

A Study to Assess the Effect of Infrared Radiation (Lamp) in Episiotomy Wound Healing among Postnatal Mothers

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Abstract

The objectives of the study were to:

- Assess the effect of infrared radiation in the healing of episiotomy wound among postnatal mothers.
- Assess the relationship between episiotomy wound healing and selected demographic variables.
- Find out the rate of episiotomy wound healing with application of infrared radiation (lamp) and without application of infrared radiation (control group).

The review of literature enabled the investigator to formulate the tool of episiotomy wound healing rating scale or REDDA scale. Conceptual framework based on modified King's goal attainment theory was developed to describe the concept of the study.

The research design adopted was Quasi experimental, which involves the observations on different days. The tool was validated and reliability was determined by the Guttman Split half method during pilot study. The main study was conducted at Acharya Vinoba Bhawe Rural Hospital, Sawangi, in Wardha district, a sample size of 50 postnatal mothers were selected by using purposive sampling technique.

Demographic profile of postnatal mothers and episiotomy wound healing rating scale (REDDA) were used for data collection. A separate room for treatment and observation was located for data collection. Ethical considerations were maintained throughout the study. Collected data were analyzed by using both descriptive and inferential statistics (percentage, mean, standard deviation, paired t-test Chi-square and Fisher's exact test).

Keywords: REDDA, Episiotomy, Infrared radiation.

INTRODUCTION

Episiotomy is an incision in the perineum during a vaginal delivery to facilitate and expedite delivery to prevent perineal tear. In women without an elective episiotomy, many experienced perineal laceration requires surgical repair. Pain from episiotomy is a significant morbidity in the puerperium. Yet, there is little research on the care of this most frequently performed wound. Traditionally, midwives are left to manage the episiotomy and perineal wound.¹

Every woman who becomes pregnant has to undergo or cesarean delivery. Sometimes, it may be normal or forceps, vacuum or cesarean section. In normal process of delivery, the baby is delivered through vagina. For essay delivery, perineum has to stretch far beyond its ordinary limits, as the baby is born. Most women body is capable of achieving this but some are not and the skin gives a way and tears. To prevent "Just in case tears" an episiotomy is performed by health care provider or midwife.²

The wound should be assessed for edema, swelling, tenderness and discharge and also for localized pain. Puerperal infections are costly in terms of delayed mother infant interaction, lactation difficulties, prolonged hospital stay or readmission in hospital and increased expenses.³

Episiotomy is used widely today because it prevents lacerations, heals better, easier to repair than a ragged tear, allows for easier and safer regression of the head thereby preventing possible brain damage reduced incidence of uterine prolapse in subsequent deliveries. If performed before, tissues are overstretched, shortens the second stage of labor and it may prevent painful hemorrhoids. It is also performed for a majority of forceps deliveries especially in ATC (Axis traction forceps) and also with breech and face deliveries.

Previously for the care of episiotomy, moist heat application like sitz baths and hot packs were used to be in practice. As advancement in science took place, dry heat applications came into existence like electric heat lamps, peri lights, infrared rays, etc. Studies say that dry heat applications are more effective

than moist heat application, as the effect of the dry heat lasts for a longer time and keeps the wound dry and hastens healing.⁴

MATERIALS AND METHODS

The research approach for the study was evaluative and a quasi-experimental design-purposive sampling was used to select the target population; sample size was 50 postnatal mothers with episiotomy. Modified REDDA scale used for healing was measured once in a day in both experimental and control group and standard engineering paper cm scale was used to measure episiotomy wound healing.

RESULTS

- The felt pain of postnatal mothers due to episiotomy wound is described by the application of infrared radiation (lamp).
- Paired ‘t’ test showed that there was significant difference in episiotomy wound healing between infrared radiation application and control group.
- Chi-square test revealed that there was no significant association between episiotomy wound healing and age, parity, body weight, Hb% level and episiotomy reasons of postnatal mothers.

DISCUSSION

Study findings showed that maximum number of postnatal mothers 25(100%) in infrared radiation application and 25(100%) in control group belong to the age group of 21 to 30 years (Fig. 1). It is consistent with the findings of Judith Noroha’s⁵ study on effectiveness of self-perineal care on episiotomy wound healing. It may be due to the most fact that women get married in this period.

In relation to Hb% level, it was found that most of the subjects in infrared radiation group 23(92%) and control group 22(88%) had 10 to 12 gm% and it is consistent with result of Judith Noroha’s⁵ study on effectiveness of self-perineal care on episiotomy wound healing (Fig. 2).

The first objective of this study was to assess the effect of infrared radiation in the healing of episiotomy wound among postnatal mothers.

With the application of infrared radiation of episiotomy wound in postnatal mothers, it is evident that infrared radiation is effective in reducing the pain, edema and discoloration of episiotomy wound healing process with difference scores in 72 for felt pain, 36 and 28 for edematous and discoloration condition, discharge and approximation there is no difference.

From the Table 1, it is evident that the Mean ± SD and mean difference of day 1st and 5th observation, the Mean ± SD was for felt pain 2.88 ± 0.33, edema 1.48 ± 0.50 and discoloration 1.12 ± 0.33 and discharge and approximation was 0.00 ± 0.00, for edema 0.04 ± 0.20 and 0.00 ± 0.00.

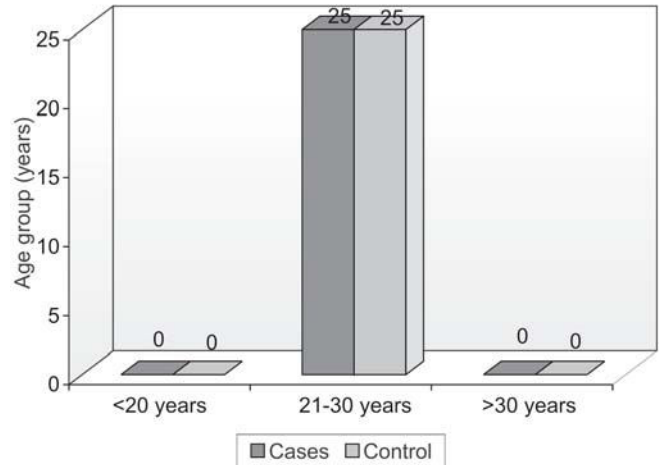


Fig. 1: Showing age wise distribution of mothers

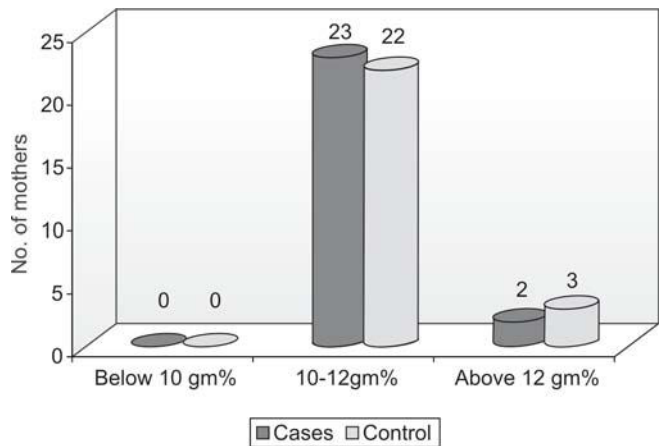


Fig. 2: Showing distribution of mothers according to hemoglobin in gm%

After calculating z-value was identified and result showed that p-value was highly significant as it was < 0.0001 in each condition, thus making infrared radiation highly effective intervention for episiotomy wound healing.

The present study findings are consistent with the findings of Anne Chacko.⁶ The percentage of mothers who said they had no pain soon after treatment, rose from 6% at 12 hours postpartum to 60% at 72 hours postpartum in the infrared group. The increase being statistically significant.

In control group difference from Table 2, it is evident that the Mean ± SD and mean difference of day first and day fifth observation, the Mean ± SD was for felt pain, 2.08 ± 0.457, edema 1.40 ± 0.50 and discoloration 2.08 ± 0.40 and discharge and approximation was 0.00 ± 0.00. in day fifth Mean ± SD for felt pain, edema and discoloration was decreased to 1.76 ± 0.43, 0.08 ± 0.40 and 1.88 ± 0.33 respectively.

Table 1: Showing mean and mean difference comparison between day 1 and day 5 observation

Condition	Day 1	Day 5	Mean difference	z-value	p-value
Felt pain	2.88 ± 0.33	0.00 ± 0.00	0.00 ± 0.33	4.77	0.000 HS, p < 0.0001
Edema	1.48 ± 0.50	0.04 ± 0.20	1.44 ± 0.50	4.51	0.000 HS, p < 0.0001
Discoloration	1.12 ± 0.33	0.00 ± 0.00	1.12 ± 0.00	4.77	0.000 HS, p < 0.0001
Discharge	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	NS	NS
Approximation	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	NS	NS

Table 2: Showing mean and mean difference comparison between day 1 and day 5 observation in control group

Condition	Day 1	Day 5	Mean difference	z-value	p-value
Felt pain	2.08 ± 0.33	1.76 ± 0.43	0.12 ± 0.33	1.73	0.08 NS, p < 0.05
Edema	1.48 ± 0.50	0.08 ± 0.40	0.32 ± 0.74	2.00	0.05 NS, p < 0.05
Discoloration	2.08 ± 0.40	1.88 ± 0.33	0.20 ± 0.50	1.89	0.05 NS, p < 0.05
Discharge	0.00 ± 0.00	0.00 ± 0.00	±	NS	NS
Approximation	0.00 ± 0.00	0.00 ± 0.00	±	NS	NS

NS-not significant, p < 0.0001

After calculating z-value was identified and result showed that p-value was nonsignificant as it was greater than 0.05 in each condition.

The above finding is supported that the rating in all degrees of healing showed a statistically significant difference between the two case and control group infrared group at p < 0.0001 level and control group p > 0.05.

The demographic variables of postnatal mothers such as age, parity, body weight, Hb gm% level and reason for episiotomy did not have any role as p-value was more than 0.05 (p > 0.05).

CONCLUSION

In systematic review of literature, it has found that each mother has to adjust to physical changes in her own body due to involution and lactation as well as cope up the new demands on her time and emotions made by the new overstressed situation. Episiotomy despite evidence that it is an unnecessary intervention, is one of the most common surgical procedures performed during the second stage of labor specially in a primigravida women.

Perineal trauma due to episiotomy causes a number of distressing conditions in postnatal period. Firstly, it causes pain and discomfort and disturbed her normal activities. Secondly, it gives the mother a feeling of inadequacy. Thirdly it increases the risk of infection, prolongs postnatal recovery and increases the cost of health care.

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