

Effectiveness of Sitz Bath with Plain Water Versus Povidone Iodine Solution on Episiotomy Healing and Pain among Postnatal Mothers

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Abstract

Introduction: Episiotomy is a surgical incision of the perineum and the posterior vaginal wall generally done by the midwife or obstetrician during second stage of labor to quickly opening for the baby to pass through. Nursing interventions are intended to reduce the discomfort caused by episiotomy and allow the woman to take care of herself and her baby. The objective of the study was to compare the episiotomy wound healing and level of pain between postnatal mothers receiving sitz bath with plain water (group1) and povidone iodine solution (group 2).

Methods: Study was conducted at Kamla Nehru Hospital Shimla, Himachal Pradesh on 60[30 in experimental group (group 1) and 30 in experimental group(group 2)] postnatal mothers and selected by cluster randomization sampling technique. Two group pretest- posttest design was used. Standardized REEDA scale was used for measuring episiotomy healing and numerical rating scale for episiotomy pain assessment.

Results: In both groups there was a reduction in the total REEDA score from pretest to posttest (4.63 ± 2.17 to 2.40 ± 1.90 vs 4.90 ± 1.91 to 2.37 ± 1.49), but the difference was not significant statistically. The comparison of episiotomy healing between group 1 and group 2 also showed no significant difference revealing a similar effect of both interventions in terms of episiotomy healing. The pain score reduced from pretest to posttest in both groups (6.83 ± 0.79 to 4.4 ± 0.77 vs 6.70 ± 1.02 to 4.8 ± 0.99). But the difference was not significant statistically. But the mean reduction in scores from pretest to posttest was more in group 1 as compared to group 2 (2.4 ± 0.89 vs 1.9 ± 1.02), which was significant statistically (p-value .04).

Conclusion: The study indicates that the sitz bath with plain water was effective for episiotomy pain and sitz bath with plain water has similar effect as sitz bath with povidone iodine solution on episiotomy wound healing. So sitz bath with plain water was a suitable alternative of intervention for episiotomy healing and pain reduction.

Keywords: Postnatal Mother; Episiotomy Healing; Pain; Sitz Bath; Plain Water And Povidone Iodine.

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Introduction

Episiotomy is a surgical incision of the perineum and the posterior vaginal wall generally done by the midwife or obstetrician during second stage of labour to quickly provide the opening for the baby to pass through. With or without episiotomy, the perineum may suffer from lacerations during childbirth. Episiotomy care is very essential, if neglected it can lead to severe complications like infection, wound gapping etc. [1]. Episiotomy rates vary worldwide, depending on whether the procedure is used restrictedly or routinely. The worldwide episiotomy rate was 54%, 27% are nulliparous and 6% are multiparous women (WHO). Rates vary from 8% in the Netherlands, 13% in England to 25% in the USA. In India the birth rate is very high 56% of women had an episiotomy compared to the 46% of white women [2].

Episiotomy is often associated with many problems and discomforts in the mother. A retrospective study was conducted among 400 women at the end of postpartum period who attended at maternity and children health care, district hospitals in Assiut and Sohag governorates, Egypt. Result shows delayed wound healing and gapping, were significantly high, wound extension and/or hematoma, occurrence of postpartum wound infection, postpartum dyspareunia (32%), urinary and fecal incontinence (55%) were high [3].

Care of the episiotomy wound begins immediately after delivery and should include a combination of local wound care and pain management. During the first 12 hours after delivery, an ice pack may be helpful in preventing both pain and swelling of the site of the episiotomy. Some of pharmacological medicine also helpful for prevention of wound infection and pain management. There are different non-pharmacological interventions are helpful for episiotomy care among them sitz bath is an effective and common method for episiotomy care. Frequent sitz baths (soaking the area of the wound in a small amount of warm water for about 20 minutes several times a day), can help keep the area clean and improvement in episiotomy wound healing and pain reduction [4]. Sitz bath use medicated solution as well as plain water. The present study intends to compare the effectiveness of sitz bath with plain water and sitz bath with povidone among postnatal mothers with episiotomy.

Methods

It was an experimental study with two group pre-

test post-test design, conducted among 60 postnatal mothers (30 in each group) admitted in Kamla Nehru Hospital Shimla (H.P.). The two postnatal wards were randomly assigned to group 1 (sitz bath with plain water) and group 2 (Sitz bath with povidone iodine solution) using cluster randomization technique. All the mothers who were admitted in postnatal ward after vaginal delivery meeting the sampling criteria in postnatal ward 1 and 2 received the interventions accordingly. Mothers with episiotomy were recruited six to eight hours following normal delivery. Mothers with infected perineum, STDs, heavy vaginal bleeding, perineal tear, and allergic to iodine were excluded.

The study was designed as per the ethical guidelines and formal permission was obtained from Institutional Ethics Committee. Written informed consent was obtained from participants prior to data collection. Data was collected by using Semi structured interviewed schedule and observation method.

From both groups background data was taken related to socio-demographic variables. Before intervention episiotomy was observed in both groups, within 6-8 hours after normal delivery. Episiotomy healing was observed by using REEDA scale and level of pain with numerical rating scale. After the pretest assessment, Group 1 received sitz bath with plain water and group 2 received sitz bath with povidone iodine solution. Sitz bath was given for 15-20 minutes, three times a day for the first three days. On day third, episiotomy healing was reassessed by using REEDA scale and level of pain was reassessed by numerical rating scale.

Result

The data collected was analyzed using appropriate statistical methods with the help of SPSS package. The postnatal mothers in both group were similar with respect to all background variables (Table 1).

Table 1: Distribution of postnatal mothers based on socio-demographic variables

Variables	Group 1 (N=30)		Group 2 (N=30)		p-value
Age (in year)					
18-21	7	23.2	6	20	
22-25	12	40	13	43.4	.9
26-29	7	23.2	6	20	
30-33	4	13.6	5	16.6	
Religion					

Hindu	23	76.6	24	80.5		No formal education	7	23.4	7	23.4
Sikh	1	3.4	1	3.4	.9	Family income				
Muslim	1	3.4	1	3.4		<5000	7	23.4	5	16.7
Others	5	16.6	4	13.6		5,001 – 10,000	11	36.6	5	16.7
Body built						10,001 – 15,000	4	13.4	4	13.3
Thin	14	46.6	17	56.7		15,001 – 20,000	2	6.6	5	16.7
Moderately thin	16	53.4	11	36.7	.2	>20,001	6	20	11	36.6
Obese	0	0	2	6.6		Parity				
Educational status						One	19	63.4	22	73.4
Graduate or above	5	16.6	12	40		Two	9	30	5	16.6
Secondary education	10	33.4	8	26.6	.1	Three	2	6.6	2	6.6
Primary education	8	26.6	3	10		More than three	0	0	1	3.4

Episiotomy wound healing

Table 2: Comparison of pretest and posttest episiotomy healing within group 1 (sitz bath with plain water) N=30

	Mean ±SD		Mean difference	t-value	p-value
	Pre-test	Post-test			
Redness	1.37±.80	.33±.60	-1.04	5	.000**
Edema	.87±.73	.20±.48	-0.67	3.7	.001**
Ecchymosis	.33±.54	.23±.50	-0.1	.64	.522
Discharge	1.77±.43	1.43±.50	-0.34	3.26	.003
Approximation	.30±.46	.20±.40	-0.1	.76	.44
Total score	4.63±2.17	2.40±1.90	-2.23	3.6	.96

Table 3: Comparison of pretest and posttest episiotomy healing within the group 2 (sitz bath with povidone iodine solution)

N=30

	Mean ±SD		Mean difference	t-value	p-value
	Pre - test	Post - test			
Redness	1.30±.59	.20±.40	-1.1	9.1	.000**
Edema	1.03±.71	.33±.47	-0.7	5.8	.000**
Ecchymosis	.30±.46	.13±.34	-0.17	2.4	.023
Discharge	1.87±.34	1.37±.49	0.97	5.3	.000**
Approximation	.40±.56	.37±.55	-0.03	1.0	.32
Total score	4.90±1.91	2.37±1.49	-2.53	8.9	1.9

Table 4: Comparison of pre-test episiotomy healing between group1 and group 2.

	Mean±SD		Mean difference	t- value	p- value
	Group 1 (Plain water)	Group 2 (Povidone iodine solution)			
Redness	1.37±.80	1.30±.59	.06	.6	.71
Edema	.87±.73	1.03±.71	-.16	-.89	.37
Ecchymosis	.33±.54	.30±.46	.03	.25	.80
Discharge	1.77±.43	1.87±.34	-.10	-.99	.32
Approximation	.30±.46	.40±.56	-.10	-.74	.45
Total pre- test score	4.63±2.17	4.90±1.91	-.26	-.50	.61

Table 5: Comparison of post- test episiotomy healing between group 1 and group 2

	Mean±SD		Mean difference	t- value	p- value
	Group 1 (plain water)	Group 2 (povidone iodine solution)			
Redness	.33±.60	.20±.40	.13	1.0	.32
Edema	.20±.48	.33±.47	-.13	-1.0	.28
Ecchymosis	.23±.50	.13±.34	.10	.89	.37
Discharge	1.43±.50	1.37±.49	.06	.51	.60
Approximation	.20±.40	.37±.55	-.16	-1.3	.19
Total post test score	2.40±1.90	2.37±1.49	.03	.07	.94

There was a significant reduction in scores of redness, edema and discharge in both groups. The difference on ecchymosis was significant only in group 2. In both groups there was a reduction in the total REEDA score from pretest to posttest, but the difference was not significant statistically (Tables 2 and 3). The comparison of episiotomy healing between group 1 and group 2 showed no significant difference (Table 4 and 5) revealing a similar effect of both interventions.

Episiotomy Pain

The pain score reduced from pretest to posttest in both groups. But the difference was not significant statistically (Table 7). There was no statistically significant difference in pretest and posttest pain score between the group 1 and group 2 (Table 8). But the mean reduction in scores from pretest to posttest was more in group 1 as compared to group 2, which was significant statistically.

Discussion

Investigator could not find the similar study for comparison but many individual studies have been done related to interventions for episiotomy healing and pain. The findings of the study have been discussed in accordance with the objectives of the study and previously reviewed literature. The findings of present study reveal that pre-interventional mean score of episiotomy healing in experimental group 1 was 4.63±2.17 which decreased to 2.40±1.90 on day 3 after applying sitz bath with plain water. A similar study was for the effectiveness of sitz bath in reduction of episiotomy pain and wound healing among postnatal mothers admitted in postnatal units of DMC & H and Deep hospital, model town, Ludhiana, Punjab. The sample consisted of 60 postnatal mothers with episiotomy (30 in each experimental group and 30 in control group). Experimental group received sitz bath and control group received routine care. Findings of the this study shows that pre-interventional mean

Table 7: Comparison of pain with in the group1 and group 2.

	Mean ±SD		Mean difference	t- value	p-value
	Pre-test	Post-test			
Group 1 (plain water)	6.83±.79	4.4±.77	-2.43	13.9	2.02
Group 2 (povidone iodine solution)	6.70±1.02	4.8±.99	-1.9	10.1	1.5

Table 8: Comparison of pretest and post- test pain between group 1 and group 2.

	Mean ±SD		Mean difference	t- value	p-value
	Group -1 (Plain water)	Group - 2 (Povidone iodine solution)			
Pre- test	6.8±.79	6.7±1.02	.13	.56	.57
Post test	4.4±.77	4.8±.99	-.36	-1.59	.11
Pretest -posttest difference	2.4±.89	1.9±1.02	.50	2	.04*

score of episiotomy wound healing in experimental group was 8.26 ± 2.03 which decreased to 2.70 ± 0.65 after applying sitz bath therapy on day 3, whereas in control group pre interventional mean score of episiotomy wound healing 7.73 ± 1.61 which decreased only up to 3.233 ± 1.47 on 3 day ($p=0.001$) [5].

In present study experimental group 2 pre interventional mean score of episiotomy healing was 4.90 ± 1.91 which decreased up to 2.37 ± 1.49 on day 3 ($p=0.005$) after providing intervention with povidone iodine solution upto day 3. A comparative study was conducted at RB Amanda. Samples were of 30 people divided into two groups and intervention given to puerperal women i.e infrared and for control group intervention povidone iodine for seven consecutive days. This study result shows that in both study groups experienced an increase in the mean or average percentage of day-to-day effectiveness of therapy. The control group increased from 50.44% to 77.78% and 30.78% of the intervention group to 73.11% [6].

The findings of present study revealed that pre-interventional mean score of episiotomy pain in experimental group 1 was 6.83 ± 0.79 which decreased to 4.4 ± 0.77 on day 3 after applying sitz bath with plain water, whereas in experimental group 2 pre interventional mean score of episiotomy pain was 6.70 ± 1.02 which decreased up to 4.80 ± 0.99 on day 3 ($p=0.005$) respectively as supported by another study conducted on Effect of hot application on level of episiotomy pain at post natal ward of Government Taluk Hospital, Nedumangadu. Result shows that in the experimental group the pre-test mean pain score was 5.2 and post-test mean score was 2.3, it is found that the scores were highly significant ($t=16.134^{***}$, $p<0.001$) and in control group pretest mean pain score was 5.9 and posttest mean score was 6.3, which is more than pretest pain score of control group [7]. Similar study was conducted on effect of therapeutic ultrasound and maternal cooling gel pad for perineal pain following vaginal delivery with episiotomy and data was collected at K.L.E's Dr. Prabhakar Kore Hospital and Medical Research Centre, Belgaum, Karnataka, India. Effectiveness of intervention was measure by visual analog scale to measure pain intensity and REEDA scale for assessing the healing process. Result shows that the mean value of VAS before intervention was 6.7 ± 1.4 in control group and 7.2 ± 1.6 in experimental group. The mean value of VAS after intervention in control group was 5.8 ± 1.7 with p value 0.56 and 3.2 ± 1.3 in experimental group. There was statistically significant difference in pain score after 3 days of intervention in experimental group with p value 0.02 [8].

Conclusion

The present study was comparative effectiveness of sitz bath with plain water versus povidone iodine solution for episiotomy healing and pain among postnatal mother admitted in Kamla Nehru Hospital Shimla, Himachal Pradesh. Result of the study shows that both interventions has similar effect on episiotomy wound healing and the study indicates that the sitz bath with plain water reduces episiotomy pain and enhances wound healing in postnatal mothers as compare to sitz bath with povidone iodine solution. So sitz bath with plain water is a suitable alternative of intervention for episiotomy healing and pain reduction. It also makes the nursing care more cost effective.

Conflict of Interest

The investigator has no conflict of interest.

Source of Funding

The study is funded by self.

Ethical Clearance

Ethical clearance was obtained from the Institutional Ethics Committee of Akal College of Nursing. Participation was based on willingness and written informed consent was obtained from all participants.

References

1. Amandeep, Sagar N, Mamta, Kaur J, Jindal P. Effect of sitz bath in reduction of episiotomy pain and wound healing among postnatal mothers. [Internet] International Journal of Current Research- 2015, Feb 26;7(2):12461-63. Available from www.journalcra.com/.../effect-sitz-bath-reduction-episiotomy.
2. Episiotomy Rates Vary Widely Worldwide Health And Social Care Essay. UKESSAYS. Summary on 2015 March 23 Available from: <https://www.ukessays.com/.../episiotomy-rates-vary-widely-worldwide-health-and-so>.
3. Amany A, Safaa H, Mohamed. Routine episiotomy for vaginal birth: Should it be ignored? IOSR Journal of Nursing and Health Science. 2015 Sep-Oct;05(02): 70-77 (internet) available from: www.iosrjournals.org/iosr-jnhs/papers/vol4.
4. Dutta DC. Textbook of obstetric. Jaypee publisher, New Delhi. 2009.
5. Amandeep, Sagar N, Mamta, Kaur J, Jindal P. Effect of Sitz Bath in Reduction of Episiotomy Pain and wound

- healing Among Postnatal Mothers. *International Journal of Current Research*; 2015 Feb;7(02):12461-63. (Internet). Available from: www.journalcra.com/.../effect-sitz-bath-reduction-episiotomy-pain-and-wound-healin.
6. Vivian N, Dewi L, Ika F, Ayuningtyas. Infrared is more effective in perineum wound healing during postpartum than iodine. *International Journal of Research in Medical Sciences*. 2015 Dec;3 (Suppl 1):S6-S9, (Internet). Available from: www.msjonline.org/index.php/ijrms/article/viewFile/2536/2404.
 7. Varghese AR. Effect of hot application on level of episiotomy pain: A quasi experimental study. *Gjra - Global Journal For Research Analysis*. 2016 Jan;5(01):2277-8160. (Internet). Available from: <https://www.worldwidejournals.com/global-journal-for-research.../file.php?val...>
 8. Mahishale A, Chougala A, Patted S. Effect of Therapeutic Ultrasound and Maternal Cooling Gel Pad for Perineal Pain Following Vaginal Delivery with Episiotomy. *Women's Health Care*; 2013;2(3). Available from: www.iosrjournals.org/iosr-jnhs/papers/vol5-issue6/Version-2/E0506023741.pdf.
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