Research Paper MEDICAL SCIENCES

A Quasi Experimental Study on The Effect of Li4 (Large Intestine) Ice Massage on Labour Pain Among Primigravid Women in a Selected Hospital at Mangalore

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ABSTRACT

Aim: To compare the labour pain between the primigravid women using ice massage and those not using ice massage and to find out the association of pre interventional labour pain score with the selected demographic variables. Materials and *methods*: A quasi experimental research design conducted among 40primigravid women (20 each in experimental and control group) during their first stage of labour selected by purposive sampling technique. *Results;* The mean post-test pain score is less than the mean pre-test labour pain score of primigravid women in experimental group at 4cm, 7cm and 10cm of cervical dilatation. There is a significant difference in the mean post- test labour pain score of primigravid women between the experimental and control group at 4cm and 7 cm but not at 10 cm. *Conclusion:* It revealed that LI4 ice massage had a significant effect on the pain among the primigravid women during their first stage of labour

KEYWORDS | LI4 Ice Massage, Pain reduction, Visual Analogue Scale.

Introduction

Child bearing is a natural physiological event. However, this creative process is a challenge that may place the body at risk [1]. 'Pain and suffering' is an ever present image and experience among women from the dawn of history to contemporary time. The management of labour pain is a major goal of intrapartum care [2]. There are two general approaches: pharmacologic and non-pharmacologic Pharmacologic approaches are directed at elimination of the physical sensation of labour pain, whereas non-pharmacologic approaches are largely directed toward prevention of suffering. Ice or cooling applied to an injured body part is used as standard treatment of trauma, bleeding, swelling and soft tissue injuries [3]. Melzack et al. found that intense sensory input produced by ice massage of the web between the thumb and forefinger resulted in a 50% reduction in acute dental pain. The researcher hypothesized that the efficacy of ice massage was due to engaging the gate control pain system rather than eliminating the source of pain. When impulses reaching the spine pathway to the brain are stimulated by techniques such as vibration, scratching or ice massage, the gate closes resulting in a decrease in the sensation of pain [4]. Keeping in mind the above knowledge, the present study was carried to find out the effectiveness of L I4 Ice massage on labour pain among primigravid women.

Objectives

1. To determine the pre interventional labour pain among primigravid women during the first stage of labour.
2. To compare the labour pain between the primigravid women using ice massage and those not using ice massage.
3. To find out the association of pre interventional labour pain score with the selected demographic variables: age, religion, education, occupation and method of induction.

Hypothesis

The hypothesis will be tested at 0.05 level of significance.

H1-There will be a significant difference in the mean score of pain among the women using ice massage and those not using ice massage.

Materials and Methods:

A quasi experimental study was conducted among primigravid women in their first stage of labour with cervical dilatation of 4 cm (20 each in the experimental and control group) in Labour Room. Purposive sampling technique was used. The inclusion criteria for the study were Primigravid women with gestation above 36 weeks undergoing vaginal delivery with no known obstetrical complication. The exclusion criteria were multigravid women with high-risk pregnancy. Data collection Instruments used were Baseline proforma, Visual Analogue Scale for labour pain and Likert Scale on Opinion of women regarding LI4 ice massage. The women who met the inclusion criteria were instructed regarding the procedure.

Ice massage steps:-

- Pre interventional labour pain score is assessed at 4 cm of cervical dilatation using VAS.
- Ice is wrapped in a cotton cloth and is applied at LI4 point for a period of 10 minutes.
- Post interventional labour pain is assessed at 10th minute using Wong Baker VAS.
- Ice massage is continued until she is fully dilated, with an interval of 20 minutes between each ice massage.
- The intensity of labour pain is assessed before and after the ice massage using Wong Baker VAS at 7cm and 10cm of cervical dilatation.

The investigator explained the purpose of the study and written consent was obtained from each subject. Primigravid women rated the pre intervention labour pain score at 4cm following which ice massage is started and ice applied for 10 minutes at the beginning of one contraction. Post intervention labour pain is scored by women. Primigravid women rate the pain level before and after ice massage at 7cm and 10cm of cervical dilatation. The women in the control group rated their labour pain same as the experimental group but without intervention at 4cm, 7cm and 10 cm of cervical dilatation. The opinionnaire was given to the primigravid women in the experimental group after delivery. All the subjects were very co-operative and the investigator expressed her gratitude for their co-operation. The collected data was compiled for analysis by using SPSS 16 version.

Results

Majority of the primigravid women in the experimental group (65%) and in the control group (55%) were Muslims. 50% of women in the experimental and control group had received secondary education. So, both the groups were comparable. The mean post-test labour pain score is less than the mean

pre-test labour pain score in experimental group. The calculated t value at 4 cm, 7cm and 10 cm of cervical dilatation is 5.68, 6.86, and 3.24 respectively(Table1). This indicates that there is significant difference between the mean pre-test pain score and mean post-test pain score among primigravid women within the experimental group at 4 cm, 7cm and 10 cm of cervical dilatation. In the control group the mean post-test labour pain score is more than the mean pre-test pain score in the control group at 4 cm, 7cm and 10 cm of cervical dilatation (Table 2). As the cervical dilatation increases, the post -test labour pain increases within the group.

The calculated 't' value at 4 cm and 7 cm is 5.52 and 6.57 which is greater than the table value $t_{(38)}$ (2.02) at 0.05 level of significance whereas at 10 cm, the calculated value is 1.43 which is less than the table value (Table 3). There is a significant difference in the mean post- test pain score between experimental and control group at 4cm and 7 cm but not at 10 cm. Hence, it is concluded that the ice massage is effective in reducing the labour pain among the intra-natal women at 4 cm and 7 cm of cervical dilatation but it is not effective at 10 cm of cervical dilatation. There is no significant association of the pre interventional labour pain and the selected demographic variables. 55% of women expressed their opinion on regard to ice massage as 'good' and 40% of the women expressed it as 'very good'.

Discussion

In the present study, majority of primigravid women (87%) were with age of 20 -25 years. Half of the subjects (50%) had secondary education and minority (7.5%) was graduates. In a similar study conducted at DOH accredited birthing center, Philippines, the mean age group ranged from 20- 30 years and 46.8% of their subjects were high school graduates.

The findings of the present study showed that the mean pre interventional pain score of the experimental group is 4 and that of control group is 3.5. In the study by Mercia Rekha in Mangalore, the mean post- test pain score was 2.1 which is significantly lower than the mean pre- test pain score of 5 with a mean difference of 2.9 and the calculated t value is significant at 0.05 level of significance [5].

Conclusion

The women who received ice massage were satisfied with the care they received and pleasant birthing experience. The result of the present study shows that there is a great need for the health personnel to implement this method in their clinical field and make it available to the women in labour. Ice massage should be considered as a simple, inexpensive, available tool in helping to minimize labour pain.

Table 1: Pre-test and post-test pain score of primigravid women of the experimental group at 4cm, 7 cm and 10 cm of cervical dilatation. N=20

	At 4cm				At 7cm				At 10 cm			
	Mean ±SD	MD	t value	p value	Mean ±SD	MD	t value	p value	Mean ±SD	MD	t value	p value
Pre- test	4±0.91	1.05	5.68	0.001	5.85±0.81	1.45	6.86	0.001	10±0.0	0.55	3.24	0.004
Post-test	2.95±0.94				4.40±1.14				9.45±0.75			

t ($_{19}$)=2.09

Table 2: Pre- test and post –test labour pain level of primigravid women of the control group at 4cm, 7 cm and 10 cm of cervical dilatation. N=20

	At 4cm				At 7cm				At 10 cm			
	Mean ± SD	MD	t value	p value	Mean ± SD	MD	t value	p value	Mean ± SD	MD	t value	p value
Pre-test	3.5±0.82	-1.05	-9.2	0.00	5.6±0.94	-1.15	-7.66	0.00	8.8±1.10	-0.95	-5.5	0.00
Post-test	4.55±0.88				6.75±1.11				9.75±0.55			

$t_{(19)=2.09}$

Table 3: Post -test labour pain score of primigravid women in the experimental and control group at 4cm, 7 cm and 10 cm of cervical dilatation. N=20+20

At 4cm				At 7cm				At 10cm			
MEAN ±SD	MD	t value	p value	MEAN ±SD	MD	t value	p value	MEAN±SD	MD	t value	p value
Experimental	2.95 ±0.94			4.4 ± 1.14				9.45± 0.75			
Group (n=20)											
	1.6	5.52	0.00		2.35	6.57	0.00				
Control Group 4.55 ± 0.88				6.75 ± 1.11				9.75± 0.55	0.3	1.43	0.16
(n=20)											
t (38)=2.02											

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