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*Original Research Article.*

# Assessment of Clinical Outcome of Programmed Labour At a Tertiary Care Hospital

**Ashu Jain[1], Alka Garg[1*], Bhawna Kansal[2]**

**[1]Associate Professor, Department of Obstetrics & Gynaecology, Rama Medical College Hospital & Research Centre, Hapur, Uttar Pradesh, India.**
**[2]Assistant Professor, Department of Obstetrics & Gynaecology, Subharti Medical College, SVSU, Meerut, Uttar Pradesh, India.**

## ABSTRACT

**Background:** Obstetricians are trying to lessen the misery of labour. After long researches a protocol was developed to optimize the labour outcome by programmed labour. The present study was a hospital-based study conducted to assess clinical outcome of programmed labour.

**Materials and Methods:** The present study was undertaken among 140 women who were uncomplicated Primigravida in active phase of labour were enrolled in the study. Women were divided into two groups 70 subjects in each group i.e study group who received programmed labour protocol and the control group who received conventional labour protocol. Rate of labour progressing, duration of labour, pain relief score, maternal and foetal outcome were studied.

**Results:** In study group the mean duration of cervical dilatation was 2.65 +0.35 cm/hr and in control group it was 1.42 +0.54 cm/hr. Duration of first stage of labour in study group was 2.43±0.57hrs and in control group it was 4.67±1.02hrs. Duration of second stage of labour in study group was 23.45±7.87hrs and in control group it was 59.06±7.22hrs. Duration of third stage of labour in study group was 4.34±2.56 hrs and in control group it was 7.54±1.23 hrs. 32.85% of women had total pain relief, 48.57% of women had moderate pain relief, 11.42% of women had mild pain relief and 7.14% of women had no pain relief. 11.42% patients in the study group had caesarean section and 12.85% patients had caesarean section in the control group. Nausea was seen in 8.57% patients of study group as compared to only 1.42% patients in control group. 7.14% patients of study group had vomiting as compared to 4.28% in control group. 1.42% patient in study group and 1.42% patient in control group had complaint of drowsiness. 1.42% patient had fever in study group as compared to none in control group. 2.85% study group patients had diarrhoea as compared to 0% in control group.

**Conclusion:** This study concluded that Programmed labour protocol is an effective way to achieve labour analgesia as it shortens all the three stages of labour.

**Keywords:** Labour Pain, Programmed Labour, Caesarean Section.

***Correspondence to:**

**Dr. Alka Garg,**
Associate Professor,
Department of Obstetrics & Gynaecology,
Rama Medical College Hospital & Research Centre,
Hapur, Uttar Pradesh, India.

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## INTRODUCTION

Labour pain is one of the most painful experiences for a woman.[1] The degree and relief of pain affects maternofetal physiology and neuropsychology, as well as maternal satisfaction.[2] Labour is defined as a series of events that take place in the genital organs in order to expel the products of conception to the outer world. It is ranked high on the pain rating scale when compared to other painful life experiences.[1]

Programmed labour in India was developed by Daftary et al.[3] Its main purpose is to provide pain relief and to hasten the labour process for better obstetric and neonatal outcome. Its protocol incorporates 3 basic principles that are Active management of labour, Obstetric analgesia[4], Partography.[5] Partography is the graphical representation of labour introduced by Friedmann (1955) helps pick up dysfunctional labour at the earliest and take timely interventions.[5] It is necessary that feasible analgesia is used to improve maternal satisfaction and decrease the side effects on the mother and fetus.[6] The present study was a hospital based study conducted to assess clinical outcome of programmed labour.

## MATERIALS AND METHODS

The present study was undertaken among 140 women who were uncomplicated Primigravida in active phase of labour were enrolled in the study in Department of Obstetrics & Gynaecology, Rama Medical College Hospital & Research Centre, Hapur, Uttar Pradesh, India. Before the commencement of the study ethical approval was taken from the Ethical Committee of the institute and written formal informed consent from all participants was taken after they had been made aware of the study procedure. Women Primigravida between 37 to 40 weeks of gestational age with single live intra uterine gestation with vertex presentation at the onset of active phase of labour, Availability of anaesthesiologist and neonatologist in the premises were included in the study. Women with Clinical evidence of cephalopelvic disproportion, P1H, premature rupture of membranes, Pregnancy complicated by any medical illness, Hydramnios, IUGR, Antepartum haemorrhage, Previous uterine and cervical surgeries were excluded from the study. In all women included in the study a detailed history, general physical examination and obstetric examination including vaginal examination was done and all the required investigations carried out. When the patients entered into active phase, artificial rupture of membranes was done if liquor was clear programmed labour protocol was initiated. As soon as the patients of the study group entered the programmed labour protocol, a partogram was initiated. Maternal vital parameters and fetal heart rate documented periodically. Per vaginal examination carried out after every hour to two hourly intervals. Following regime of administering medicine for pain relief and facilitating smooth cervical dilatation was adopted. An I.V infusion line with dextrose 5% ringer lactate was started with 15-20 drops/min. To sustain optimal pains i.e., 3-4 sustained contractions / 10 min, 5 units of oxytocin to the drip was added. 2mg Diazepam + 6mg Pentazocine diluted in 10ml of saline, slow IV as bolus to initiate pain relief. Injection Drotaverine 40mg is administered IV, will be repeated every 2 hours, if the rate of cervical dilatation is less than 1 cm / hr, for a maximum of three doses. The progress of labour is observed by charting the maternal and foetal parameters every hour and the progress of labour is assessed on the basis of cervical dilation and descent of the fetal head, as documented periodically on the partogram. When the patient is in advanced labour, and the fetal head down on the pelvic floor, the patient starts complaining of severe pain, or bearing down sensation. At this time the cervix is often almost 7-8 cm dilated. Pain relief score was noted and graded, score 3 as good pain relief, score 2 as moderate pain relief and score 1 as mild pain relief. Initial dose, inj. Ketamine 0.2 to 0.3mg/kg body weight dilute the drug in 10ml of saline and administer slowly, over a few minutes. Pain relief score was noted. Top up doses of Inj. Ketamine were given at 20-30 min intervals half the initial dose wherever required. The last top up dose of inj. Ketamine was given after the birth of the baby. After delivery Inj. Prostadin 125 mcg was given in for active management of the third stage of labour. In the control group routine hospital protocol was followed which included an IV infusion line with Ringer lactate / dextrose 5% vaginal examination as and when required. Partogram was maintained in this group too oxytocin drip was started only if required but the dose was less 1 mU /min and not escalated to that level as in study group. No sedative or analgesic was given to any women in the control group.

**Table 1: Comparison of Partographic Events**

| Parameters | Study group Mean±SD | Control group Mean±SD |
|---|---|---|
| **Rate of cervical dilation** | 2.65±0.35cm/hrs | 1.42±0.54cm/hrs |
| **Duration of first stage of labour** | 2.43±0.57hrs | 4.67±1.02hrs |
| **Duration of second stage of labour** | 23.45±7.87min | 59.06±7.22min |
| **Duration of third stage of labour** | 4.34±2.56min | 7.54±1.23min |
| **Apgar score** | 2 | 1 |

**Table 2: Pain relief score of study group**

| Pain relief score | N(%) |
|---|---|
| **0- no pain relief** | 5 (7.14%) |
| **1- mild pain relief** | 8 (11.42%) |
| **2- moderate pain relief** | 34 (48.57%) |
| **3- excellent pain relief** | 23 (32.85%) |

**Table 3: Mode of delivery**

| Mode of delivery | Study group N(%) | Control group N(%) |
|---|---|---|
| **SVD** | 51(72.85%) | 55(78.57%) |
| **Forceps** | 11(15.71%) | 6(8.57%) |
| **LSCS** | 8(11.42%) | 9(12.85%) |

**Table 4: Complications during labour**

| Complication | Study group N(%) | Control group N(%) |
|---|---|---|
| **Nausea** | 6(8.57%) | 1 (1.42%) |
| **Vomiting** | 5(7.14%) | 3(4.28%) |
| **Drowsiness** | 1(1.42%) | 1(1.42%) |
| **Tachycardia** | 0(0%) | 0(0%) |
| **Fever** | 1(1.42%) | 0(0%) |
| **Vaginal/cervical tears** | 0(0%) | 0(0%) |
| **Diarrhea** | 2(2.85%) | 0(0%) |

## RESULTS

In study group the mean duration of cervical dilatation was 2.65 +0.35 cm/hr and in control group it was 1.42 +0.54 cm/hr. Duration of first stage of labour in study group was 2.43±0.57hrs and in control group it was 4.67±1.02hrs. Duration of second stage of labour in study group was 23.45±7.87hrs and in control group it was 59.06±7.22hrs. Duration of third stage of labour in study group was 4.34±2.56 hrs and in control group it was 7.54±1.23 hrs.

32.85% of women had total pain relief, 48.57% of women had moderate pain relief, 11.42% of women had mild pain relief and 7.14% of women had no pain relief.

11.42% patients in the study group had caesarean section and 12.85% patients had caesarean section in the control group.

Nausea was seen in 8.57% patients of study group as compared to only 1.42% patients in control group. 7.14% patients of study group had vomiting as compared to 4.28% in control group. 1.42% patient in study group and 1.42% patient in control group had complaint of drowsiness. 1.42% patient had fever in study group as compared to none in control group. 2.85% study group patients had diarrhoea as compared to 0% in control group. No patient in any group complained of tachycardia and vaginal/cervical tears.

## DISCUSSION

The stress of pain labour disturbs the maternal autonomic functions and liberates catecholamines which predisposes to dysfunctional labour and compromise fetal oxygenation. Freedom of pain improves the environment for both mother and fetus and therapy improved obstetric outcome.[7]

In study group the mean duration of cervical dilatation was 2.65 +0.35 cm/hr and in control group it was 1.42 +0.54 cm/hr. Duration of first stage of labour in study group was 2.43±0.57hrs and in control group it was 4.67±1.02hrs. Duration of second stage of labour in study group was 23.45±7.87hrs and in control group it was 59.06±7.22hrs. Duration of third stage of labour in study group was 4.34±2.56 hrs and in control group it was 7.54±1.23 hrs. 32.85% of women had total pain relief, 48.57% of women had moderate pain relief, 11.42% of women had mild pain relief and 7.14% of women had no pain relief. 11.42% patients in the study group had caesarean section and 12.85% patients had caesarean section in the control group. Nausea was seen in 8.57% patients of study group as compared to only 1.42% patients in control group. 7.14% patients of study group had vomiting as compared to 4.28% in control group. 1.42% patient in study group and 1.42% patient in control group had complaint of drowsiness. 1.42% patient had fever in study group as compared to none in control group. 2.85% study group patients had diarrhoea as compared to 0% in control group. No patient in any group complained of tachycardia and vaginal/cervical tears.

Chauhan et al.[7] found duration of first stage of labour to be 3.4 hours and Daftary et al.[8] reported active phase duration to be 3.5 hours.

Sravani GG[9], found the duration of second stage to be 22.24±14.18 minutes while Daftary et al.[8] reported it to be 26 minutes.

A study by Sravani, GG[9], the rate of cervical dilatation was 4.81±1.96 which was significantly higher than their control group.

The observations of Daftary et al.[4] and Jyothi M et al.[10] patients had good amount of pain relief. Prasertsawat et al.[11] observed excellent pain relief in labour in 24.50%.

Bajaj et al.[12] also reported an apgar score of more than 8 at 1 minute in all neonates.

Suvonnakote et al.[13] and Prasertsawat et al.[11] also reported minimal side effects in cases of programmed labour.

Konin S et al.[14] in their study also observed the normal vaginal delivery rate to be 96%

## CONCLUSION

This study concluded that Programmed labour protocol is an effective way to achieve labour analgesia as it shortens all the three stages of labour.

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