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Article

NATRIUM CHLORIDE OR HIGH LEVEL DISINFECTION WATER: WHAT'S BEST FOR PERINEAL WOUND HEALING?

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A B S T R A C T

9 of 10 women will experience some form of perineal laceration at the time of delivery. Most perineal lacerations that occur in a vaginal delivery can be classified as first- or second-degree. Nowadays, midwives educate women to use Natrium Chloride 0.9% or Disinfection water on perineal wound healing. This study aims to compare the effect of using disinfection water and Natrium Chloride for perineal wound healing.. This research used a quasi-experimental research two group-posttest only design with univariate and bivariate analysis. The study population was all postpartum mothers, sample were 12 mothers for two groups, by using purposive sampling technique. 6 respondent was treated with NaCl 0.9% and 6 respondents treated with disinfection water. The results obtained by the average of REEDA Scale, in NaCl 09.9% groups average was 6.5 and the average of REEDA Scale in disinfection group was 6.00. The data analysis test used is the independent T-test, the result p value = 0,055. With the results of this study, both of these treatments were having same effect on perineal wound. It is hoped that postpartum mothers who have wounds in the perineum will want to use 0.9% NaCl or disinfection water to help accelerate the healing of perineal wounds healing

I. INTRODUCTION

More than 53-89% of women will experience some form of perineal laceration at the time of delivery. Most perineal lacerations that occur in a vaginal delivery can be classified as first- or second-degree. Of these lacerations,60-70% will require suturing(1).

Risk factors for perineal lacerations include nulliparity, operative vaginal delivery, midline episiotomy, Asian race,and increased fetal weight. Malpresentation, including persistent occiput posterior position and advancinggestational age, both contribute to perineal lacerations(1)

In obstetrics, one important complication is the occurrence of perineal lacerations in the course of a vaginal delivery. Perineal lacerations occur in up to two-thirds of women and have been claimed to cause social problems and affect a mother's psychological well-being.

The classification of perineal lacerations is well-known: first or second degree lacerations include the skin, subcutaneous and muscle layers, but exclude the anal sphincter. The third- or fourth degree category (severe perineal lacerations) include partial or complete tears to the anal sphincter or the rectum, respectively(2).

The perineum should always be thoroughly assessed after a vaginal birth to determine the presence of any lacerations. This examination should include a digital rectal examination to evaluate the tone of the anal sphincter. From here, the midwife or obstetrician can decide if conservative or surgical management is required(3).

According to World Health Organization (WHO), the birth rate in India in 2017 was 21.76 per thousand birth and incidence of episiotomy is high. It has been reported that 23 percent of women have health problems in first month after delivery related to episiotomy as perineal tear, urinary incontinence, uterine prolapsed. In 2014, 29 percent of birth were delivered by caesarean delivery and 60 percent delivered per vaginal(4).

Postpartum assessment of the mother focuses on the maternal response to the labour and delivery, the biophysical changes, and the physiological adjustment to parenthood Infection of episiotomy wound can lead the peuperial sepsis. Peurperial sepsis is one of the major causes of maternal morbidity and mortality. 11.5 percent of the postnatal mothers are dying with peuperal sepsis(4).

Care of episiotomy would begin immediately after delivery and should include a combination of local wound care and pain management. The care of episiotomy is different from hospital to hospital. Many interventions are in practice to relieve pain and thus enhance the healing of episiotomy wound, which include warm soaks, warm sitz bath, infrared radiation and cooling pads, application of antiseptic solutions(4).

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Sodium chloride solution is widely used in the hospitals for the healing of episiotomy wound. It helps to improve epithelialization of skin prevent infection and promote wound healing. Simple principle of episiotomy wound healing is good blood flow, oxygen, nutrients, and absence of infection(4).

Sodium chloride solution is favourable as it is an isotonic solution and does not interfere with the normal healing process. It is easily available, efficient, and cost effective. Sodium chloride solution is most commonly used solution due to safety (lowest toxicity) and physiologic factors. The application of normal saline is useful in first 24 hours post-partum which reduces inflammatory reaction and oedema. It will not cause any burning pain and does not cause damage to the new tissues and thus promote the healing process. However, in a number of systematic reviews, it has been reported that episiotomy is not as beneficial as expected and should not be routinely performed. These studies revealed that episiotomy fail to decrease the risk of perineal trauma, accelerate the healing of perineum, prevent pelvic floor relaxation, or improve the outcomes regarding the newborn. Moreover, it has been reported that episiotomy is associated with increased perineal pain, sexual problems(4).

Beam in 2006 stated that there were no differences were noted in the rates of infection and healing between the use of tap water and normal sterile saline in the cleansing of acute and chronic wounds. However, 1 group suggested that tap water was effective in reducing infection rates for cleansing of acute soft tissue wounds that were sutured (5).

The studies in this review that examined the quality of tap water were conducted in countries with developed water systems. Fernandez et al suggested that tap water could be used for cleansing when produced from a supply of potable drinking water. Tap water of lesser quality than was used in the studies may produce different effects. Distilled water and cooled, boiled water were compared with saline, and no increase in the infection rates was found, suggesting that these solutions could be used in the absence of potable water. Tap water has been used for centuries as a wound cleanser without evidence of adverse effects or associated infection risk. The history of its use might suggest the safety of tap water as a wound cleanser(5).

This study aims to compare the effect of using disinfection water and Natrium Chloride for perineal wound healing.

II. METHODS

This type of research was a quantitative study that used Pre-Experimental Design method with two group posttest only group design. The populations in this study were all of postpartum mother.

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The total sample was 12 respondents, sampling using non-probability techniques, purposive sampling. Perineal wound healing were observed by using REEDA Scales in two groupa.

Natrium chloride 0.9% was given twice a day for perineal washing and disinfection water were used every perineal washing.

The analysis was done by univariate and bivariate using SPSS for Windows applications. Data were normally distributed based on the normality test with Saphiro Wilk, so the data was processed by independent T-Test to see the difference in the mean difference between the two group of samples.

III. RESULT

Table 1. TheAverage of REEDA Score in Natrium Choride group

Reeda Score	Mean	SD	Min-Max
NaCl Group	6.5	1.16	6-9

Based on Table 1 we know that the average REEDA Score in NaCl Group were 6.5 with 1.16 deviation standard. Minimal volume was 6 and maximal volume was 9.

Table 2. Average of Reeda Score in Disinfection Water

Reeda Score	Mean	SD	Min-Max
Dinfection Water	**8.00**	**2.44**	**6-12**

Based on Table 2 we know that the average Reeda Score in Dinfection water group were 8.00 with 2.44 deviation standard. Minimal volume was 6 and maximal volume was 12.

Table 3.The Effect of Cabbage Leaves on Breast Engorgement

Variable	Mean	n	p-value
NaCl 0.9%	6.5	6	
Disinfection Water	8.00	6	0.055

Perineal wound healing in 12 respondents in two groups were not difference. Due to the p value >0.05 (P = 0.055) it can be concluded that the hypothesis is declined, meaning that there was no significant difference effect of Natrium Chloride 0,9% and Disinfection water on perineal wound healing of postpartum mothers.

IV. DISCUSSION

Wound healing is the process of replacing and repairing damaged tissue function (Boyle, 2009). This statement is supported by Eny et al. (2012), namely that wound healing is the

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length of time for the recovery process to the skin due to damage or disintegration of skin tissue.

NaCL 0.9% is a wound washing liquid that is safe for the body. NaCl 0.9% is the choice that is used in almost all wounds. According to Arik (2004), sodium chloride is a physiological fluid with body fluids because normal saline contains Na and Cl(6).

Substance contained in 0.9% NaCl to protect granulation tissue from dry conditions, maintain moisture around the wound and help the wound undergo the healing process. Treatment uses normal saline to keep the wound surface moist so as to promote the development and migration of epithelial tissue(7).

Previous research shows that in general, giving High Level Disinfectant Water for longer perinium wound healing is not in accordance with the standard of wound healing, namely 5 - 7 days, where the 5th day is called the maturation phase or the maturation phase which is marked by the emergence of tissue-healing ideally is wound healing process in restoring the original tissue. Within 3 days in the 0.9% NaCl group the scar tissue had been formed, the iris had closed completely. On day 1, it was seen that the length of the cut was shortened significantly; the redness and swelling around the wound had disappeared. On the second day, the wound was seen getting shorter. Shortening of the wound starts at both ends of the cut and then works towards the center of the wound. On the 3rd day a scar had formed on the wound, and the wound was closed completely. During the healing of the iris wound, there was no visible pus in the wound and there were no signs of allergies such as reddish spots. Based on the calculation of the mean wound healing time, the NaCl group of 0.9% closed completely the fastest, which was 3.6 days. In the disinfection Water group 5.8 days. In my research, it showed that all postpartum mothers experienced healing of perineal wounds with an average of 6.6667 after giving 0.9% NaCl with the duration of healing using the analysis with the Mann Withney test $p = 0.397$ ($p > 0.05$)(8).

The results of this study are also in line with research conducted by Martini, (2015) which showed that almost all mothers (93%) in the treatment group experienced rapid wound healing and a small proportion (6.7%) experienced slow wound healing, compared to the control group more than half (66.7%) experienced slow wound healing and some (33.3%) experienced rapid wound healing(8).

The results showed that in general the application of disinfection water compresses healed wounds perineum longer than the standard of wound healing, namely the 5th, where the networks are new. The ideal healing phase is a wound healing process in restoring the original tissue; if it is not possible then it will be scar tissue is formed(6).

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The use of appropriate materials in the treatment of perinium wounds is the correct technique, because if the use of inappropriate materials can cause the wound to be difficult to heal or long healing and lead to infection (Suwandi, 2007). According to Uliyah and Hidayat (2006), the healing of perinium wounds is characterized by the absence of infection. Normal suture wound healing will occur on the fifth day of the seventh day of cavity and can also be faster within 5 days marked by dry wounds, no redness, no there is tissue swelling, the tissue is fused and there is no pain when going to sit and walk. Wounds with disinfection water were longer with a time of 7 days compared to the average number of wound closure times in the NaCl group with a time of 3 days. In this research, the results showed that the average duration of healing of perineal wounds for postpartum mothers in the control group was 8.0000 with a standard deviation of 2.44949. The lowest score for wound healing was 6 and the highest was 12. At 95% CI, the mean range in the treatment group ranged from 5.4294(8).

According to Herawati (2010) due to improper or improper care, it can result in a perinium condition that is exposed to lochea and humidity will greatly support the proliferation of infections in the perinium. The emergence of infection in the urinary tract or in the birth canal can result in complications from bladder infection and infection on the birth canal. Researchers conducted a study to determine the differences in perineal wound healing in postpartum mothers. That in postpartum mothers with wound care using NaCl 0.9% showed an average wound healing of 7.67 days. Meanwhile, mothers with wound care using High Level Disinfectant Water showed an average wound healing time of 8.33 days (6).

V. CONCLUSION

NaCl 0.9% is very useful for postpartum mothers where 0.9% NaCl can help accelerate perineal wounds healing so that mothers can do activities comfortably such as sitting and walking. But, there was no signification difference using NaCl 0,9% or Disinfection Water on perineal wound. So both of these treatments were having same effect on perineal wound. It is hoped that postpartum mothers who have wounds in the perineum will want to use 0.9% NaCl or disinfection water to help accelerate the healing of perineal wounds healing.

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