Umbilical Cord Care and Infection
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PURPOSE

The aim of this presentation is to explore the effectiveness of the dry cord care method and antiseptics on infections of the umbilical cord in neonates.

INTRODUCTION

The umbilical cord is made of blood vessels and connective tissues that connects the baby and placenta in the uterus (Quattrin et al. 2016). After the birth of the child, the umbilical cord is separated and the umbilical area typically dries and falls off (Quattrin et al. 2016). Until the umbilical cord stump falls off, this is a passage for infection that can lead to a localized infection such as omphalitis, or could lead into a systemic infection such as neonatal sepsis (Quattrin et al. 2016). Approximately one million neonates die every year due to an infection in the umbilical cord, most of these deaths occurring in developing countries (Goshin & Hossen, 2013).

Throughout the years, nurses in the prenatal setting have used many methods that have been used to prevent umbilical cord infections in newborns, such as alcohol, sterile water, povidine-iodine, and human milk. With the variety of methods that have been used, many of these alternative methods have been deemed effective in preventing infection due to no significant difference when comparing dry care to the use of antiseptics (Chawla & Diwakar, 2015).

Some of these methods have been proven to decrease the amount of bacteria around the umbilical cords; however, these methods also delay the separation of the umbilical cord stump from the infant, which can increase the risk of infection (Goshin & Hossen, 2013). Although the goal appears to be to decrease the risk of infection by killing bacteria in the umbilical area, it has been recognized that bacterial colonization helps stimulate earlier separation of the umbilical cord stump from the infant (Chawla & Diwakar, 2015). Therefore, it is important for the umbilical cord to fall off as quickly as possible to reduce the risk of infection.

SEARCH METHODS

To locate relevant literature on umbilical cord care, the following phrases were used in the Old Dominion University library database and PubMed: “umbilical cord care,” “dry umbilical cord care,” “umbilical cord care and infection,” and “alcohol and umbilical cord care.”

IMPLICATIONS

In the systematic review conducted by Imdad et al. (2013), it evaluated all studies that assessed the antiseptics applied to the umbilical cord to determine whether or not they reduce the risk of infection or death of the neonate. In this study, 34 randomized controlled studies were included, which involved 60,378 neonates. Within these studies these were 22 different interventions, but the most common studied were 70% alcohol, triple dye, and chlorhexidine. Three studies were conducted in a community setting, the rest were conducted in a hospital setting, mostly in developed countries. However, the community settings were large and contributed to about 78% of all the participants. For the studies conducted in the community setting, these studies evaluated the effectiveness of the topical application of chlorhexidine and the combined results showed that chlorhexidine reduced the risk of death by 23% and the risk of cord infection between 27% to 56%.

According to Imdad et al. (2013), the studies conducted in a hospital setting did not report data for risk of death or tetanus. None of the antiseptics were found to be advantageous in prevention of cord infection compared to the dry cord care in the hospital settings. Triple dye application reduced Staphylococcus aureus compared to dry cord care and alcohol application. Alcohol application was advantageous in reducing the colonization of Staphylococcus epidermidis in comparison to dry cord care and triple dye. In these studies, there were no sufficient studies to determine the efficacy of other antiseptics.

The World Health Organization (2013) recommends that newborns in hospital settings and at home in low neonatal mortality settings to use dry cord care, which is a type of umbilical cord care that involves the use of no antiseptics and instead keeping the cord dry. It also recommends the use of Chlorhexidine for newborns that are born in home settings in which the infant mortality is high. These guidelines were created based on a first level of evidence. The studies conducted by Chawla and Diwakar (2015), Goshin and Hossen (2013), and Imdad et al. (2013) are also first levels of evidence. However, the study conducted by Quattrin et al. (2016) is a third level of evidence. Three of the four studies have recommended dry cord care, which has been deemed the most successful method by the World Health Organization. In contrast, Goshin and Hossen recommend that chlorhexidine be used. Based on Goshin and Hossen’s research, the results suggested that dry cord care was an effective method of umbilical cord care due to there being no significant differences in the methods of human milk, ethanol, and dry care. With additional research, human milk could be deemed an alternative to Chlorhexidine and other antiseptics, and could possibly create an impact on the infant mortality rate around the world.

CONCLUSION

There has been much research regarding umbilical cord care and infections within several decades and the World Health Organization has been an advocate for dry umbilical cord care since 1998 (Quattrin et al. 2016). Not only does the World Health Organization recommend dry cord care, so does the articles by Chawla & Diwakar (2015), Imdad et al. (2013), and Quattrin et al. (2016). With the quality of dry cord care being high, it is understandable that further and continued research has not been required on umbilical cord care within the past 5 years due to there being no increase in infection. Dry care is an affordable method that is for all incomes due to no additional resources being needed. Although, with recent research, it has been suggested that human milk could be an effective and affordable antiseptic for all incomes. With additional research, human milk could be deemed an alternative to Chlorhexidine and other antiseptics, and could possibly create an impact on the infant mortality rate around the world.

REFERENCES


