

# Labor outcome in epidural and combined spinal epidural analgesia

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## Abstract

**Objectives:** 1) To compare the analgesic efficacy and side effects of CSE with conventional epidural analgesia. 2) To study the mode of delivery, fetal, maternal and neonatal complication with CSE as compared to epidural analgesia.

**Materials and Methods:** A total of 64 women with full term live pregnancy in active labour with 3 cm dilatation of cervix requesting labour analgesia were enrolled into study after their informed consent. 32 of them were given CSEA and rest of them were given epidural analgesia. Quality of analgesia was assessed with Pain relief scores noted using visual analog scale. Top ups are given as when the patient requests. The duration of labour, mode of delivery, apgar scores of the baby and complications in the mother or the baby are recorded. **Results:** There are no differences in duration of labour and the mode of delivery in both the groups are CSE group is associated with faster cervical dilatation rate of 1.90+/-1.48 and better pain relief score when compared to epidural group. Women in epidural required more number of top ups with average time interval between the top ups being 92.33mins. incidence of pruritus is more among the women of CSE group. **Conclusion:** CSE is a better method of pain relief in labour when compared to conventional epidural technique as it is associated with faster cervical dilatation and decreased need for top ups.


**Keywords:** cervical dilatation rate, pain relief, labour.

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## INTRODUCTION

The demand for analgesia during labour is increasing as always. Newer methods of are being used increasingly out of which epidural analgesia is popular. Traditional epidural analgesia has been associated with prolonged labour, rise in oxytocin augmentation and instrumental deliveries. The new CSE technique is believed to reduce these adverse effects and provide rapid onset of analgesia with minimal motor blockade. CSE technique is also

associated with faster cervical dilatation rates. But as CSE technique is used preferentially in women in advanced labour the faster cervical dilatation rates may also be an artifact of patient selection. The present study compares the efficacy of the two analgesic techniques in women who are administered analgesia when their cervical dilatation is around 3-4 cms with similar bishop scores. This study compares the effect of epidural and combined spinal epidural techniques on mother, fetus and labour and mode of delivery so that women can be offered a better analgesia during labour to make child birth a satisfying experience.

## MATERIALS AND METHODS

A total of 64 women with full term live pregnancy getting admitted to labor room of MSRMT and MSRMH between 1<sup>st</sup> November 2006 to 31<sup>st</sup> may 2008 and requesting epidural analgesia in labor were enrolled into study after their informed consent. After admission a detailed history, general physical examination, systemic and obstetric examination is done. Relevant investigations

done and patients are prepared like any other labouring patient. Epidural analgesia is given to the patient who fulfills the following criteria.

1. Patient should be in active labour.
2. Contraction should be regular and of good intensity
3. Cervix should be about 3-4cm dilated.

After informed consent epidural or CSE analgesia is given to the patient. Following the analgesia her vitals are checked every 5 minutes for first half an hour and later every half hourly. The time of onset of analgesia, level of sensory and motor block are recorded. The frequency, intensity and number of uterine contractions and fetal heart rate changes are noted. Pain relief scores are noted using visual analog scale. Top ups are given as when the patient requests. The patient is managed as per the labour room protocol. The duration of labour, mode of delivery, Apgar scores of the baby and any complications in the mother or the bay is recorded. The patient is followed

until discharge and the condition of the mother and the baby at the time of discharge is noted.

### RESULTS

The groups were well matched with respect to maternal characteristics and cervical parameters are comparable at the initiation of the study (table1) Pain relief scores are better with CSEA and they required less top ups when compared to patients in epidural group. Maternal satisfaction was higher in CSEA group however it did not reach statistical significance. 2 patients in CSEA group had post dural puncture headache.(table2) Analgesia was initiated at the active stage of labor and bishop scores at the initiation of analgesia is comparable at both groups. Cervical dilatation rates were significantly higher in CSEA group however the duration of labour was comparable in both groups so is the mode of delivery. Intapartum and postpartum complications were comparable in both the groups (Table3).

**Table 1: Maternal profile**

Parameter	Group A	Group B	P value
Age	23.47+/_3.68	24.91+/_2.58	0.1
Primi	23	23	
Multi	9	9	
Bishop score	7.53+/_1.83	8.13+/_1.93	0.2
<b>Cervical dilatation at the intiation of analgesia</b>	<b>3.75+/_0.88</b>	<b>3.84+/_0.52</b>	<b>0.65</b>

**Table 2: Effect on labour and maternal outcome**

Parameter	Group A	Group B	P value
Cervical dilatation rate	1.98+/_1.43	1.30+/_0.93	0.040
Pain relief score	1.50+/_0.98	2.75+/_1.61	<0.001
Number of top ups	1.53+/_1.11	2.56+/_1.32	0.001
Time in minutes at which top ups required	100.36+/_9.22	92.33+/_4.30	<0.001
<b>Duration</b>			
First stage	6.71+/_4.73	7.25+/_1.29	0.148
Second stage	30.34+/_14.71	29.46+/_6.9	0.788
Third stage	10.17+/_4.9	6.46+/_3.45	0.003
<b>Cardiotocography</b>			
Non reassuring	9.4%	6.2%	
<b>Mode of delivery</b>			
Normal delivery	65.6%	71.9%	0.352
Instrumental	21.9%	9.4%	
LSCS	12.5%	18.8%	
<b>Maternal complications</b>	<b>6.3%</b>	<b>3.1%</b>	<b>1</b>

**Table 3: Neonatal outcome**

Parameter	Group A	Group B	P value
Apgar score			
5 min			
Birth weight(kg)	2.80+/_0.58	2.90+/_0.36	0.420
<b>Nicuadm</b>	<b>3.1%</b>	<b>3.1%</b>	

### DISCUSSION

The present study shows that both the regimens do not affect the duration of labor mode of delivery post-partum

and neonatal complications or the Apgar scores. The analgesia was initiated at the active phase of labor with comparable bishop scores in both the groups. Cervical

dilatation rates were significantly higher in CSEA group consistent with the findings of *tsenet al*<sup>1</sup> In COMET study the VAS scores reported in CSEA group was significantly less than that of epidural group and the difference was maintained up to 1 hour<sup>2</sup>. Whereas in the study by *tsen et al* showed no significant difference in VAS scores between CSEA and epidural groups throughout labour<sup>1</sup>. In our study pain relief scores are better with CSE group. The profound pain relief associated with the CSE group may be an effect of intrathecal opioids or the sustained effect of the spinal local anaesthetic even after an hour after administration. The need for top ups were less in CSEA group (mean time interval between the top ups being 100 minutes) as compared to epidural group (mean time interval between the top ups being 90 minutes) in contrast with the findings of *noegotteet al*<sup>3</sup>. No difference in the incidence of fetal heart rate abnormalities were in both the groups in consistent with the findings of *palmer et al*<sup>4</sup>.

## CONCLUSION

CSEA technique is a better method of analgesia when compared to the epidural technique as it gives a better pain relief and faster cervical dilatation rates. CSEA technique requires lesser top ups but there is a mild increase in the incidence of pruritus.

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