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## EPIDURAL ANALGESIA IN LABOUR; MATERNAL AND FETAL OUTCOME



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**ABSTRACT...** [drhumairatabbasum@gmail.com](mailto:drhumairatabbasum@gmail.com). **Objective:** To evaluate the effects of epidural analgesia on the pain relief and maternal and fetal outcome. **Study design:** Comparative & analytical study. **Place and Duration:** In Military Hospital Rawalpindi from Oct 1998 to Oct 1999. **Patients and Method:** 100 full term healthy primigravida admitted for induction of labour. Fifty patients were given epidural analgesia and 50 served as control to whom no analgesia was given. Outcome measures observed were duration of labour, mode of delivery; Apgar score of the newborn; untoward reaction and intra-partum complications. **Results:** The data analysis revealed that epidural analgesia significantly prolonged labour time and was associated with increased instrumental delivery rate. Significant reduction in intra-partum fetal complications was seen, while C-section rate was not effected by epidural analgesia. Apgar scores were higher in analgesia group as compared to control. **Conclusion:** Although accused of prolonging labour time, it's benefits in terms of great maternal satisfaction and reduced intra-partum complications still makes it an option for labouring patients.

**Key words:** Epidural Analgesia; Duration of Labour; Fetal Outcome.

### INTRODUCTION

The experience of childbirth ranges from agony to ecstasy. Each year millions of women pass through the stages of pregnancy and labour. Melzack<sup>1,2</sup> and his colleagues have spent 15 years studying the intensity of artificially provided and naturally occurring pain, concluded that pain of labour was the most severe they have assessed<sup>3,4</sup>.

Down through the ages, the relief of pain during labour has been of great interest both to the physician and to the

patients. Despite the cultural and mythical influence on women regarding labour pain, women have always sought relief from pain of childbirth and have used many means available to them.

Intra-partum epidural analgesia has become increasingly popular because it is the only available fully effective method of providing pain relief during labour. Some obstetricians and lay public have claimed that epidural analgesia in labour has harmful effects on the progress and outcome of labour. Epidural analgesia has also

been accused of stopping uterine contraction, slowing labour and increasing incidence of mal-presentations and the need for cesarean section. But recent studies in the field have shown that by reducing the dose of agents used in the last 10 years can eliminate much of these effects. Lot of research has already gone in and tremendous progress has been made in this field.

## PATIENTS AND METHODS

This study was conducted in Military Hospital Rawalpindi from Oct 1998 to Oct 1999. We admitted 100 full term primigravida women for induction of labour and divided them into two groups.

**GROUP - I** Women who were given epidural analgesia for painless labour.

**GROUP - II** Women who had natural childbirth without any form of analgesia. This group served as control.

Both the groups were comparable in age, parity, gestational age and bishop score.

Pre-anaesthetic assessment of all the patients included in the study, was done by anaesthetist. Patients were briefed about the procedure and what to expect. Fear and apprehension about the outcome was relieved by discussion and informed consent obtained. Induction of labour was started with tablet prostine E2, amniotomy and oxytocin infusion. Epidural block was given with the help of anaesthetist. Analgesia was started when cervical dilatation was 3 cm and fetal head was going down with effacement of 80 %.

Pre-loading Done with 500 cc of isotonic saline 1/2 hour before epidural block. Initial block was established with 10ml of 0.25% injection bupivacaine. Top up doses of 3cc 0.25 % bupivacaine was injected whenever required. These were generally required two to three times specially at second stage of labour for perineal analgesia.

## RESULTS

The results are presented in the form of mean plus minus standard deviation and the percentage of total number of patients. For statistical analysis student t – test and chi-square test were used and the results are recorded in the

tabulated form. The two groups were broadly matched for age, weight, and parity and no significant difference was found. Duration of labour was somewhat prolonged in Group-I  $5.907 \pm 1.606$  as compared to Group - II:  $5.199 \pm 1.421$  ( $t=2.334$ ;  $df=98$ ;  $P<0.05$ ). Regarding rate of instrumental delivery there was significant difference between Group-I i.e. 28 % as compared to Group-II i.e. 12 %.

In Group-I (with analgesia), intra-partum complications like (nausea, vomiting, hypotension, meconium staining) and postpartum complications were significantly decreased as well as intra-partum fetal complications.

The complications of epidural block were negligible and that too were only of minor nature like, hypotension (2%) and postpartum urinary retention (2%). The only unpleasant side effect noticed in 14 patients was motor blockage in lower limbs (28%). There were more psychological reactions like anxiety, fear and apprehension in Group - II (20%) as compared to Group-I (6% only). Apgar score of the newborn in Group - I was better than Group-II. But statistical analysis revealed no significant difference.

**Table-I. Duration labour (Hours) Mean  $\pm$  S.D.**

Group I (n=50) (Epidural)	Group II (n=50) (Non Epidural)
5.907 $\pm$ 1.606	5.199 $\pm$ 1.42
$T = 2.334$ ; $df = 98$ ; $P < 0.05$	

**Table-II. Mode of delivery**

Mode of delivery	Group I (n=50) (Epidural)	Group II (n=50) (Non-Epidural)
Spontaneous	34 (68%)	42 (84)
Instrumental	14 (28%)	6 (12%)
C-Section	2 (4%)	2 (4%)

Complications	Group I (n=50) (Epidural)	Group II (n=50) (Non-Epidural)
FHR Changes	4 (8%)	9 (18%)
Meconium Staining	2 (4%)	7 (14%)
Nausea Vomiting	2 (4%)	5 (10%)
Apprehension & Anxiety	3 (6%)	10 (20%)
No Complications	39 (78%)	19 (38%)

Nature of complications	No of pts (%age)
Hypotension (>30% decrease in systolic BP)	1 (2%)
Retention of urine	1 (2%)
Motor loss	14 (28%)

Apgar	Group I (Epidural)		Group II (Non- Epidural)		Total	
	No	%	No	%	No	%
7-10	46	92%	39	78%	85	85%
< 7	4	8%	11	22%	15	15%
Total	50	100%	50	100%	100	100%

Apgar	Group I (Epidural)		Group II (Non- Epidural)		Total	
	No	%	No	%	No	%
7-10	50	100%	45	90%	95	95%
< 7	0	0%	5	10%	5	5%
Total	50	100%	50	100%	100	100%

## DISCUSSION

Epidural analgesia in labour is a hotly debated topic today. It provides effective pain relief for women in labour. In our setup the technique has not gained much of popularity due to multiple factors involved specially the fears of its associated complications, which have been much exaggerated by lay public.

This study demonstrates that epidural block using

bupivacaine 0.25% when administered during active phase of labour, tends to prolong the duration of labour and causes an increase in the instrumental delivery rate. This is in agreement with the study conducted by Chestnut and Rojansky N et al<sup>5,6</sup>. However in this study the difference in the duration of labour between the two groups was not much although the statistical analysis reveals it to be significant. This can be explained due to liberal use of oxytocin during our induction protocol<sup>7</sup>. The increased rate of instrumental delivery was in agreement with the work conducted by Chestnut and Rojansky N et al<sup>5,6</sup>.

It has also been suggested that prolongation of the first stage may occur with too early administration of epidural analgesia during the latent phase, but recent well-controlled studies have failed to show such an effect<sup>8</sup>. Large crystalloid preload can also carry the same adverse effect.

Some concerns have been raised on the issue of increased C-section rate with epidural analgesia. This study demonstrates that there is no difference between the two groups regarding C-section rate. This is in contrast to the study conducted by Liberman et al<sup>7</sup> and in agreement with the study conducted by Rojansky and Gribble et al<sup>6</sup>. The infants born in the epidural group had better apgar score compared to the non-epidural group. But the statistical analysis failed to reveal any significant difference.

## CONCLUSION

Although lumbar epidural prolongs labour and increases incidence of instrumental delivery but is still cost effective. Its benefits in terms of great maternal comfort and satisfaction, reduced intra-partum fetal complications, still makes it the preferred mode of labour analgesia and it should remain an option to the laboring women after explaining her about risks involved and pain relieving options.

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