

Infrared Lamp Therapy on Episiotomy Pain and Wound Healing

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Abstract

Pregnancy is a wonderful creation with life's greatest blessings, dreams and expectation in women's lives. Pregnancy is a time where a mother is going through a lot of changes both physically and psychologically. During childbirth episiotomy is one of the most widely performed surgical procedure. Due to episiotomy perineal pain is a stressful factor in mothers which interferes the daily activities performed across the world. Infrared lamp therapy (IFR) is one of the best therapy which enhance episiotomy wound healing and pain reduction. The study was carried out with the aim to assess the effectiveness of IFR therapy on episiotomy pain and wound healing among postnatal mothers. In this study quasi-experimental non-equivalent post-test design was applied. Purposive sampling technique was used to assign 60 postnatal mothers (30 in each study & control group) who met the inclusion criteria. The IFR therapy for 10 minutes was applied on episiotomy wound for 3 consecutive days twice a day for the study group whereas hospital routine care was given to control group. Episiotomy wound was assessed by using observational check list REEDA scale and pain level assessed by modified numeric pain rating scale once in a day for 3 consecutive days. The result shown that there was significant difference found in episiotomy pain on 2nd day ($p < 0.001$) and in 3rd day ($p < 0.001$), and on episiotomy wound healing on 2nd day ($p = 0.05$) and on 3rd day ($p = 0.001$) in between study and control group. The study concluded that, IFR therapy is an appropriate method of care which can be included in hospital routine care for better episiotomy wound healing and managing episiotomy pain level among women at puerperium period.

Keywords: Infrared Lamp Therapy; Episiotomy Wound; Episiotomy pain.

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Introduction

Pregnancy is a wonderful creation with life's greatest blessings, dreams and expectation in

women's lives. Pregnancy is a time where a mother is going through a lot of changes both physically and psychologically.¹ During childbirth episiotomy is one of the most widely performed surgical procedure.² In India 1,20,243 vaginal deliveries were performed each year and around 63.4% mothers had an episiotomy. The episiotomy rate in primiparous women were 8.8 times more than multiparous women.³ According to American college of Obstetrics and Gynecology, one in three women having a vaginal delivery also have an episiotomy.⁴ Due to episiotomy, perineal pain is a stressful factor in mothers which interferes the daily activities.⁵ Perineum is very extremely sensitive area and various muscles and soft tissues are involved in many activities.⁶ The IFR therapy is a unique form of intervention when it is applied to episiotomy

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site it increases circulation, reduces inflammation, promotes healing and reduces pain level.⁷

Need of the study

In normal process of delivery, perineum has stretched beyond its ordinary limit when head passes through the birth canal. Most women are capable of achieving this but some are not and the skin gives a way and tears or causes various complications such as blood loss, edema, perineal tear, perineal trauma or wound dehiscence, infection, discomfort and pain.⁶ The care of the episiotomy is the important aspect of postnatal care for the prevention of infection and treatment of pain level or healing of episiotomy wound.⁸

Objectives

- To compare the episiotomy pain among postnatal mothers in study and control group after intervention.
- To compare the level of episiotomy wound healing among postnatal mothers in study and control group after intervention

Hypothesis

H₁: There will be significant difference in the intensity of episiotomy pain among postnatal mothers in study and control group after the intervention

H₂: There will be significant difference in episiotomy wound healing in study and control group after the intervention

Review of literatures

It was carried out with extensive reviewing of literatures. Many studies supported that IFR therapy is one of the best therapy which helps in episiotomy wound healing process,⁹ reducing episiotomy pain,¹⁰ promotes wound healing pattern of caesarean section mothers¹⁰ or in diabetic foot,¹¹ reducing back pain,¹² etc. It is simple and painless treatment when it is provided to injury site and painful areas it increases circulation, reduces inflammation, relaxes tissues and promotes healing.¹³

Materials and Methods

A quasi-experimental non-equivalent post-test design was adopted. Total 60 postnatal mothers

(30 in each study & control group) were selected by purposive sampling technique based on inclusion criteria in postnatal ward at a tertiary care hospital Lucknow. The IFR therapy at 230 volts applied for 10 min (morning & evening) at a distance of 45 cm from the episiotomy wound was applied to study group along with routine perineal care twice a day for 3 consecutive days, where as in control group hospital routines were followed. Post intervention data were collected once a day for 3 consecutive days by using standardized REEDA scale ($r = 0.75$) for the measurement of wound healing or Numeric pain rating scale ($r = 0.96$ and 0.95) for the measurement of pain.

Ethical Aspect

Ethical approval obtained from the Institutional Ethic Committee and permission obtained from department of Obstetrics & Gynaecology to conduct the study and informed consent was taken from all participants before initiating the study.

Data collection procedure

The data were collected from tertiary care hospital in postnatal ward. A separate room was arranged for providing study intervention, observation and for data collection. Infrared lamp therapy was given twice a day for 3 consecutive days to study group and for control group hospital routines were followed. Wound healing & pain level were assessed once a day in the evening for 3 consecutive days for both in study and control groups after the intervention.

Results

Table 1 there was significant difference in pain level found on 2nd day in study group with mean 3.37 ± 0.89 as compared with control group mean 4.50 ± 1.17 with p value $< 0.001^*$. It also shows that there was significant difference in pain level found on 3rd day in study group with mean 1.57 ± 0.63 as compared with control group mean 3.60 ± 1.43 with p value $< 0.001^*$

So, from above result it depicted that there was difference found in pain level after IFR therapy on 2nd day & 3rd day which accepts the research hypothesis that there was significant difference in the intensity of episiotomy pain among postnatal mothers in the study and control group after intervention.

Table 1: Comparison of pain level between study and control groups after the study intervention

DAYS	Control group $n_1 = 30$		Study group $n_2 = 30$		Mann Whitney Test
	Mean	SD	Mean	SD	p value
Day 1	5.50	0.97	5.30	0.92	0.404
Day 2	4.50	1.17	3.37	0.89	<0.001*
Day 3	3.60	1.43	1.57	0.63	<0.001*

Mann Whitney * $p < 0.05$

Table 2 depicted that there was significant difference found in redness in the episiotomy wound on 3rd day in study group with mean 1.03 ± 0.32 as compared with control group mean 1.03 ± 0.32 with p value 0.007*.

It also depicted that there was significant difference found in ecchymosis in the episiotomy wound on 2nd day in study group with mean 0.47 ± 0.51 as compared with control group mean 0.77 ± 0.57 with p value 0.044* and on 3rd day in study group with mean 0.20 ± 0.41 as compared with control group mean 0.60 ± 0.50 with p value 0.002*.

There was highly significant difference found in discharge from the episiotomy wound on 2nd day in study group with mean 0.30 ± 0.47 as compared with control group mean 0.60 ± 0.50 with p value 0.021* whereas, on 3rd day in study group with mean 0.03 ± 0.18 as compared with control group mean 0.37 ± 0.49 with p value 0.001*.

So from above findings it is observed that after giving IFR there was significant improvement observed in reduction of redness, Ecchymosis & discharge from the episiotomy wound.

Table 2: Comparison of components of episiotomy wound healing among study and control groups after intervention

Components	Group	Day 1			Day 2			Day 3		
		Mean	SD	p value	Mean	SD	p value	Mean	SD	p value
Redness	Study	2.00	0.64	0.537	1.50	0.63	0.288	1.03	0.32	0.007*
	Control	1.87	0.90		1.77	0.90		1.03	0.32	
Edema	Study	1.57	0.63	0.974	1.03	0.67	0.110	0.67	0.61	0.106
	Control	1.50	0.73		1.27	0.64		0.93	0.64	
Ecchymosis	Study	0.77	0.63	0.534	0.47	0.51	0.044*	0.20	0.41	0.002*
	Control	0.87	0.63		0.77	0.57		0.60	0.50	
Discharge	Study	0.57	0.50	0.430	0.30	0.47	0.021*	0.03	0.18	0.001*
	Control	0.67	0.48		0.60	0.50		0.37	0.49	
Approximation	Study	0.30	0.53	0.716	0.20	0.48	0.573	0.10	0.31	0.282
	Control	0.23	0.43		0.23	0.43		0.20	0.41	

Mann Whitney * $p < 0.05$

Table 3 there was significant difference found in overall episiotomy wound healing after intervention on 2nd day in study group with mean 3.50 ± 1.72 as compared with control group mean 4.63 ± 2.28 with p value 0.048* whereas, on 3rd day in study group with mean 2.03 ± 1.13 as compared with control group mean 3.50 ± 1.80 with p value 0.001*.

So, from above result it represented that there was significant difference found in episiotomy wound healing after IFR therapy on 2nd day & 3rd day which accepts the research hypothesis that there was significant difference in episiotomy wound healing in study and control group after the intervention.

Table 3: Comparison of overall episiotomy wound healing between study and control groups after intervention

Total	Control group $n_1 = 30$		Study group $n_2 = 30$		Mann Whitney Test
	Mean	SD	Mean	SD	p value
Day 1	5.13	2.34	5.13	2.16	0.887
Day 2	4.63	2.28	3.50	1.72	0.048*
Day 3	3.50	1.80	2.03	1.13	0.001*

Mann Whitney * $p < 0.05$

Discussion

The study revealed that IFR therapy had significant role in reduction of episiotomy pain & improving episiotomy wound healing on 2nd and 3rd day between study and control groups. The above findings of this study was supported by other literatures which states that IFR therapy was effective on episiotomy pain and wound healing among postnatal mother.¹⁴ The findings suggested that IFR therapy is more effective in improving episiotomy wound healing and minimize episiotomy pain during postpartum period.

Conclusion

Infrared lamp therapy is one of the best therapy, which helps in reducing episiotomy pain and improving wound healing process. So IFR therapy can be added with the hospital routine for better management for daily caring the postpartum mothers with episiotomy wound. It can be implemented as part of hospital routine in the postnatal ward. So IFR therapy is an appropriate method of care which can be included in hospital routine care for better episiotomy wound healing and managing episiotomy pain level among women at puerperium period.

Recommendation

Adjoining the IFR therapy as main stream for episiotomy wound care during postpartum period to improve quality of life of mothers. Future researches can be replicated in different settings with similar intervention technique or with a larger samples, the period of intervention can be prolonged.

Limitations of the study

- The study was conducted in a single setting.
- Intervention period was for shorter duration.

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