

Original Research Article

Clinical Study of Fetomaternal Outcome in Optimising Labour in Primi and Multigravida

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Abstract: To evaluate various effects of optimizing labour protocol on primi and multigravida and their neonates. Two hundred women with 37 to 40 weeks pregnancy with vertex presentation in active phase of labour without any fetal and maternal complication were randomly allocated to two groups. Hundred women received optimising labour protocol taken as subjects while 100 were managed expectantly taken as controls. In each group 50 women were primi and 50 women were multigravida. Good Pain relief was achieved in 50% of primi and 52% of multigravida in study group. Onset of analgesic effect started in 14.97 minutes in primi and 14.36 minute in multigravida. No significant fetal and maternal complication or adverse effects were observed. Duration of all stages of labour was reduced. Blood loss during third stage of labour also reduced.

Keywords: Labour analgesia, Pain relief, partogram

INTRODUCTION:

"As a human female physiologic process labour is both a universal phenomenon and a highly individual experience. It is predictable that it will occur, but unpredictable and idiosyncratic in its actual occurrence. Despite attempts to package labour into discrete phases and stages, it is better understood as a whole, with ebb and flow and rhythms of its own. It is intensely physical and emotional, consuming all of one's attention and energy, yet life-giving and empowering in that intensity. How then is it possible to manage labour?" Kaufman [1].

Labour pain is among the most severe pain experienced by women. The total pain of labour is not simply the physical pain that can be explained on the basis of physiological, chemical and neurological phenomenon but it is aggravated by anxiety, fear and ignorance.

Usually 80% of maternal deaths are due to direct obstetric complications, hemorrhage and obstructed labour constitute 33% of these deaths. Postpartum hemorrhage is most common complication of III stage of labour accounting for 35% of maternal

death. Optimising labour protocol is based on incorporation of labour analgesia, active management of labour and monitoring events of labour by a partogram.

METHODS

The present study was conducted on 200 pregnant women admitted in Department of Obstetrics & Gynaecology, J.L.N. Medical College and Associated Group of Hospitals, Ajmer (Raj.). Grouping was done.

Study group:

Comprised of 50 primigravida and 50 multigravida receiving protocol of optimising labour.

Control group:

Comprised of 50 primigravida and 50 Multigravida managed expectantly.

Inclusion Criteria

- Primigravida and multigravida (IInd gravida and IIIrd gravida, 21-30 years)
- At term (37-41 weeks)
- In active phase of labour (cervix 3-4 cm) dilated almost well effaced.
- Cephalic presentation

- With no clinical disproportion.

Exclusion Criteria

- Preterm labour
- Malpresentation
- Cephalopelvic disproportion
- Antepartum hemorrhage
- Foetal distress
- Meconium stained liquor
- Severe anaemia
- PIH

On admission a detailed obstetric and medical history was taken followed by a detailed physical and obstetrical examination. A written informed consent from each patient was taken.

On admission an Amniotomy was performed to ensure the presence of clear liquor and satisfactory foetal heart pattern. IV infusion was set up and if the frequency of uterine contraction was not adequate augment labour with 2 unit of oxytocin in 500 ml of 5% GDW at 15 drops / minutes in primigravida and I unit of oxytocin in 500 ml of 5% GDW at 15 drops / minute in multigravida and gradually escalate at every 20 minutes, until 3 contractions every 10 minutes lasting for 45 seconds each is achieved maximum dose - 11 mu/min. Pentazocine is a potent analgesic and has mild sedative properties. It may cause respiratory depression and transient apnoea of newborn. Diazepam is long acting Benzodiazepine derivative, used along with pentazocine for analgesia and sedation K.sreelatha (2). A low dose of sedative and analgesic containing 2 mg of diazepam and 6 mg of pentazocine prepared by diluting, 2 ml of diazepam and I ml of pentazocine with 7 ml of distill water to make 10 ml. 2 ml of this solution was administered as a bolus through infusion line to initiate sleep and pain relief. Tramadol is a synthetic codeine analogue with weak opiod receptor agonistic activity. It inhibits uptake of norepinephrine and serotonin. It has low risk of respiratory or CNS side effects and does not cause respiratory depression in neonate.

At the same time Tramadol 1 mg/kg of body weight IM with inj. Drotaverine hydrochloride 40* mg IV/ IM or inj. Valethamate bromide 8 mgIV/IM.

After delivery active management of third stage practiced by inj. 125ji-250 microgram carboprost tromethamine IM after the birth of the baby. It was repeated at 30-90 minute interval maximum dose 2 mg/day or 8 amp. The remaining 8 ml solution of diazepam and pentazocine was added to IV fluid. This aids an easy repair of episiotomy wound and calms the patient during immediate postpartum period.

Labour was monitored by using a partogram. The time of onset of analgesia was recorded. The

degree of analgesia was noted on a scale of 0 to 3 (0 - no pain relief, 1 - mild relief, 2 - moderate relief, 3 - good relief). Duration of the three stages of labour, amount of blood loss and mode of delivery were noted. Apgar score of every new born was noted at 1 and 5 minutes.

RESULTS

In present study epidemiological factors of women in both study and control group were same. The groups were statistically matched as far as age, gravidity gestational age, locality of residence.

The mean age of women in study group was 23.83yr, 25.5yr in primi and multigravida respectively and in control group it was 23.9yr, 25.72yr in primi and multigravida respectively.

The mean time of onset of analgesia was 14.97 minute in primi and 14.36 minutes in multigravida. 50% of primi and 52% of multigravida achieved good pain relief and 38% primi, 36% in multigravida achieved moderate pain relief in study group.

The mean duration of Ist stage of labour was 5hr 39 min and of active phase of labour was 2 hr 39 min. in study group of primigravida which were significantly less than the control group where it was 8 hr 33 min and 3 hr 52 min respectively (Table 2). Similarly in multigravida mean duration of Ist stage of labour was 2hr 45 min and of active phase of labour was 1 hr 32 min. In study group which were significantly less than in control group where it was 4 hr 35 min and 3 hr 25 min respectively (Table 3). The mean duration of 2nd stage of labour in primigravida was 17.36 min. In study group and 31.2min in control group. In multigravida it was 15.9 min in study group while 25.45 min in control group (Table 3). There was significant reduction in 2nd stage of labour in study group of both primigravida and multigravida as compared to control group as P value was < 0.001. The mean duration of 3rd stage of labour in primigravida was 4.78 min in study group which was less than 8.79 minute in control group (Table 2). In multigravida it was 6.54 min in study group which was less than 11.20 min in control group (Table- 3). The mean blood loss in primigravida was 106.90 ml in study group, 142.95 ml in control group. In multigravida it was 112.9 ml in study group and 163.58 ml in control. It was obvious blood loss was significantly reduced in study group of both with optimising labour protocol.

94% of study group, 90% of control group in primigravida and 96% of study, 88% of control group in multigravida had normal vaginal delivery. Forcep was applied in 4% cases of study group in primigravida, 2% in multigravida for fetal distress while forcep/ventous was applied in 6% cases of control group of both primigravida and multigravida. LSCS was done in 2%

of study group 4% of control group in primigravida and 2% of study, 6% of control group in multigravida. All of the babies had an apgar score >8 at 1 min and 5 min in both group of our study. The adverse- effect

encountered were of minor variety. The most common side effect was vomiting 7% drowsiness 7% other were nausea (6%) tachycardia (5%), diarrhoea (5%).

Table-1: Pain relief in the study group

Pain relief score in (%)	Study Group	
	Primi	Multigravida
3	50	52
2	38	36
1	12	12
0	0	0

Table-2: Duration of Stages of labour in Primigravida

Mean Duration	Study Group n= 50 Mean ± SD	Control Group n = 50 Mean ± SD	P Value
First Stage of Labour (Hours)	5.30 ± .53	8.33 ± 1.01	< 0.001
Second Stage of Labour (Minutes)	17.36±5.31	31.2 ± 6.25	< 0.001
Third Stage of Labour (Minutes)	4.78 ± 1.34	8.79 ± 3.59	< 0.001

Table-3: Duration of Stages of labour in Multigravida

Mean Duration	Study Group n=50 Mean ± SD	Control group n=50 Mean ± SD	P Value
First Stage of Labour (Hours)	2.45 ± .39	4.35 ± .68	< 0.001
Second Stage of Labour (Minutes)	15.9 ± 3.89	25.45 ± 9.49	< 0.001
Third Stage of Labour (Minutes)	6.54 ± 2.16	11.70 ± 3.84	< 0.001

DISCUSSION

In present study excellent pain relief was observed in 50% primi, 52% of multigravida in study group. Prasertsawat *et al.* [3] observed excellent pain relief in labour in 24.50% and Meena Jyoti *et al.* [4] in 54%.

In present study the mean time of onset of analgesia was 14.97 minutes in primi, 14. 72 minute in primi, 14.36 min in multigravida. It was 26.10 min in study conducted by Li and Weng4 and 17 minute in study conducted by Meena Jyoti *et al.* [4].

The mean duration of 1st stage of labour in present study was 5hr 39min in primi, 2hr. 45min in multigravida which was comparable to 5 hour reported by Golan *et al.* [6] and 5hr 45min reported by Meena Jyoti *et al.*[4], M.G. Mishra [6] (4.3hr in primi and 2.5hr in multigravida).

In present study the mean duration of 2nd stage of labour. In study group was 17.36min in primi that was comparable with results observed by Dafatary S.N. *et al.* [7] (26 min), Meena Jyoti *et al.* [2] (17.46min). In multigravida it was 15.9 min less than results obtained in study by Chauhan R8 (32.63min), M.G. Mishra [7] (30min).

The mean duration of third stage of labour in present study was 4.78 min in primi, 6.54 min in

multigravida. The results of present study were comparable to results obtained by Daftary *et al.* [8] (6 min) and Meena Jyoti *et al.* [4] (4.94min) and Young *et al.*[10] (4.6 min in primi, 4.1min in multigravida). In present study the mean blood loss in 3rd stage was 106.90ml in primi, 112.9ml in multigravida that was less than results obtained by Chauhan R [9](137.5ml in primi, 127.55 ml in multi). The results were comparable to results obtained by Meena Jyoti *et al.* [4] (110ml in primi).

In our study 1 and 5 min apgar score were 8.90 and 9.96 respectively in primi. In multigravida at 1 and 5 min apgar score were 8.84 and 9.94 respectively. Bajaj *et al.* [11] also reported score of more than 8 at 1 minute in all neonates of tramadol group.

Adverse effect encountered during present study were of minor variety, Meena Jyoti *et al.* reported minimal side effects.

CONCLUSION

Optimising labour is very effective method for painless, progressive and safe labour. It is simple, easy and inexpensive method provides smooth induction, effective analgesia.

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