical reasons. However, it has been demonstrated that newborns who receive human breast milk in the neonatal intensive care unit (NICU) had fewer serious infections, less necrotizing enterocolitis (NEC), and less pathogenic microbial colonization [6]. According to studies, newborns fed expressed human breast milk experience shorter hospital stays. Importantly, there is additional evidence showing that preterm infants who are breastfed have better neurodevelopmental outcomes; however, it can be challenging to account for the numerous preterm birth risk factors [6].

Who can donate breast milk?

A healthy woman who can adequately feed her infant and still have extra milk is the ideal donor of breast milk.

- She must fulfil the requirements listed below to be eligible to donate.
- She must be free of any infections or illnesses.
- She must undergo tests to rule out syphilis, hepatitis B, hepatitis C, and HIV.
- She is not allowed to drink alcohol while breastfeeding.
- She cannot have had a blood transfusion or organ transplant within the last 12 months.
- She must not be taking any radioactive medications or be around environments that are harmful chemically.

- She must not have mastitis or nipple or areola fungal infections. Before becoming a donor, all potential donors must pass a blood test [7].

Storage

- Fresh breast milk can be kept at room temperature for three to four hours or in a refrigerator at four to eight degrees Celsius for twenty-four hours.
- If kept at -20°C in a deep freezer, it can be kept for three months.
- The home refrigerator's deep freezer section should be kept at a temperature of -4 to -8°C for milk intended for donation [7].
- Pasteurized milk should be preserved in a designated freezer or freezer area while being careful not to distribute it until the culture test is negative.
- The same container can be used for storage in addition to pasteurisation.
- Due to the risk of contamination, it is not recommended to transfer pasteurised milk in other containers.
- Processed milk that has no culture should be kept in a container that is well-sealed, properly tagged with the expiration date and other pertinent information, and kept at a temperature of -20°C.
- It can be kept for three to six months. Prior to distribution, random cultures of preserved milk can help with quality control [8].

Are there any specific breast milk storage recommendations?

In addition, the following in mind when storing the breast milk:

- Prior to touching or expressing the milk, wash your hands.
- Make use of rinsed, hot, soapy-water for washing the containers.
- If breast milk won't be consumed within 24 hours, freeze it.
- You can mix cooled milk with other cooled or frozen milk as long as the amount of cooled milk isn't too large to defrost a batch of milk that was already frozen.
- Before keeping the milk, write the date on the container [9].

During pandemic

The COVID-19 pandemic has dramatically changed how donor human milk banks operate in a number of countries, including China, Italy, and India. It makes sense that this effect on donor milk operations might reduce the milk banks' capacity to provide enough pasteurized donor milk to neonates who need it. Contrary to the industrialised world, the bulk of donors in impoverished nations are neonatal hospitalised mothers who spend a lot of time in the hospital. By enabling women to express their milk using breast pumps throughout their prolonged hospital stays, milk donation becomes more feasible. A mother can voluntarily give whatever milk she expresses in excess of what her child needs. The continued donation of human milk in poor countries during the epidemic may be aided by the milk banks' close proximity to donors. Nevertheless, processes must be put in place to: verify the milk is microbiologically sound; and take precautions against any negative effects that might arise from the donor being a COVID-19 carrier who is asymptomatic. At the Comprehensive Lactation Management Centre at Lady Hardinge Medical College in India, various operational changes were undertaken in order to facilitate breastfeeding and human milk donation during the pandemic and to comply with international and national laws [10].

Below is a list of human milk banks in India:

1. Divya Mother Milk Bank, Udaipur, Rajasthan
2. Lokamanya Tilak Hospital (Sion Hospital), Sion, Mumbai
3. Deena Nath Mangeshkar Hospital and Research Centre, Pune
4. SSKM Hospital, Kolkata
5. Institute of Child Health, Egmore, Chennai
6. King Edward Memorial Hospital (KEM), Parel, Mumbai
7. Amara Milk Bank (in collaboration with Fortis la Femme), Greater Kailash, New Delhi
8. Sir JJ Group of Hospitals, Byculla, Mumbai
9. Cama Hospital, Fort, Mumbai
10. King George's Medical University (KGMU), Uttar Pradesh, Lucknow [11].

CONCLUSION

Breast milk is very essential for all the newborn baby, due to certain condition the mother is not able feed the child. In that case the mother can get the human milk from Haman milk bank for providing adequate nutrition to the child. In addition to other known long-term advantages, breast milk has considerable advantages for the newborn, including the potential for the transmission of bioactive compounds such anti-infective antibodies. The primary goal of human milk banking is to support and strengthen breastfeeding

worldwide. The supply of human milk is a crucial issue for healthcare quality since it has significant protective benefits on premature infants. Many people support using donor milk.

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