RANDOMIZED CLINICAL TRIAL TO STUDY THE EFFECT OF PARACERVICAL BLOCK IN ACCELERATING THE ACTIVE PHASE OF LABOUR IN PRIMIGRAVIDAS

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ABSTRACT

The objective of the study was to ascertain the effectiveness of paracervical block in acceleration of active stage of labour in primigravidas and to compare the results with controls. The degree and duration of pain relief provided by paracervical block and its effects on the fetus was also studied. Hundred cases of uncomplicated primigravidas with full term pregnancy were selected and randomized into two group of 50 each by single blind technique studied over a period of two years. The study was conducted using 20 ml 2% Lignocaine in 50 study group & 20 ml of distilled water in 50 control group. Time taken from administration of block to full dilatation was noted. Efficacy of pain relief was also noted. Time taken from paracervical block to full dilatation was significantly shorter (p < 0.001) in the study group than in the control group. The degree of pain relief was satisfactory in 82% of study cases. The mean duration of pain relief was 2 hours. Fetal bradycardia was noted in 8% of study cases but they were transient. Neonatal outcome was not affected. This study suggests that Paracervical block accelerates labour and provides adequate pain relief without any adverse effect on the fetus.

KEYWORDS: Paracervical Block; Pain Relief; Fetal Bradycardia

INTRODUCTION

The human is unique among mammals because during the process of labour and birth, the mother appears to require the assistance of other individuals for optimal outcome. Duration is the kernel of the problem in the management of labour. Cervical factors play an important role in determining the progress and duration of labour in first stage. Paracervical nerve block abolishes the parasympathetic inhibitory effect on the cervix and relieves the spasm of the cervix and helps in faster cervical dilatation and hence accelerates labour. Apart from accelerating labour it also serves the dual purpose of pain relief. Although introduced in 1992 its popularity waned because of fears of fetal bradycardia, which it was thought to produce. Recent studies do not support this view and with proper technique, paracervical block enjoys the position of a simple and very effective procedure.
MATERIALS AND METHODS

A total of 100 cases of uncomplicated primigravidas with full term pregnancy in established early labour admitted to C.G.H, W.C.H and Bapuji Hospital, attached to J.J.M.M.C Davangere over a period of two years were selected for the study and were randomly (two – coloured coin) allocated into study and control group.

Patient with following conditions are excluded from the study.

- Uteroplacental insufficiency
- Diabetes, PET, post term, chronic Hypertension
- Malpresentation
- IUGR
- Multiple gestation
- Preterm
- PROM
- Congenital anomaly
- FHR aberrations

The study was conducted using 20 ml of 2% xylocaine in 50 study cases and 20 ml of distilled water in 50 control cases. Injection were given at 2, 5, 7 and 110 clock position in the lateral vaginal fornix with paracervical block needle with guide. 5 ml of xylocaine was instilled at each position. Patients were monitored every 15 minutes for 30 minutes and then every 30 min, partogram was maintained to assess the process of labour. Time taken from the administration of block to full dilatation was noted. Efficacy of pain relief was noted. Patient were questioned regarding pain relief and graded as complete relief (4+), satisfactory with residual backache (3+) failure on one side (2+); complete failure (1+). Mode of delivery was noted. Neonatal condition was assessed by Apgar score at 1, 5 and 10 minutes. Any adverse maternal side effects were noted.

RESULTS

The mean active phase of labour in the study group was 3 hrs 8 min where it was 5 hrs 52 min in the control group, which was statistically significant (p < 0.001). There was no difference in the second and third stage of labour in the two groups. The rate of cervical dilatation was remarkably accelerated (2.22 cms/hr) in the study group as compared to control group (1.21 cms/hr) (table-1) Degree of pain relief was satisfactory for 2 hrs in study group where no pain relief in control group.
Effect on FHR:
There were four cases of post paracervical block bradycardia, which was transient lasted for 5-12 min. All patient were given left lateral position, and the fetal heart rate picked up, foetal outcome is shown in (table- 7). None of the babies were asphyxiated in study group.

Maternal side effect:
Most of the patients were comfortable. In the study group 5 patients complained giddiness, swelling, and numbness of lower limbs for short period of time.

**TABLE – 1: DURATION OF LABOUR AND LABOUR DATA**

<table>
<thead>
<tr>
<th></th>
<th>Study</th>
<th>Control</th>
<th>Significance</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>t-value</td>
<td>p-value</td>
<td>t-value</td>
</tr>
<tr>
<td>Mean active phase of</td>
<td>3 hrs 8 min ± 0.28</td>
<td>5 hrs 52 min ± 0.9</td>
<td>18.7</td>
</tr>
<tr>
<td>labour (Hrs min)</td>
<td></td>
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<tr>
<td>Mean duration of second</td>
<td>36.3 ± 13.7</td>
<td>38.9 ± 14.2</td>
<td>0.89</td>
</tr>
<tr>
<td>stage (min)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean duration of third</td>
<td>5.06 ± 0.82</td>
<td>4.95 ± 0.98</td>
<td>0.58</td>
</tr>
<tr>
<td>stage (min)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean rate of cervical</td>
<td>2.22 ± 0.24</td>
<td>1.21 ± 0.21</td>
<td>21.4</td>
</tr>
<tr>
<td>dilatation (cm/hr)</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Mean injection delivery</td>
<td>3 hrs 40 min ± 0.35</td>
<td>6 hrs 25 min ± 0.91</td>
<td>19.1</td>
</tr>
<tr>
<td>interval (hrs min)</td>
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</table>

**TABLE – 2: FOETAL OUTCOME**

<table>
<thead>
<tr>
<th>Apgar at 5 min</th>
<th>Study n (%)</th>
<th>Control n (%)</th>
<th>Significance</th>
</tr>
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<tbody>
<tr>
<td>&lt; 4</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>5 – 7</td>
<td>5 (10)</td>
<td>2 (4)</td>
<td></td>
</tr>
<tr>
<td>&gt; 8</td>
<td>45 (90)</td>
<td>48 (96)</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>50 (100)</td>
<td>50 (100)</td>
<td></td>
</tr>
</tbody>
</table>

\[ \chi^2 = 1.38 \quad p = 0.24 \quad NS \quad p > 0.05 \]

**DISCUSSION**

The present study was planned to find out the efficacy of paracervical block in accelerating the first stage of labour in primigravidas. Several studies have found a statistically significant reduction in the injection-delivery interval. Nagal et al 1995, Jina 1990, Shravage JC 1997, found a considerable reduction in the injection-delivery interval in the study group. In the control group the injection delivery internal varied from 4 hrs 47 min to 5 hrs 52 min (present study). However in the paracervical group it varied from 2 hrs 30 min (Nagal) to 3 hrs 8 min. The effect of paracervical block on fetal heart rate has been studied. Lefevre Micheal in 1984 studied 300 cases and Got a rate of post paracervical block
bradycardia of 11.3%. He found that restricting the use of paracervical block to cases with reassuring fetal heart patterns should minimize this complication of obstetrical anaesthesia. In the present study 8% cases had transient bradycardia lasting for 5-12 min.

The Apgar score is not affected by paracervical block as shown by the study of Nagal et al 1995\textsuperscript{1} and present study. Several studies have confirmed the efficacy of this method in pain relief. Complete relief ranged from 80% (Deshpande et al 1989)\textsuperscript{5} to 93% (Baken et al 1962).\textsuperscript{6} In the present study complete relief was 40% and satisfactory in 42% of cases.

No appreciable change in pulse rate or blood pressure was noted, uterine contractility was also not affected. Maternal side effects like Giddiness, sweating and tingling of lower limbs lasted for short period of time.

CONCLUSION

Paracervical block is a simple, easy method with does not require any expertise for administration and is helpful for patient. The study supports the hypothesis that paracervical blocked accelerates labour.

REFERENCES