

**A PROSPECTIVE STUDY OF MATERNAL SATISFACTION WITH SPINAL ANEASTHESIA FOR CAESAREAN DELIVERY IN A TERTIARY CARE HOSPITAL**

**Dr. Shanthala S Naik<sup>1</sup>, Dr. Krishna Rathod<sup>2</sup>, Dr. Vishal Baradwad<sup>3</sup>, Dr.Sainath<sup>4\*</sup>**

<sup>1</sup>Assistant Professor, Department of Anaesthesiology, Koppal Institute of Medical Sciences, Koppal.

<sup>2</sup>Assistant Professor, Department of Anaesthesiology and Critical Care, ESIC Medical College and Hospital, Kalaburagi.

<sup>3</sup>Senior Resident, Department of Neuroanaesthesia and Neurocritical care, NIMHANS, Bangalore.

<sup>4\*</sup>Senior Resident, Department of Anaesthesiology and Critical Care, ESIC Medical College and Hospital, Kalaburagi.

**Corresponding Author: Dr.Sainath**

**Senior Resident, Department of Anaesthesiology and Critical Care, ESIC Medical College and Hospital, Kalaburagi.**

**Abstract**

**Introduction:** Spinal anesthesia is a safe anesthetic technique for cesarean delivery which gained worldwide acceptance since the introduction to clinical practice. It has good quality of analgesia and avoids general anesthesia-related maternal morbidity and mortality, decreased risk of gastric aspiration, avoids exposure of anesthetic depressant drugs to the neonate, less incidence of deep venous thrombosis, and decreases blood loss during surgery. In addition, it has favorable effects on bonding the mother to the newborn.

**Materials and Methods:** This is a historical, observational cross-sectional study of parturients who had epidural analgesia for labour in the year 2023. The routine practice in the institution is that the parturient is counselled by the anesthetists in the labour room, regarding the availability of labour analgesia services. Those who agree and consent for the same have it sited once they are in active labour, in discussion with the obstetrician. The epidural is placed by conventional methods by a consultant or if a postgraduate student, under a consultant's supervision. Titrated volumes of 0.1% ropivacaine with 10-20 mcg of fentanyl is used for the initial bolus followed by 0.1% ropivacaine plus 2 mcg/cc of Fentanyl as the continuous infusion.

**Results:** The details of 114 parturients who receive labour epidural during this period were entered and analysed. 96 (84.6%) were primigravida and 18 (15.4%) were multigravidas. 33 parturients (29.8%) had heard of labour analgesia before. 100 (90.1%) felt adequate information was provided by the anaesthesiologist regarding the epidural and 99 (88%) felt they had enough time to consent for the same. 97 (86.2%) felt they received the epidural 'on time'. 'On time' was a subjective assessment by the parturient of promptness of initiation of epidural analgesia, once she requested the services. 73 (68.9%) said the infusion was given continuously through her

labour. With regards to analgesia 95 (85.6%) felt their overall pain relief was adequate. Author assessed pain further in terms of when the pain was present and intensity of pain and found that 60% of parturients had no pain or the pain was present only sometimes. 25% had pain only during second stage. 60% of parturients had no pain or mild pain.

**Conclusion:** Patient satisfaction with regards to labour epidural is multifactorial. In patients opting for epidural analgesia, prompt initiation and effective pain relief is of utmost importance. Author need to concentrate on antenatal counselling of patients to disseminate appropriate and accurate information regarding labour analgesia and providing timely and quality service to the patients.

**Key Words:** Spinal anesthesia, maternal morbidity, mortality, to labour epidural.

## **INTRODUCTION**

Spinal anesthesia is a safe anesthetic technique for cesarean delivery which gained worldwide acceptance since the introduction to clinical practice.<sup>1</sup> It has good quality of analgesia and avoids general anesthesia-related maternal morbidity and mortality, decreased risk of gastric aspiration, avoids exposure of anesthetic depressant drugs to the neonate, less incidence of deep venous thrombosis, and decreases blood loss during surgery. In addition, it has favorable effects on bonding the mother to the newborn.<sup>2</sup>

Rate of cesarean delivery has been rising all over the world with a rate of 13-39%. The overall institutional rate of the national population-based cesarean delivery in Ethiopia was 15–18%, which reaches 46% in the private sectors, among which maternal indications accounted for 66%, and others were fetal indications.<sup>3</sup>

During preoperative anesthetic evaluation, it is important to explain the procedure, side effects, and possible complications of SA to parturients and obtain informed consent, and this process may improve retention of information and increase maternal satisfaction. In addition, emotional support before spinal anesthesia for cesarean delivery helps to decrease preoperative anxiety and increase maternal satisfaction.<sup>4</sup>

As much as spinal anaesthesia is easy to administer there are complications that accompany it for both the mother and the neonate. These complications can severely impact on maternal satisfaction with care. There are no definitive protocols that have been found to totally eliminate the risks of maternal complications during and after caesarean section under spinal anaesthesia. It is, therefore, important to establish the level of client satisfaction with spinal anaesthesia which is one of the indicators of quality of care.<sup>5</sup>

## **MATERIALS AND METHODS**

This is a historical, observational cross-sectional study of parturients who had epidural analgesia for labour in the year 2023. The routine practice in the institution is that the parturient is counselled by the anaesthetists in the labour room, regarding the availability of labour analgesia services. Those who agree and consent for the same have it sited once they are in active labour, in discussion with the obstetrician. The epidural is placed by conventional methods by a consultant or if a postgraduate student, under a consultant's supervision. Titrated volumes of 0.1% ropivacaine with 10-20 mcg of fentanyl is used for the initial bolus followed by 0.1% ropivacaine plus 2 mcg/cc of Fentanyl as the continuous infusion.

Postnatally after the catheter is removed and the patient is shifted to the ward, an anaesthetist different from the team that sited the catheter administers a feedback form formulated by the department with questions assessing her prior knowledge about labour analgesia and her current experience with the same. Patients enter their overall satisfaction scores regarding the anaesthetic services and the efficacy of the labour epidural on a range of 0-10. The anaesthesia department also maintains an epidural register which documents details such as time of insertion of catheter and experience of the anesthesiologist.

The historic data was collected from the feedback forms, the epidural register and the electronic discharge summary.

## **Inclusion criteria**

All patients who had an epidural inserted for labour analgesia in the year 2023.

## **Exclusion criteria**

Patients whose forms had incomplete data like missing or wrong hospital number, for which further information could not be collected.

There are many studies that state that analgesia is not the only contributor to patient satisfaction. These are the various factors that were analysed, that may have an association with satisfaction in the society.

- Factors related to her past obstetric history such as history of abortions or treatment for infertility
- Factors related to the epidural like experience of the anesthesiologist who placed it, whether analgesia was initiated promptly and whether there were any epidural related complications.
- Factors related to her labour and delivery-mode of delivery, presence/ degree of perineal tear, time between placement of epidural catheter and delivery-which it was termed as duration of epidural analgesia
- Factors related to the baby- the sex of the child, the Apgar score and nursery admission

- Factors related to the immediate post-natal period-fever on day one.

Neural deficit was defined as numbness and or weakness unilaterally or bilaterally persisting 24 hours after delivery. Urinary retention was defined as the inability to void spontaneously after delivery or a post void residue of more than 150cc after micturition, requiring an indwelling urinary catheter for 48 hours.

**Statistical analysis**

Data was collated into Microsoft Excel and analysed in SPSS version 21. The Institutional Review Board of the centre approved of the study.

**RESULTS**

The details of 114 parturients who receive labour epidural during this period were entered and analysed. 96 (84.6%) were primigravida and 18 (15.4%) were multigravidas. 33 parturients (29.8%) had heard of labour analgesia before. 100 (90.1%) felt adequate information was provided by the anaesthesiologist regarding the epidural and 99 (88%) felt they had enough time to consent for the same. 97 (86.2%) felt they received the epidural ‘on time’. ‘On time’ was a subjective assessment by the parturient of promptness of initiation of epidural analgesia, once she requested the services. 73 (68.9%) said the infusion was given continuously through her labour. With regards to analgesia 95 (85.6%) felt their overall pain relief was adequate. Author assessed pain further in terms of when the pain was present and intensity of pain and found that 60% of parturients had no pain or the pain was present only sometimes. 25% had pain only during second stage. 60% of parturients had no pain or mild pain.

96 (85.7%) parturients said they would recommend labour epidural to their friends and relatives. 74 (66.7%) said they would request an epidural for their next pregnancy. 8 (7.6%) said they were not sure if they wanted an epidural for the next pregnancy, 4 (4%) said they had completed their family with this delivery and 24 (21.6%) said they would not request an epidural in their next pregnancy.

<b>Parameter</b>	<b>Percentage</b>
No Pain	32.1%
Some times present	28.5%
Mostly present	14.6%
Only Towards the end	24.8%

**Table 1: Timing of the presence of pain while on epidural labour analgesia**

<b>Parameter</b>	<b>Percentage</b>
No Pain	21.9%
Mild	38.8%
Moderate	28.4%

Severe	10.9%
--------	-------

**Table 2: Intensity of pain while on epidural labour analgesia**

Mode of delivery	Percentage
LSCS	30%
Instrument	31%
NVD	39%

**Table 3: Mode of Delivery**

Variable	OR	95%CI	P Value
<b>History of abortion /infertility</b>			
Yes	1.00	0.32-1.65	0.443
No	0.72		
<b>First pregnancy</b>			
Yes	1.00	1.29-8.20	0.013
No	3.25		
<b>Heard of labour analgesia services before</b>			
Yes	1.00	0.38-1.69	0.564
No	0.80		
<b>Adequate information regarding epidural given</b>			
Yes	1.00	0.93-8.08	0.068
No	2.74		
<b>Epidural received on time</b>			
Yes	1.00	1.79-12.43	0.002
No	4.72		
<b>Experience of anaesthetist</b>			
Consultant	1.00	0.49-2.36	0.863
Post Graduate	1.07		
<b>Overall pain relief</b>			
Yes	1.00	1.50-11.06	0.006
No	4.08		
<b>Time between placement of epidural catheter and delivery</b>			
121-600 minutes	1.00		
<120 days	5.69	1.27-25.57	0.023
>600 minutes	3.99	1.63-9.76	0.002
<b>Epidural related complications</b>			
No	1.00	0.23-1.91	0.439
Yes	0.65		
<b>Mode of Delivery</b>			
Vaginal	1.00	0.74-3.31	0.248

LSCS	1.56		
<b>Gender of Child</b>			
Male	1.00	0.62-2.55	0.517
Female	1.26		

**Table 4: Unadjusted logistic regression analysis of potential covariates of patient dissatisfaction. Status ‘high satisfaction’ was used as the reference category.**

**DISCUSSION**

Though initially condemned by religious bodies; once administered by John Snow to Britain’s Queen Victoria in 1853, labour analgesia gained popularity. After having gone through a period known as the “dark ages of obstetric anaesthesia” between the 1930s to the 40s, vast improvements in the safety of regional analgesia were made in the 1950s and advances continue to be made.<sup>6</sup>

Studies from India on parturient’s experience, satisfaction and factors affecting the same are but few, looking into various aspects like perceptions, expectations and attitudes. A study from Southern India concluded that analgesia is not always of primary importance but meeting the parturient’s expectations plays a major role in parturient satisfaction.<sup>7</sup>

Kamakshi et al conducted a study in a tertiary centre in North West India, and highlighted that parturient knowledge is poor and there is a wide gap between the desire for analgesia and the availability of prompt services.<sup>8</sup>

Samanta et al found better maternal satisfaction and analgesic efficacy with epidural compared to intramuscular Tramadol which is the readily available analgesic in most settings. A study based on individual in depth interviews and focus group discussions of women who delivered at home or in the primary health centres of rural East India found that the expectations of parturients in that set up was; affordable and accessible health care services, along with privacy and emotional support.<sup>9</sup>

Institution is a tertiary to quaternary care centre catering to a mixed population of rural and urban patients. Author conducted 14,696 deliveries in 2017; with the rates of normal vaginal deliveries being 50.7%, instrumental 15.98% and caesarean 30.72%.

84.4% of the patients were primigravida. There are other studies too that found higher request rates amongst primigravids. The primigravid is more likely to request for labour analgesia, owing to a greater fear of labour pains. Multigravidas were three times more likely to give lower satisfaction scores, (p-0.013) in keeping with the study done by Tan et al, in Singapore. A likely explanation of this finding is that a multiparous parturient probably has higher expectations of analgesia.

Mode of delivery did not affect satisfaction scores, though there were 16 patients who strongly attributed their caesarean section to the epidural.

While many states in India still battle with skewed child sex ratios, because of a preference for the male child, we looked to see if satisfaction scores were affected by sex of the child.<sup>10</sup> It is interesting to find no statistically significant relation ( $p = 0.517$ )

### **CONCLUSION**

Patient satisfaction with regards to labour epidural is multifactorial. In patients opting for epidural analgesia, prompt initiation and effective pain relief is of utmost importance. Author need to concentrate on antenatal counselling of patients to disseminate appropriate and accurate information regarding labour analgesia and providing timely and quality service to the patients.

### **REFERENCES**

1. Casey, W. F. (2000). Spinal Anaesthesia - a Practical Guide The Advantages of Spinal Anaesthesia Disadvantages of Spinal Anaesthesia. Update in Anaesthesia, 12(12), 1–7.
2. Dharmalingam, T. K., & Ahmad Zainuddin, N. A. (2013). Survey on maternal satisfaction in receiving spinal anaesthesia for caesarean section. The Malaysian Journal of Medical Sciences : MJMS, 20(3), 51–4.
3. Gebremedhn, E. G., & Nagaratnam, V. (2014). Assessment of patient satisfaction with the preoperative anesthetic evaluation. Patient Related Outcome Measures, 5, 105–10.
4. Melese, T., Gebrehiwot, Y., Bisetegna, D., & Habte, D. (2014). Assessment of client satisfaction in labor and delivery services at a maternity referral hospital in Ethiopia. Pan African Medical Journal, 17.
5. Rashad Siddiqi, & Syed Asadullah Jafri. (2009). Maternal Satisfaction after Spinal Anaesthesia for Caesarean Deliveries. Journal of The College of Physicians and Surgeons Pakistan, 19(2), 77–80.
6. Shorten, A., Shorten, B., Keogh, J., West, S., & Morris, J. (2005). Making Choices for Childbirth: A Randomized Controlled Trial of a Decision-aid for Informed Birth after Cesareana. Birth-Issues in Perinatal Care, 32(4), 252–261.
7. Sindhvananda, W., Leelanukrom, R., Rodanant, O., & Sriprajittichai, P. (2004). Maternal satisfaction to epidural and spinal anesthesia for cesarean section. Journal of the Medical Association of Thailand = Chotmaihet Thangphaet, 87(6), 628–635.
8. South Australian Patient Evaluation of Health Services (PEHS). (2007). Maternity Services in South Australian Public Hospitals: Patient Satisfaction Survey Report.
9. Stanton, C. K., & Holtz, S. A. (2006). Levels and trends in cesarean birth in the developing world. Studies in Family Planning, 37(1), 41–48.
10. Van Campen, C., Sixma, H., Friele, R., Kerssens, J., Peters, L., & Netherlands Institute of Primary Health Care. (1995). Quality of care and patient satisfaction: a review of measuring instruments. Medical Care Research and Review, 52(1), 109–133.