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Original research article

Comparative study of epidural labour analgesia and programmed labour analgesia

[1]Dr. Bhanuprakash S, [2]Dr. Rashmi L

[1]Associate Professor in Anaesthesiology, SSPM Medical College and Life Time Hospital, Sindhudurg, Maharashtra, India

[2]Associate Professor in Obstetrics and Gynecology, SSPM Medical College and Life Time Hospital, Sindhudurg, Maharashtra, India

Corresponding Author

Dr. Rashmi L

Abstract

The mother and her newborn child both benefit from the mother receiving pain medication during labour and delivery. For this reason, all pregnant women ought to have the opportunity to receive labour analgesia. The severity and length of the pain and suffering associated with labour can be affected by a wide variety of physiological and psychological factors. In the current study, we examined the effects of epidural labour analgesia and planned labour analgesia on ambulation and the need for interventions in labouring women who were treated at our tertiary hospital.

Keywords: Comparative, epidural, labour, analgesia, programmed labour analgesia

Introduction

From the usage of ether in the 18th century to the practise of various regional approaches in the present day, labour analgesia has come a long way. Pain management in parturients has been rethought and improved as a result, thanks to the development of a wide range of regional approaches, non-pharmacological therapies, and systemic analgesia [1]. The mother and her newborn child both benefit from the mother receiving pain treatment during pregnancy. For this reason, all pregnant women ought to have the opportunity to receive labour analgesia. The severity and length of the pain and suffering associated with labour can be affected by a wide variety of physiological and psychological factors [2]. The condition of the cervix at the beginning of labour as well as the relationship between the size and position of the foetus and the size of the birth channel are examples of physical factors. Other physical factors include the maternal age group, the number of previous pregnancies and the condition of the mother [3]. Patients, anesthesiologists, and obstetricians continue to have important conversations about the effects of analgesia on both the mother and the developing baby during labour. The goal should be to provide pain relief without jeopardising the safety of the mother, the progression of labour, or the wellness of the foetus. In labour, epidural blocking is a strategy that gets very close to being the optimum analgesic method. It offers continuous analgesia for an undetermined amount of time and has the capability of converting analgesia into anaesthesia in the event that an operational intervention is required. These days, lower dosages of local anaesthetics mixed with opioids can provide a form of analgesia known as "walking epidural" that is effective in relieving pain while having minimal effects on motor function [4]. The pain relief is seen sooner and continues for a longer period of time than with either medicine taken separately. It makes it possible to employ both medications at lower concentrations, which in turn reduces the danger of both systemic toxicity caused by the local anaesthetic as well as adverse effects caused by the opioids [5]. The painless delivery procedure known as programmed labour is one that is easy, uncomplicated, and effective. In the procedure known as planned labour, a combination of painkillers is administered to the labouring patient [6]. The provision of pain relief through the use of analgesics and antispasmodics, the ensuring of enough uterine contractions, and the monitoring of labour events are the fundamental principles of programmed labour [6, 7, 8]. In the current study, we examined epidural labour analgesia and planned labour analgesia in regard to influence on ambulation and interventions required in labouring women at our tertiary hospital. Specifically, we looked at how these two types of labour analgesia affected ambulation.

Aims and Objectives: To compare epidural labour analgesia and programmed labour analgesia.

Materials and Methods

Patients were only considered for enrollment once they had reached an active stage of labour (cervical dilation of more than 4 cm). A computer-based block randomization method was used to divide eighty

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pregnant female participants into two groups. Both groups met the inclusion criteria.

- Women who are or have recently been pregnant 18-40 years old, full-term pregnancy with a singleton, vertex presentation, with either spontaneous or induced labour. ASA1 and ASA2 with an uncomplicated pregnancy, a reactive NST and a request for labour analgesia for pain relief.
- Not having any contraindications to receiving epidural analgesia.

Criteria for exclusion include: A sensitivity to the medications being studied.

- Disorders that cause excessive bleeding and low platelet levels.
- Spinal column defects, spine surgery.
- Malpresentation, cephalopelvic disproportion, a previous lower segment caesarean section and placenta previa, as well as other medical conditions that can complicate pregnancy; delivery within two hours after labour analgesia.
- Refusing to take part in the activity.

Epidural ropivacaine and fentanyl were administered to group 1 of the trial to provide them with pain relief. whereas group 2 received scheduled labour analgesia, which consisted of injectable pentazocine 6 mg intravenously, injectable diazepam 2 mg intravenously, and injectable tramadol 1-1.5 mg/kg intramuscularly, followed by a dose of injectable rotaverine 40 mg intravenously (maximum of three doses). Throughout the entirety of the labour, partographic monitoring of the foetal heart rate was performed. On the basis of a visual analogue scale (VAS) with a range from 0 to 10, with 0 representing the absence of any pain and 10 being the maximum amount of pain that might be experienced, parturient females were evaluated. The APGAR score was taken at one and five minutes after birth by a neonatologist as part of the newborn exam.

The effect on ambulation, also known as EOA, was classified as having either:

1. No effect-the individual was able to walk normally or ambulate.
2. A mild reaction, characterised by a tingling or numbness in the legs, but without any impact on the individual's ability to walk or ambulate.
3. A severe result is that the individual is unable to walk or ambulate.

In order to obtain the information about patients from her hospital records, a pre-designed structured proforma was utilised. The same proforma was used to record a variety of independent (age, study group, medicines, dosing, baseline vitals, etc.) and dependent variables (Vitals, VAS, Ambulation, APGAR, Side effects, etc.) for the purpose of doing further analysis. The information obtained from the patients' medical records was placed into a sheet created in Microsoft Excel so that it could be processed and analysed further. In terms of frequencies, proportions and 95% confidence intervals, qualitative variables were expressed. Statistical tests, including the student t test and the chi square test, were used to analyse the results; a p value of less than. 05 was regarded as significant, while a p value of less than.001 was regarded as very significant. The results of the study were analysed using statistical tests (the student t test and the chi square test) and a p value of less than. 05 was regarded to be significant, while a p value of less than. 001 was considered to be very significant. The data from the study were entered in the record chart.

Results

Table 1: Characteristics

Characteristics	G 1 (Mean ± SD)	G 2(Mean ± SD)	P value
Mean age (years)	23.27 ± 3.57	24.17 ± 2.58	.1
Parity			
Primiparous	57%	53%	.6
Multiparous	43%	47%	
Period of Gestation (weeks)	37.42 ± 0.08	38.69 ± 2.4	.3
Cervical dilatation (cm)	4.9	5.02	.8
Duration of labour (min)	282	296	.3
Mode of delivery			
Normal vaginal delivery	95%	98%	
Caesarean section	5%	2%	
APGAR score			
1	7.5	7.5	>.99
5	8.5	8.7	.2
Effect on ambulation			
No effect	98%	98%	
Mild effect	2%	2%	
Severe effect	--	--	
Side effects	--	--	

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No side effects	90%	75%	
Pruritus	5%	0	
Hypotension	2.5%	0	
Nausea/vomiting	2.5%	10%	
Drowsiness	0	10%	

Discussion

A programmed labour with an indigenous protocol created by *et al*. [9], where spontaneous vaginal birth happened in 95% of the parturients and 2.5% of the parturients each underwent forceps and caesarean delivery while being given 0.2% ropivacaine in epidural. According to a Cochrane research that compared women who had epidural or systemic analgesia for labour pain, there was no significant difference in the rate of women who delivered their babies via Caesarean section [10]. When modest doses of local anaesthesia with or without opioids were employed, Patkar *et al*. [11] and Agarwal *et al*. [12] made the observation that the incidence of instrumental delivery is not related to epidural analgesia or its route of administration or its time of beginning, respectively. This was the finding of both of these groups of researchers. According to this study's findings, both not doing anything and doing it can result in labour that is more manageable, lasting less time, and causing less blood loss. In the current study, we found that epidural labour analgesia resulted in superior pain relief than planned labour analgesia did. This was the case when comparing the two types of labour analgesia. Parturients in the scheduled labour group did not exhibit any deleterious effect on maternal haemodynamics, in contrast to the parturients who received epidural analgesia, which has a little impact on mother haemodynamics. The duration of labour in the group that received an epidural was marginally shorter than the duration of labour in the group who received planned labour, but there was no significant difference between the two groups. The duration of labour is not affected by either the use of an epidural or planned labour. There was no influence on ambulation in either group as determined by administering an assisted trial walk; there was also no negative effect on the newborn APGAR score at 1 minute and 5 minutes and there was no significant effect on the mode of delivery in either group.

Conclusion

Pain reduction during childbirth can be achieved more effectively with the use of epidural labour analgesia as opposed to planned labour analgesia. Within the context of scheduled labour, satisfactory pain relief was not attained, and the duration of analgesia was restricted to a shorter period. It was determined by administering an assisted trial walk that there was no difference in ambulation between the two groups. In none of the groups did we find any evidence of a statistically significant effect on the manner of delivery or the total duration of labour.

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