



Colostrum: The Golden Milk for Infants' Health



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Abstract

Colostrum is the first milk that is produced in the first few days after delivery. It provides good growth, strength and longevity as well as overall health protection for the infant. Colostrum can pass immunity to a wide variety of disease-causing pathogens to infants. This includes protection from bacteria, viruses, fungi, and even protozoan parasites like giardia. Not even antibiotics can deliver such broad-spectrum protection. Moreover, pathogens do not develop resistance to colostrum as they do to man-made antibiotics. In other words, colostrum does not contribute to the development of antibiotic-resistant bacteria. Despite of this fact, in societies where colostrum is considered heavy, thick, dirty, toxic and harmful to children's health, it is believed to cause diseases. A portion of colostrum is, therefore, discarded to alleviate this effect.

Keywords: Colostrum; Golden Milk; Health; Infant; Giardia

Introduction

Colostrum "golden milk" is the first milk that is produced in the first few days after delivery. It is thick, sticky, and clear to yellowish in color. It is considered as the "golden milk" because it contains proteins, vitamin A and a maternal antibody important to the newborn's nutrition until lactation is fully established [1,2]. Colostrum provides good growth, strength and longevity as well as overall health protection for the infant. Colostrum can pass immunity to a wide variety of disease-causing pathogens to infants. This includes protection from bacteria, viruses, fungi, and even protozoan parasites like giardia. Not even antibiotics can deliver such broad-spectrum protection. Moreover, pathogens do not develop resistance to colostrum as they do to man-made antibiotics. In other words, colostrum does not contribute to the development of antibiotic-resistant bacteria [3,4].

Lactoferrin, protein found in Colostrum, comprises about 6% of the total protein in colostrum. It is an iron-binding protein closely related to transferrin, which is a protein that transports free iron in the body. The primary way lactoferrin destroys bacteria is by binding free iron, which is otherwise needed by many bacteria and fungi to reproduce.

Lactoferrin can prevent the colonization of *Haemophilus influenza*, the primary cause of ear and respiratory infections in children, by inactivating its colonization factors. It also has the ability to penetrate the cell walls of bacteria, which allows lysozyme to enter the bacterial cell, causing them to lyse, or burst [5]. Despite this fact, in societies where Colostrum is considered

heavy, thick, dirty, toxic and harmful to children's health, it is believed to cause diseases. A portion of colostrum is, therefore, discarded to alleviate this effect [6-9].

Factors Associated with Colostrum Avoidance

About 20% of mothers who gave birth in health institution and 42.2% of those mothers who gave birth at home discarded Colostrum [10]. The common reasons to discard colostrum in India were: colostrum is dirty (25.9%), harmful (23.0%), baby will become ill (13%), causes pain in the abdomen (3.4%), too thick (2.0%) [11], advice given by elders (10.3%), not good for health (1.4%), child unable to suck (1.4%) and 0.6% difficult to digest [12]. In Bangladesh, in 2009, in-depth interviews showed that the only barriers for feeding Colostrum were that "it looked bad" or "grandmother advised not to give colostrum for infants". However, grandmothers were the major providers of information (28%) about proper infant feeding practices followed by Doctors (24%) and other health personnel (17%) [13].

In Southern Ethiopia, in 2010, knowledge regarding the necessity of giving Colostrum was much lower and less than two thirds of babies (59.6%) were given colostrum. In Northern Ethiopia, 48.5% of mothers had knowledge and perception about giving only colostrum until breastfeeding is established [14]. A cross sectional community based study in Arba Minch Zuria of Ethiopia in 2012 shows that, 89% of mothers considered provision of colostrum as a vaccine to infants to prevent diseases [15]. In Raya Kobo district of Ethiopia giving birth at

home, mother-heading households, lack of awareness on the advantages of colostrum and late initiations of breastfeeding were statistically associated with higher odds of colostrum avoidance practices [9].

Role of Colostrum on Child Nutritional Status

In Afar Regional state of Ethiopia, a cross sectional study revealed that Colostrum feeding is associated with the lower probabilities of under nutrition (stunting, wasting and underweight) among preschool children [16]. Infants who fed on colostrum were less likely to be stunted and wasted compared to children who were deprived of colostrum [12]. In West Gojjam of Ethiopia, children deprived of colostrum were about two times more likely to be stunted than children who had been fed colostrum [17].

Conclusion

This mini review revealed that Colostrum is discarded mainly due to misconceptions on its health values. This could have implications for health service providers, policy makers and program managers in designing intervention strategies aimed at improving colostrum feeding. Therefore, promoting institutional delivery, timely initiation of breastfeeding and creating awareness on the advantages of colostrum feeding will be important to promote colostrum feeding. This will in turn improve child nutritional status.

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