



# The Efficiency of Epidural Analgesia on the Delivery: A Cross Sectional Study

Dr E.J.Srinivas, Dr Brijesh G.C

*Associate Professor, Dept of Anesthesiology East Point College of medical sciences and research centre, Virgonagar post, Bidarahalli, Bangalore.*

*Professor, Dept of Anesthesiology, East Point College of medical sciences and Research centre, Virgonagar post, Bidarahalli, Bangalore.*

Submitted: 05-03-2022

Accepted: 16-03-2022

**ABSTRACT:** Epidural anesthesia can be considered as an effectual form of pain reliever for both vaginal delivery as well as cesarean delivery. During injection process a sterilized needle with flexible catheter is injected into epidural space under aseptic precaution. This injection produces local anesthesia but patient will be awake during the process of labour. This was a retrospective study done on women who are admitted in the labour ward, at East Point College of medical sciences and Research centre, from January 2021 to June 2021. In the study the totally 50 eligible women with a mean maternal age at delivery of 23 years were included. Mean BMI value was 22 kg/m<sup>2</sup>. Among the 50 participants 30 women opted for epidural analgesia during labour. The rate of the instrumental delivery was 20% and caesarean section was 15%. The male baby constitutes 52% and female baby 48%. The average birth weight of the babies was 3335 grams. 12% of the babies were presented with meconium stained liquor and 4% of all babies were admitted to the neonatal care.

**KEYWORDS:** Epidural anesthesia, cesarean delivery.

## I. INTRODUCTION:

Epidural anesthesia can be considered as an effectual form of pain reliever for both vaginal delivery as well as cesarean delivery. During injection process a sterilized needle with flexible catheter is injected into epidural space under aseptic precaution. This injection produces local anesthesia but patient will be awake during the process of labour. Then anesthetic agent is injected through the needle to achieve the required anesthesia.[1,2,3]

An epidural process requires fetal monitoring and supine position. The amount of anesthetic used determines the amount of pain or discomfort that one has. Higher levels of anesthetics will allow one to feel little or no pain from the contractions; whereas fewer anesthetics will allow the one to be more active during labour and feel adequate to push effectively. Before delivery the dose can be reduced, so that one can remain relatively comfortable and push more effectively. The area between the vagina and anus can also be numbed using an epidural catheter just before delivery.

Epidural anesthesia can wears off during childbirth unless additional medicine is given, as the dose of medicine given at any single time is small. Hence epidural infusion pumps are used in common and small amounts of epidural medicine is given continuously with the help of an infusion pump, thus need not to worry about wearing off of the pain relief during childbirth.[4,5,6]

The other important benefit of having an infusion pump is its ability in having control of your belly and leg muscles, alongside providing constant pain relief.

**OBJECTIVE:** To study the efficiency of epidural analgesia on the childbirth

## II. MATERIALS AND METHODS:

This was a retrospective study done on women who are admitted in the labour ward, at East Point College of medical sciences and Research centre, from January 2021 to June 2021.

Totally 50 women who at the term labour were participated in this study.

**Ethical approval:** To conduct this study, ethical approval was obtained by institutional ethical committee.



### III. RESULTS:

	Total number of study sample-50	Epidural used-20	Epidural not used-30
Maternal age (mean)	23years	24years	22years
BMI (mean)	22	22.2	21.8
Gestation in days (mean)	277	276	278
Normal vaginal delivery	26	11	15
Instrumental vaginal delivery	14	08	06
Caesarean section delivery	10	06	04

	Total study sample-50	Epidural used-20	Epidural not used-30
Fetal gender			
Male	26	06	20
Female	24	07	17
Birth weight (g), mean	3325	3450	3200
Headcircumference in cm	34.4	34.8	34.2
Apgar score less than 7 at 1 minute			
0-6	90	36	54
7-10	940	224	616
Apgar score less than 7 at 5 minute			
0-6	13	3	10
7-10	1020	319	701

### IV. DISCUSSION:

In the study the totally 50 eligible women with a mean maternal age at delivery of 23 years were included. Mean BMI value was 22 kg/m<sup>2</sup>. Among the 50 participants 30 women opted for epidural analgesia during labour. The rate of the instrumental delivery was 20% and caesarean section was 15%. The male baby constitutes 52% and female baby 48%. The average birth weight of the babies was 3335 grams. 12% of the babies were presented with meconium stained liquor and 4% of all babies were admitted to the neonatal care. Reasons for an instrumental delivery were cardiac abnormalities (40%), delayed 2nd stage labour(30%), maternal tiredness (14%), increased blood pressure (10%), fetal serological abnormalities (4%) and malposition of fetus in the uterus (2%).

In the current study, cesarian sections were performed due to failure to progress in labour (37%), cardiac abnormalities (25%), unsuccessful instrumental delivery (11%), unsuccessful induction (12%), abnormal fetal blood sample (5%) and chorioamnionitis and placental abruption (10%).

CS delivery and instrumental delivery rates were also higher among women who received epidural anesthesia. The babies in cases of women with an epidural had a significantly more head circumference and more birth weight. (Tables 1 and 2).

Increase BMI among the participants was associated with an increase in the usage of oxytocin this can explain the usage of higher rate of the epidurals, as a result of painful labour. Present study revolves around the presumption that women



with increased BMI may also have a decreased response to induced labour. But, there is no such study that directly reports higher BMI association with increased usage of epidurals in women.

According to review by Cochrane [3] confirmed no significant difference in the risk of CS delivery and also no significant difference between epidural and non epidural. Prolonged labour and thus increased rates of a CS delivery could be due to the result of the degree of motor block achieved by an epidural analgesia as demonstrated by the previous reports [4].

Further other studies [5, 6] have reported that as such epidural analgesia is not likely to affect the chances of a normal delivery and there are some other factors that may add to a CS delivery like increased birth weight. There is a need for instrumental delivery like vacuum suction or forceps usage when women have an epidural. An episiotomy (a cut made in the back of the vagina) is needed before one can deliver a child using a vacuum delivery or forceps and then it can be stitched later on, after the process of delivery.

Upon epidurals, women cannot feel the need to push; hence it becomes important for doctors and midwives to let them know when they need to start pushing. It is a common phenomenon that women still feel the desire to push in spite of having an epidural.

It is important to a woman to get up and walk around during the first phase of labour, during which time the cervix becomes shorter and opens up fully, this process is known as dilation. Since walking around is supposed to make delivery easier, the epidural must be set at a dose that is low enough for the woman to walk around. But studies have shown that there is no difference during birth in women who were lying down or who were walking around on an epidural in both cases.

During the second phase of labour, women are advised to change position to a seating up by adjusting the head of the bed or leaning on to their partner. However, it is up to the woman to choose a position that is best suitable for her during delivery as there is no such rule or a position that is mandatory while child birth.

A higher dose of an epidural needs to be used in case the woman wants to have a cesarean section. This means that the birthing experience can still be experienced when on an epidural. Usually, a curtain or a cover is placed in front of

the woman's belly, so that they will not be able to see the procedure. The baby can also be taken in her arms once the delivery process is complete. However, it is to be known that an epidural will not increase the chances of a cesarean section.

## V. CONCLUSION:

Epidural analgesia seems to be more efficient in decreasing pain during labor as compared to non-epidural anesthesia methods. This suggests that modern approaches to epidural analgesics in labour do not have any outcome on the increase in assisted vaginal birth. Apgar scores reveal that the epidural anesthesia had no effects on neonatal status or in admissions to neonatal intensive care. In fact epidural anesthesia had no impact on the threat of cesarean section or long term backaches experienced by women.

## REFERENCES:

- [1]. Torricelli, Voltolini, Bocchi, Severi, Petraglia. Weight gain regardless of pre-pregnancy BMI and influence of fetal gender in response to labor Induction in postdate pregnancy. *Journal of Maternal-Fetal and Neonatal Medicine*. 2013 : 26(10);1016–19.
- [2]. Baranova, Gowder, Schlauch. Gene expression of leptin, resistin, and adiponectin in the white adipose tissue of obese patients with non-alcoholic fatty liver disease and insulin resistance. *Obesity Surgery*. 2006;16(9);1118-25.
- [3]. Somuah, Smyth, Jones. Epidural versus non-epidural or no analgesia in labour. *Cochrane Database of Systematic Reviews*. 2011;12. Article ID CD000331.
- [4]. Chen, Lin, Yang. The effects of different epidural analgesia formulas on labor and mode of delivery in nulliparous women. *Taiwanese Journal of Obstetrics and Gynecology*. 2014;53(1);8–11.
- [5]. Cambic, Wong. Labour analgesia and obstetric outcomes. *British Journal of Anaesthesia*. 2010;105;50–60.
- [6]. Singh, Yahya, Misiran, Masdar, Nor, Yee. Combined spinal-epidural analgesia in labour: its effects on delivery outcome. *Brazilian Journal of Anesthesiology*. 2016;66(3);259–64.