

# Three - Minute Article for Parents

## Parental Guide for Use of Human Milk Fortifiers in Preterm Neonates

**Rakesh Kotha MD DM**

Associate Professor of Neonatology, Niloufer Hospital Hyderabad.

<https://orcid.org/0000-0002-3319-5217>

**Abstract:** Prematurity is a major global problem because nature pushes people to be born early. This article addresses the common concern about adding fortifier to breast milk for premature babies. This article aims to educate parents about the different forms of breast milk fortifiers and their advantages and disadvantages. This article suggests that the better tolerability, less intestinal inflammation and availability in liquid form, which allows us to start earlier, as well as the less denaturation of the inflammatory mediators of milk, leads people to prefer human milk - based fortifiers over cow's milk - based fortifiers. The biggest disadvantage, however, was the high cost.

**Keywords:** bovine milk - based fortifiers, human milk - based fortifiers, milk fortification, neonatal nutrition, preterm infants

Preterm infants with high nutritional needs require more than just human milk to thrive. Consequently, fortification of milk is needed. Fortification helps in the rapid growth of the baby, leading to early discharge and decreasing the cost of hospital stays. There are two fortifiers available: human milk - based fortifiers (HMBF) and bovine milk - based fortifiers (BMBF). Studies show that HMBFs reduce the risk of retinopathy of prematurity, sepsis, and necrotizing enterocolitis (NEC) compared to BMBFs<sup>1</sup>.

There is still concern about exposure to cow milk protein and its potential negative effects<sup>2</sup>. To evaluate the differences between the two fortifiers, we conducted a study at Niloufer Hospital, Hyderabad, India. We selected fifty babies less than 34 weeks of gestational age between 1 - 1.5kg, with twenty - five babies given HMBFs and the other twenty - five babies given BMBFs. Our study showed that weight gain was similar in both groups. However, feed intolerance was 16% in the HMBF group and 28% in the BMBF group, NEC was 4% in the HMBF group and 12% in the BMBF group, sepsis was 12% in the HMBF group and 20% in the BMBF group, and hospital stay duration was thirty - three days in the HMBF group and thirty - six days in the BMBF group<sup>3</sup>.

In conclusion, our study revealed that, although weight gain is similar, HMBFs are more tolerable and have a lower risk of complications than BMBFs. However, the major drawback is the high cost of HMBFs. However, with their likelihood of early discharge and fewer complications, leading to lower hospitalization costs, HMBFs should be considered. HMBF fortifier is available in liquid form, which helps with tolerance and can be started easily unlike BMBF.

Based on evidence from science, this advice has been given to parents. Availability of HMBF in a particular country is also a concern.

### References

- [1] Taylor SN. Solely human milk diets for preterm infants. *Semin Perinatol* [Internet].2019; 43 (7): 151158. Available from: <http://dx.doi.org/10.1053/j.semperi.2019.06.006>
- [2] Rigo J, Hascoët J - M, Billeaud C, Picaud J - C, Mosca F, Rubio A, et al. Growth and nutritional biomarkers of preterm infants fed a new powdered human milk fortifier: A randomized trial. *J Pediatr Gastroenterol Nutr* [Internet].2017; 65 (4). Available from: <http://dx.doi.org/10.1097/mpg.0000000000001686>
- [3] Kotha R, Konda KC, Pandala P, Maddireddi A. Effect of human milk enriched with human milk - based fortifier (HMBF) versus bovine milk - based fortifier (BMBF) on growth and morbidity among very low birth weight (VLBW) infants – A randomized controlled trial. *J Pediatr Neonatal Individ Med* [Internet].2022 [cited 2024 Jun 12]; 11 (1): e110104–e110104. Available from: <https://jpnim.com/index.php/jpnim/article/view/e110104>