

Comparison Between Alcohol Application Versus Dry Cord Care

Iftikhar Ahmed¹, Saba Haider Tarar¹, Madieha Tariq¹ and Waseem Ahmed Khan²

ABSTRACT

Objective: To compare Alcohol with dry umbilical cord care in terms of mean umbilical cord separation time in neonatal period at Divisional headquarters teaching hospital, Mirpur, Azad Kashmir.

Study Design: A Randomized control trial study.

Place and Duration of Study: This study was conducted at the Neonatal Unit Divisional Headquarters Teaching Institute, Mirpur, Azad Kashmir from June, 2019 to February, 2020.

Materials and Methods: After taking permission from Ethics Committee of our institute, data was collected on a pre-designed Performa with a well informed consent was taken from the mothers along with the demographic details. About 100 Neonates who were admitted in well baby NICU for minor problems were included in this study. Two groups were formed and each neonate was allotted group randomly. One group received Alcohol, (Methylated spirit: isopropyl alcohol 70%) while other group received general instructions to keep the cord clean, dry and well exposed. The cord separation time was noted in terms of days of life at which the cord was shed.

Results: The mean age of neonates in Alcohol group was 2.50 - 2.29 days and in dry cord was 2.78 - 2.06 days. In Alcohol group there were 30(60%) male and 20(40%) female babies and in dry cord care babies, we had 26(52%) male babies and 24(48%) female babies. We found that the mean time for separation of cord in Alcohol group was 7.42 - 0.54 days and in dry cord care group was 9.62 - 0.64 days. However, time for separation of umbilical cord in Alcohol group was less as well as statistically significant, p-value < 0.001.

Conclusion: Application of Alcohol, (Methylated spirit: isopropyl alcohol 70%) is superior to dry cord care in term of less cord separation time of umbilical cord.

Key Words: Neonates, Alcohol, Umbilical Cord, Kashmir

Citation of article: Ahmed I, Tarar SH, Tariq M, Khan WA. Comparison Between Alcohol Application Versus Dry Cord Care. Med Forum 2020;31(6):60-62.

INTRODUCTION

Neonates, after birth have to come across, one of the major physiological transformation during the transition phase of fetal to neonatal period. The neonate is separated from placenta as the cord (UC) is cut, then the care of the remaining UC stump is necessary till it's shedding which takes around two weeks after birth.¹ The remaining umbilical stump is a readily accessible port of entry for systemic infection in the neonate. In addition, the neonate lacks protective physiological immunity immediately after birth. Normal skin flora gradually begins to be acquired after first day of life. The umbilicus can be infected by bacteria from environmental sources such as the mother's vagina and

the hands of attendants. Detachment of the UC stump is carried out, by active inflammation at junction of the abdominal wall and Umbilical cord with infiltration of leucocyte and subsequently complete resolution of UC. The cord generally falls off between 5 to 14 post natal days. Factors affecting this process are the application of antiseptics to the stump, infection and caesarean section.²

Omphalitis is inflammation of UC usually by infection, which can lead to fatal diseases in newborn, such as neonatal sepsis, neonatal tetanus. The incidence of omphalitis and sepsis has decreased with umbilical cord care in advanced countries omphalitis is still a significant cause of neonatal mortality in these areas. Some studies have revealed, two-thirds of all deliveries in low-income countries are carried out without compliance with standard hygienic guidelines. These childbirths are usually carried out at homes by midwives, and UC care is done by using unsterilized materials.³ These substandard conditions lead to infection of the umbilical cord with pathogenic bacteria such as *Staphylococcus aureus*. Thus, aseptic care of the UC, till its final detachment, is important to halt infections such as omphalitis, neonatal sepsis and tetanus. Multiple antiseptics like alcohol, triple dye, chlorhexidine and salicylic sugar powder are applied for UC care. There is lack of consensus about which antiseptic is most effective and efficient.⁴

¹. Department of Pediatrics / Ophthalmology², Divisional Teaching hospital/Mohtarma Benazir Bhutto Medical college Mir Pur AJK.

Correspondence: Iftikhar Ahmed, Associate Professor of Pediatrics, Divisional Teaching hospital/Mohtarma Benazir Bhutto Medical college Mir Pur AJK.

Contact No: 03125084789

Email: i_ahmed74@yahoo.com

Received: March, 2020

Accepted: April, 2020

Printed: June, 2020

The advanced countries, with good hygienic healthcare conditions and standard peri-natal care, UC infections like omphalitis has very low incidence. Two studies of meta-analyses suggested that there is no benefit of any medication in preventing omphalitis.⁵ The dry UC care method that is to “keep cord dry and clean ” using a simple soap and water is the current recommendation of World Health Organization and may be more effective and practical like different expensive antiseptics. According to their view, dry care would be readily available as well as cheap for healthy babies in hospital settings in advanced care countries.⁶

MATERIALS AND METHODS

Our study was carried out in well baby unit of NICU in Divisional Headquarters teaching hospital, Mirpur, Azad Kashmir. Data was taken after taking permission from Ethical Committee and taking consent from the mothers along with demographic details. About 100 Neonates who were admitted in well baby NICU for minor problems from 1st June, 2019 to 29th Feb, 2020 were included in this study. Only well babies and full term were included and Sick neonates were not included in the study. We calculated the Sample size by using WHO calculator. Non-probability consecutive sampling was used for sampling. Two groups were formed and each neonate was allotted group randomly. One group received Alcohol, (Methylated spirit: isopropyl alcohol 70%) while other group received general instructions to keep the cord clean and dry. The cord separation time was noted in terms of days of life at which the cord was shed. Data was analyzed by using SPSS version 20.

RESULTS

The mean age of neonates in Alcohol group was 2.50-2.29 days and 2.78 2.06 days in dry cord group. In Alcohol group there were 30(60%) male and 20(40%) female babies and in dry cord care babies, we had 26(52%) male and 24(48%) female babies. Our mean time for separation of cord in Alcohol group was 7.42 - 0.54 days and in dry cord care group was 9.62 0.64 days.

Table No.1: Mean Comparison of Time of Separation for cord in both study groups with respect to gender:

Time of separation for cord	Mean	S.D	Min.	Max.
Alcohol cord care	7.42	0.54	6.00	8.00
Dry cord care	9.62	0.64	9.00	12.00
Total	8.52	1.25	6.00	12.00

Table No.2: Mean Comparison of Time of Separation for cord in both study groups with respect to age group (days):

Age Group	Study Groups	Mean	S.D	t- test	P – value
0-3 days	Alcohol cord care	4.7	0.56	- 15.042	<0.001
	Dry cord care	9.69	0.68		
4-7 days	Alcohol cord care	7.29	0.47	- 11.879	<0.001
	Dry cord care	9.47	0.52		

In our study, mean time for separation of UC in Alcohol group was less as well as statistically significant, p-value < 0.001. In male neonates, the mean time for separation of cord in Alcohol group was statistically lower (7.33 -0.55 days) as compared to dry cord care group (9.65 0.69 days), p – value <0.001. Similarly, in female neonates, the mean time for separation of cord in Alcohol group (7.55 0.51 days) as compared to 9.58 0.58 days, p – value < 0.001.

DISCUSSION

The umbilical cord (UC) is an important place for infectious colonization and the commonest route of entry for tetanus neonatorum. Mothers found a lot of difficulties in keeping the cord clean with dry cord care method and it was found that application of alcohol on UC enhances cord separation. The mean age in Alcohol group was 2.50 - 2.29days and 2.78 2.06 days in dry cord group in our study. In Alcohol group there were 30(60%) male and 20(40%) female babies and in dry cord care babies, we had 26(52%) male and 24(48%) female babies. Our mean time for separation of cord in Alcohol group was 7.42- 0.54 days and in dry cord care group was 9.62 0.64 days. Similar results were depicted in a study done by Maira Z etal. Who, enrolled total 70 neonates in a study. According to their statistics, Cord separation in alcohol group was 7.03±1.2 days and in dry UC group was 9.29±1 day and was statistically significant; (p<0.001).Out of them 39 (55.7%) were male with male to female ratio 1.2:1.⁷

In a study done in Iran, where two groups had comparison between dry cord care and 70% Alcohol. In the dry UC care group, neonates had a significant infection with GBS (58.3% vs. 35% p=0.042), Staph. epidermidis (86.7% vs. 61% p=0.020) and E coli (88.9% vs. 67.5% p=0.025). In other group, there were no such infections. So, even there was no significant correlation between CST of UC but bacterial infection was higher in dry cord care neonates. So, studies show

a definitive risk of the umbilical cord stump infection if antiseptics are not applied.⁸

In contrast to our study, a meta-analysis reviewed of 13 studies including 4967 neonates, 50.35% female newborns reviewing six RCTs as well. According to that, application of Alcohol was comparatively associated with longer CST (MD = 1.93 days, 95% CI: 0.80, 3.06) while they did not found any risk of omphalitis. But, dry cord care was associated with foul smell at the surrounding tissues and increased risk of infection like E-coli colonization. According to that research, dry cord care is an easy as well as effective way to hasten CST but increased infection, particularly in low income countries.¹

In our study, the mean time for separation of cord in Alcohol group was less and statistically significant, p-value < 0.001. In male neonates, the mean time for separation of cord in Alcohol group was statistically lower (7.33- 0.55 days) as compared to dry cord care group (9.65 0.69 days), p – value <0.001. In female neonates, the mean time for separation of cord in Alcohol group (7.55 - 0.51 days) as compared to 9.58-0.58 days, p – value < 0.001 in dry cord group. Gathwala et al. Compared dry cord versus chlorhexidine application. A statistically significant difference was found in both groups in terms of CST as well as incidence of culture-positive sepsis although there was not any difference noted among the groups as far as umbilical infection, neonatal sepsis and meningitis were concerned. So, according to them Chlorhexidine was useful for umbilical cord care as it prevents infections in neonates in neonatal units.⁹

CONCLUSION

Application of Alcohol, (Methylated spirit: isopropyl alcohol 70%) is superior to dry cord care in term of early umbilical cord separation. It is cheap, readily available, easy to apply, time saving method which not only hastens cord separation time but also prevents secondary infections of UC.

Author's Contribution:

Concept & Design of Study: Iftikhar Ahmed
Drafting: Saba Haider Tarar

Data Analysis: Madiha Tariq, Waseem Ahmed Khan
Revisiting Critically: Iftikhar Ahmed, Saba Haider Tarar
Final Approval of version: Iftikhar Ahmed

Conflict of Interest: The study has no conflict of interest to declare by any author.

REFERENCES

1. Al-Shehri H. The Use of Alcohol versus Dry Care for the Umbilical Cord in Newborns: A Systematic Review and Meta-analysis of Randomized and Non-randomized Studies. *Cureus* 2019;11(7): e5103.
2. Shafique MF, Ali S, Roshan E, Jamal S. Alcohol Application Versus Natural Drying of Umbilical Cord. *RMJ* 2006;31:1–3.
3. Lawn JE, Kerber K, Enweronu-Laryea C, et al. 3.6 million neonatal deaths. What is progressing and what is not. *Semin Perinatol* 2010;34:371-86
4. Habibi M, Mahyar A, Heidari R, Javadi A, Mahyar S. Eau de Dalibour vs. Alcohol for Umbilical Cord Care. *J. Tropical Pediatr* 2014;60(4); 292–6
5. Guen CG, Caille A, Launay E, Boscher C, Godon N, et al. Dry Care Versus Antiseptics for Umbilical Cord Care. A cluster randomized trial. *Pediatr* 2017;139(1); e20161857.
6. World Health Organization. Care of the Umbilical Cord. A review of the evidence. Geneva, Switzerland: World Health Organization; 1999
7. Zaheer M, Parkash J, Soomro S. Comparison of Alcohol Versus Dry Cord Care in Terms of Cord Separation Time. *Pak Paed J* 2016;40(3):182-6.
8. Nourian M, Allaii F, Heidari A. comparison of the effect of alcohol 70% versus dry cord care on cord bacterial colonization and cord separation time among the newborns. *Pak J Med Sci* 2009;25(1): 103-7.
9. Gathwala G, Sharma D, Bhakhri BK. Effect of topical application of Chlorhexidine for UC Care in comparison with conventional dry cord care on the risk of Neonatal Sepsis, a randomized controlled trial. *J Tropical Pediatr* 2013;59(3);209–13.