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Effect of Paracervical Block in Accelerating the Active Phase of Labour in Primigravidas -a Randomised Clinical Trial

Dr. Latha.B Assistant professsor,Department of OBST & Gynaecology, J.J.M Medical college, Davangere, Karnataka,India

Dr. Nisha kanchan Senior resident,Department of OBST & Gynaecology J.J.M Medical college,Davangere,Karnataka,India

ABSTRACT

Aim of the study :To ascertain the effect of paracervical block in accelerating the active stage of labour in primigravidas.The degree and duration of pain relief provided by paracervcial block and its effects on the fetus were also studied.
Methods: Hundred cases of uncomplicated primigravidas with full term gestation were selected and randomized into two groups of 50 each by single blind technique. The cases were studied over a period of one year from june 2014- june 2015.
Results: 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.
Conclusion: Paracervical block accelerates labour and provides adequate analgesia with out any adverse effect on the fetus.

KEYWORDS Paracervical block; analgesia; fetal bradycardia

INTRODUCTION :
The process of labour and birth in humans is unique as the mother app requires the assistance of other individuals for optimal outcome. The first stage occurs from onset of cervical changes to 10 cms dilatation. It can be divided into latent and accelerative phases. The latent phase can last up to 8 hrs and requires no intervention.The active phase is associated with a faster rate of cervical dilatation and usually begins at 2-4cms dilatation and the duration varies from 2 to 6hrs. Cervical factors play an important role in determining the progress and duration of labour in first stage.Paracervical block involves injection of local anaesthetic around the cervix to numb nearby nerves.It abolishes the parasympathetic inhibitory effect on the cervix and relieves the spasm of the cervix and helps in faster cervical dilatation,accelerates labour and also provides pain relief.Introduced in 1992 its popularity waned because of fears of fetal bradycardia.Recent studies do not support this view and with proper technique, paracervical block enjoys the position of a simple and effective procedure.

MATERIALS AND METHODS :
The study included a total of 100 cases of uncomplicated primigravidas with full term pregnancy in established early labour admitted to a tertiary care hospital between june 2014-june 2015.After taking institutional ethical committee clearance ,the cases were randomly allocated in to study and control group.An informed written consent was taken from all the patients.

Exclusion criteria for the study included patients with Uteroplacental insufficiency,

Diabetes,PET,postterm,Malpresentation,IUGR,Preterm,PROM,-congenital anomalies

The study was conducted using 20 ml of 2% Lignocaine in 50 study cases and 20 ml of distilled water in 50 control cases. Under aseptic precautions Injections were given at 2,5,7 and 11o clock position in the lateral vaginal fornix with paracervical block needle. 5 ml of Lignocaine was instilled at each position. Patient were monitored every 15 mins for 30 min 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 untoward maternal side effects were noted.

RESULTS :
The mean active phase of labour in the study group was 3 hrs 14 min where it was 5 hrs 48 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 (2.12 cms//hr) in the study group as compared to control group (1.22 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 paracevical block bradycardia, which was transient lasted for 5-10 min. All patient were given left lateral position, and the fetal heart rate picked up, foetal outcome is shown in (table- 2). None of the babies in study group had birth asphyxia.

Maternal side effect :
Most of the patient 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

	Study	Control	Significance	
			t-value	p-value
Mean active phase of labour (Hrs min)	3 hrs 14 min ± 0.24	5 hrs 48 min ± 0.7	17.6	< 0.001, HS
Mean duration of second stage (min)	35.3 ± 12.7	39.9 ± 10.2	0.84	0.42, NS (p > 0.05)
Mean duration of third stage (min)	5.12 ± 0.62	4.75 ± 0.48	0.55	0.54, NS (p > 0.05)

Mean rate of cervical dilatation (cm/hr)	2.12 ± 0.28	1.22 ± 0.18	22.4	< 0.001, HS
Mean injection delivery interval (hrs min)	3 hrs 34 min ± 0.32	6 hrs 22 min ± 0.34	18.1	< 0.01, HS

TABLE – 2 : FOETAL OUTCOME

Apgar at 5 min	Study n (%)	Control n (%)
< 4	0	0
5 – 7	5 (10)	2 (4)
> 8	45 (90)	48 (96)
Total	50 (100)	50 (100)

$\chi^2 = 1.38$ p = 0.24 NS - 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,[1] Jina 1990,[2] Shravage JC 1997,[3] found a considerable reduction in the injection- delivery interval in the study group. In the control group the injection to delivery interval varied from 4 hrs 47 min to 5 hrs 48 min (present study). However in the paracervical group it varied from 2 hrs 30 min (Nagal) to 3 hrs 14 min. The effect of paracervical block on fetal heart rate has been studied. Lefevre Micheal in 1984[4] studied 300 cases and the incidence of post paracervical block bradycardia was 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[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)[5] to 93% (Baken et al 1962).[6] In the present study complete relief was 42% and satisfactory in 40% of cases.

There were no appreciable change in pulse rate or blood pressure.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 which does not require any expertise for administration . It accelerates the active stage of labour with no adverse effecst on fetal heart rate.

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