

UNINTENDED EFFECTS OF THE EPIDURAL ANALGESIA ON MATERNAL OUTCOME –A PROSPECTIVE STUDY

Sujisha Surendran¹, Roshni PR^{1*} and Nitu PV²

¹Amrita School of pharmacy, AIMS Health care campus, Amrita ViswaVidyapeetham University, Cochin, India.

²Department of Anesthesiology, AIMS, Cochin, India.

ABSTRACT

Epidural analgesia provides a reliable and excellent analgesia during child birth without resulting in concomitant maternal or fetal central depression seen with systemic opioids. Epidural analgesia is used by more than half of laboring women, yet there is no consensus about what unintended effects it causes. To evaluate the unintended effects of epidural analgesia (ropivacaine) on maternal outcome. There were no significant differences between groups in demographic details or other key characteristics. Majority of them are primiparous. There were significant differences in the duration of labor stages. Second stage of labor prolonged to more than one hour in most patients. Unintended effects of epidural analgesia occurred and symptomatically managed during delivery.

Keywords: Epidural analgesia, maternal, labor, unintended effect.

INTRODUCTION

Nowadays, epidural analgesia is the widely used technique for pain relief during labor. The epidural analgesia administered only if the patient has requested for pain relief and the establishment of active labor stage.¹ As the availability and acceptance of epidural analgesia increased, it is important that the physicians managing labor have a clear understanding about the benefits, risks and contraindications of epidural analgesia.^{2,3} Epidural analgesia provides a reliable and excellent analgesia during child birth without resulting in concomitant maternal or fetal central depression seen with systemic opioids.⁴ In most centers, a combination of local anesthetic and opioid is administered via the epidural catheter. This method improves pain control, uses a smaller dose of either drug, and therefore has fewer side effects.⁵ The common unintended effect experienced by the patients using epidural analgesia during labor includes more use of instruments to assist with the birth, increased risk of Caesarean section for fetal

distress, longer delivery (second stage of labor), increased need for oxytocin to stimulate uterine contractions, increased risk of very low blood pressure, increased risk of maternal fever.⁶⁻

⁸Epidural analgesia is used by more than half of laboring women, yet there is no consensus about what unintended effects it causes. Moreover the epidural is contraindicated on patient refusal, active maternal hemorrhage, infection at or near needle insertion site, maternal coagulopathy (inherited or acquired).⁹⁻

¹¹The choice of drugs used in epidural analgesia and the protocol regarding the care of women using epidural analgesia also vary between hospitals. The present prospective study on 'the unintended effects of epidural analgesia on maternal outcome', carried out at department of obstetrics and gynecology, in AIMS Cochin, Kerala. Here the drug used for pain relief in epidural analgesia is 15 mL bolus 0.1% epidural ropivacaine along with 20µ fentanyl. Through this study helps to identify and reduce the risks on maternal using epidural analgesia during

labor thereby providing better pharmaceutical care.

MATERIALS AND METHODS

Study design: Prospective observational study to evaluate the unintended effects of epidural analgesia on maternal outcome based on the duration of labor and mode of delivery. Epidural analgesia was provided with 15 mL bolus of 0.1% epidural ropivacaine along with 20µ fentanyl.

Study site: The study was carried out at Amrita institute of medical science and research centre, Kochi for data collection.

Study setting: The study was conducted at Department of Obstetrics and Gynecology in AIMS, Kochi.

Source of data: All necessary and relevant data's were collected from the medical report department (MRD).

Collection of data: Using data collection forms (patient profile form it included patient demography, medication information, etc.).

Duration of the study: Six months (1st November -1st April).

Inclusion criteria: Patient requested for pain relief (epidural analgesia) during labor.

Statistical data analysis: For statistical analysis used Microsoft Excel/Windows 2009.

RESULTS

In this study around 100 patients received epidural analgesia during labor. The maternal demographic characteristics shown in table 1. The average mean of age distribution is 25.54. In 100 patients 63% falling in the primiparous that is first pregnancy. 66% of the patients requested for pain relief are graduates and 10% were illiterate.

Table 2, shows the duration of first and second stages of labor. Since 63% of the patients are primiparous it may increase the duration of labor than multiparous. Here oxytocin acceleration needed in 69% of the patients whose duration of first labor stage less than 8 hours. 15% of patient's duration of first stage labor was found to be less than 8 hours without oxytocin acceleration. First stage labor prolonged to more than 10 hours in 5% of patients. Second stage of labor prolonged to more than one hour in 47% of patients.

Table 3 shows the mode of delivery of patients with epidural analgesia and found that 80% of the patients having normal vaginal delivery, 14% of the patients having instrumental delivery outlet forceps 9% and vacuum assisted delivery

for 6% of patients. Cesarean section done in 5% of patients.

Figure 1 represents the unintended effect of epidural analgesia in maternal. Out of 100 patients 8% of patients experienced hypotension. Fever on 5% of patients and vertigo experienced in 4% of patients whereas 1% and 3% of patients having itching and nausea respectively.

DISCUSSION

Pain relief during labor is an important issue for women. The type of the pain relief used in the labor may impact on the maternal outcome. The choice of drugs in the epidural analgesia and the dosage varies from institution to institution. The present study observed that the out of 100 patients, 66% of them were graduates and aware about the painless labor, hence chosen epidural analgesia. 69% of the patients duration of first stage of labor within 8 hours, but oxytocin acceleration needed. A woman laboring with an epidural therefore misses out on the final powerful contractions of labor and must use her own effort, often against gravity, to compensate for this loss. This explains the increased length of the second stage of labor and the increased need for forceps when an epidural analgesia is used. In this study, epidural analgesia lengthens the second stage labor more than 1 hour in 47% patients. 5% of the patients had cesarean section because of the maternal indication (failed instrumental delivery) whereas 80% of patients having normal vaginal delivery. Hypotension is the common unintended effect found in this study. 8% of the patient's blood pressure became lower than the normal and that should be treated with drugs like ephedrine. 5% of patients suffered from fever and managed antipyretics. Vertigo and nausea found in 4% and 3% of patients respectively and treated with IV fluids. 1% shows itching and symptomatically treated.

CONCLUSION

In this prospective meta analysis study we have evaluated the effect of epidural analgesia with ropivacaine, on maternal outcome during labor. The increased availability of epidural analgesia nowadays reshaped the expectations of pregnant women entering labor. The contemporary goal of providing maternal epidural labor analgesia is the relief of suffering and the pain of labor and delivery while minimizing the effects on maternal safety, awareness, motor function, progress of labor and maternal well

being. The risks and benefits of epidural analgesia as well as other options of pain control, should be objectively presented to each woman well before the onset of labor. Therefore a patient counseling should be given to each woman during pregnancy period to help them prepare for stresses that may occur during labor, make them aware about the epidural analgesia, meticulous technique during epidural catheter placement and appropriate dosing of medication minimize the risk of serious complications from epidural analgesia.

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Table 1: Maternal demographics characteristics

Factors	Epidural group (n=100)
Age(years)	25.54*
Height (cms)	156.9*
Weight (kg)	70.7*
Gestational age(weeks)	37.42*
Parity	
Primiparous	63%
Multiparous	37%
Educational status	
Illiterate	10%
School level	24%
Graduates	66%

*Values are given as mean

Table 2: Duration of first and second stages of labor

Duration of first stage of labor		
	Epidural group (n=100)	Percentage (%)
<8 hours without oxytocin acceleration	15	15%
<8 hours with oxytocin acceleration	69	69%
>8 hours with oxytocin acceleration	11	11%
>10 hour	5	5%
Duration of second stage of labor		
<1 hour	53	53%
>1 hour	47	47%

Table 3: Mode of delivery

	Epidural group (n=100)	Percentage (%)
Outlet Forceps	9	9%
Vacuum assisted	6	6%
LSCS	5	5%

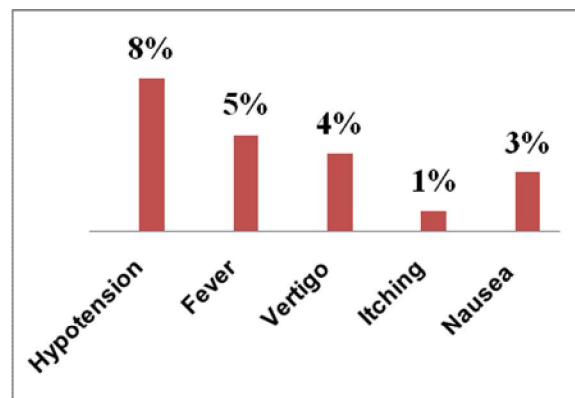


Fig. 1: Unintended effects of epidural analgesia

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