ARTICLES

Effect of topical application of breast milk and dry cord care on bacterial colonization and umbilical cord separation time in neonates

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[**Abstract**] **Objective** The purpose of this study was to compare the effect of topical application of breast milk and dry cord care on bacterial colonization and cord separation time in neonates. **Methods** As part of a longitudinal study, researcher had obtained an umbilical swab either from the base of the cord three hours after birth and the third day of life and call to mother for recording cord separation time. A population-based sample of 118 newborn neonates and their mothers were investigated at Omolbanin Hospital in Mashhad, Iran. Rate of bacterial colonization, and cord separation time were measured. **Results** The most common cultured organisms were *S. Epidermidis*, *S. Aureus*, *E. Coli* and *Klebsiella Pneumoniae* in the umbilical stump, there were significant differences between two groups in colonization rate. Cord separation time in breast milk group was shorter than dry cord care group ($P = 0.016$). **Conclusion** Topical application of breast milk on umbilical cord care leads to reduced bacterial colonization and cord separation time and can be used as easy, cheap, non injury methods for umbilical cord care.

[**Key words**] breast milk; bacterial colonization; dry cord care; cord separation time

INTRODUCTION

Each year approximately 1 million newborns world-wide die from infection caused by bacteria that enter the body via the umbilical cord[1]. The world health organization (WHO) estimate that 4 million children die during the neonatal period each year, with most death occurring in developing countries. Infections are the most important cause of neonatal mortality. It is estimated that 300,000 infants die annually from tetanus, and a further 460,000 die because of severe bacterial infections, of which umbilical cord infections are an important precursor[2]. Necrotic tissue of the umbilical cord is an excellent medium for bacterial growth and becomes rapidly colonized with bacteria from the maternal genital tract and from the environment immediately after birth[3]. A possible consequence of bacterial colonization is cord stump infection, a factor that can greatly increase morbidity and mortality for infants in developing countries[4].

The most likely offending organisms are *Staphylococcus aureus*, *Escherichia Coli*, and group B *streptococcus*[5].

Intervention introduced in both developed and developing countries to reduce exposure of the cord to infectious pathogens include clean cord cutting, handwashing before and after handling the baby, bathing of the infant with antimicrobial agents and hygienic delivery and postnatal-care practices and application of antimicrobial to the cord, rooming-in mother and neonate particularly in the special room and decrease nurses and health cares to reduce risk of omphalitis and death[1,2,6].

A wide variety of cultural practices and beliefs are associated with care of the umbilical cord. Some are beneficial and others are associated with increased risk of illness; however, as the WHO has reported, practices

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