



Effect of breast milk on infant intestinal flora

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Abstract

The best food that can meet all the nutritional elements that babies need is breast milk. Breast milk contains nutrients such as vitamins, minerals, iron, water, fat, protein and carbohydrates in necessary amounts for the baby. Molecules found in breast milk are responsible for the development of the infant's immune system and gut microbiota. It is known that breastfed babies are more resistant to diseases such as asthma, diabetes and diarrhea. In this proceeding we will briefly discuss the effect of the breast milk on the immunity and microflora.

Introduction

Breast milk is the most important nutritional source for babies as it contains all the nutritional needs of the baby in the required amount. In addition to containing carbohydrates, fatty acids, nucleotides, immunoglobulins, lysozyme, lactoferrin, polyamines, cytokines, living immune cells and other immune regulatory substances, it is a constant source of bacteria for the infant gut. Breast milk contains bacteria with potentially probiotic properties. These bacteria play an important role in the infant gut. It is thought that breastfed babies are protective against respiratory diseases and diarrhea, and in the long term, it may be protective against diseases such as obesity and diabetes [1]. It is recommended that the baby be fed only with breast milk in the first 6 months after birth, and continued breastfeeding with appropriate complementary foods until the age of 2 years [2]. Breast milk adapts to the baby's health and age. For this reason, if we compare the milk of two different mothers who gave birth prematurely and those who gave birth normally, their contents are different from each other. Breast milk is examined according to the period it is secreted and its composition. The milk secreted within the first 5 days after birth is called colostrum. It is richer than other periods in terms of zinc, sodium, vitamin A, vitamin D and antibodies. Apart from the nutrients it contains, colostrum has a protective effect against infections. Transitional milk is secreted between the 5th and 15th days. Mature milk is the milk secreted after the 15th day and approximately 88% of its composition is water [3]. Compared to milk of animal origin, breast milk has a higher oligosaccharide content. Monosaccharides, D-glucose, D-galactose, L-fucose, N-acetylneuraminic acid and N-acetylglucosamines form breast milk oligosaccharides. The production of breast milk oligosaccharides (BMO) is genetically determined. Secretory and Lewis blood group genes plays an important role in determining the BMO profile. Lactose can be converted into lacto-oligosaccharides and lactuloses, both of which are involved in the growth of probiotic bacteria for intestinal function [4]. The prebiotic feature of breast milk triggers the growth of beneficial bacteria such as *Bifidobacterium infantis* in the gastrointestinal tract of the baby and protects the baby against the proliferation of pathogenic bacteria [5]. In addition, breast milk oligosaccharides prevent microorganisms from adhering to epithelial cells. Another feature is that they interact with immune cells [6]. They balance cytokine production and regulate T-cell responses. Sialic acid plays a role in nerve cell transmission and memory. While 2.9% of sialic acid in breast milk is free, 73% is bound to oligosaccharides. In the baby, sialic acid production is insufficient for brain development and myelination in the liver and it meets this with breast milk [4].

Results

Breast milk is a very important food source for the baby because of the nutrients it contains. In the first 6 months, the baby should be fed with breast milk. The effect of breast milk on the development of the baby and the intestinal flora of the baby is quite high. It has been proven by research that breastfed babies are more resistant to diseases than other babies [1,2].

Conclusion

The content of the breast milk has all the necessary nutrients for the development of the infants in their first 6 months. Infant nutrition should continue with appropriate complementary foods and breast milk from 6 months to 2 years of age. Breast milk is the source of bacteria in the infant intestinal flora. Microbiota is regulated by the probiotic and prebiotic properties of oligosaccharides in breast milk. They also interact with immune system cells. Considering all these important effects, mothers who have just given birth should be made aware of breastfeeding [1-6].

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