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Research Article

**A STUDY ON THE IMPACT OF ANESTHESIA IN CESAREAN
SECTION**¹Dr Ayesha Keren, ²Dr Hamayun Akhtar, ²Dr Ansar Ali Khan¹Hebei North University China, ²Independent Medical College Faisalabad.

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Abstract:

Objective: The utilization of spinal anesthesia (SA) or epidural anesthesia (EA) carried out in the conduction of cesarean section under regional anesthesia. The pregnant females who faced caesarean section of delivery in our institute retroactively assessed to confirm & give a comparison of virtues and disadvantages of SA & EA for the determination of most proper method.

Methodology: Pregnant females fulfilling the system of classification for physical condition of ASA (American society of anesthesiologists) 1 or 2 who faced cesarean surgery at our institute surveyed retroactively. One hundred patients in each group receiving SA & EA were the part of this research work. The duration from anesthesia to surgical opening known as time for A to S, total time of anesthesia, and utilization of vasopressor & midazolam compared in accordance with the approach of anesthesia.

Results: The time of anesthesia to surgical incision & total duration of anesthesia of pregnant females who underwent SA were very short in comparison with the group of pregnant females who underwent EA and utilization of vasopressor was very common in the group of SA because of high decline in their blood pressure.

Conclusion: The anesthesia to surgical incision time & total duration of anesthesia were high for EA than for SA. But, hemodynamic alteration was less & vasopressor was hardly in use for the former pregnant females group. So, the selection of the clinical method will rely on medical, anesthetic & obstetric condition.

Keywords: Anesthesia, Surgical, Incision, Obstetric, Cardiovascular, Pulmonary, Caesarean, Pregnancy, Vasopressor.

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INTRODUCTION:

A survey conducted in 2001 for obstetric anesthesia in USA discovered that majority of patients undergoing caesarean surgery have under SA or EA [1]. The regional anesthesia in comparison with the general anesthesia decreases the danger of pulmonary aspiration & abnormalities of airway arising because of intubation failure [2]. EA has the ability to induct anesthesia without resulting an immediate cardiovascular alteration in case of hemodynamic variability whereas SA is very easy & fast than EA and it also allows a decrease of induction time of anesthesia [3]. But there is still requirement to evaluate the relative effectiveness & side effects of regional anesthesia in pregnant females who are undergoing cesarean surgery because anesthesia for this surgery is not ideal one.

The selection of anesthesia method relies on the maternal and fetal condition, the preference of pregnant females & anesthesiologist & surgery indications [2]. In current research work, the confirmation & comparison of advantages and disadvantages of SA & EA carried out for the identification of very effective method regarding decrease in the time of surgery & hemodynamic solidity.

METHODOLOGY:

This research work was conducted in Allied Hospital Faisalabad. The pregnant females fulfilling the ASA physical condition system of classification (ASA) 1 or 2, who were undergoing cesarean section in normal or emergency conditions were the part of this research work. There were one hundred pregnant females in every group undergoing SA or EA were the subjects. The survey of relevant data carried out retroactively hence no power measurement carried out. The patients fulfilling the ASA 3 or 4 classification or pregnant females who underwent general anesthesia were not the part of this research work. We did not give any medicine to any patients before start of procedure. For monitoring in the operation duration, electrocardiograph, noninvasive measurement of BP and oximetry of the pulse were the part. We applied oxygen at five L/min with help of mask.

Before application of anesthesia, administration of patients carried out with 400 to 500 milliliter of solution of lactated Ringer. EA performed with the addition of fentanyl (one hundred mcg) to 0.750% levobupivacaine (fifteen to twenty milliliter), through technique of loss of resistance to air. Anesthetic managed between 3rd and 4th lumbar vertebrae, utilizing a Tuohy needle of eighteen gauge & a twenty-gauge catheter, while application conducted in the sitting position of patient. The application of SA carried out utilizing 26-gauge needle & consisted addition of 0.50% bupivacaine (ten to twelve milligram) & fentanyl (ten to twenty mcg) to the same space inside vertebrae.

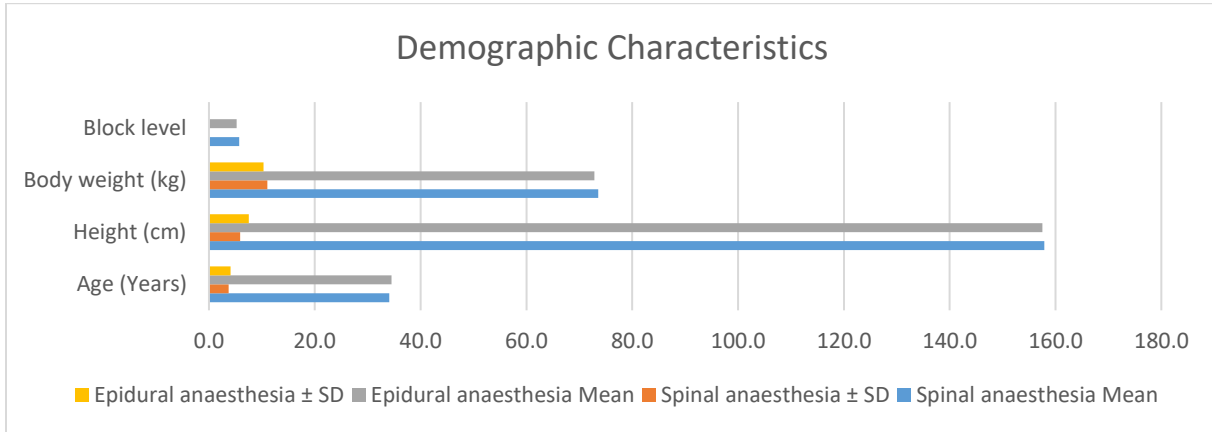
We surveyed the age, pregnancy duration, weight, height & status of ASA of selected pregnant females and we monitored whether systolic BP declined greater than 20.0% in comparison with the baseline. The comparison of total duration of anesthesia, A to S time, utilization of ephedrine & midazolam utilization compared in accordance with the used approach of anesthesia. Apgar score of new born child, pain score by VAS after one day of surgery & PDPH's (Post Dural Puncture Headache) comparison carried out. The utilizations of drug, total time of anesthesia, age of regnant female, her weight, height, Apgar score & pain score from visual analogue scale were available with average and standard deviation values. Statistical analysis of this collected information carried out with the help of SPSS V. 12. T test was in use for the comparison of pregnant females of both groups. The examination of the frequency carried out with the help of chi-square method.

RESULTS:

We found no disparity in the height, weight & age of pregnant females of both groups and there was no disparity level of sensory block & status of ASA (Table-1). But there was an important difference in the anesthesia to surgical incision time, total duration of anesthesia & level of utilization of the ephedrine/phenylephrine between the pregnant females of both groups. Both time of anesthesia to surgical incision & anesthesia duration were short in the group of SA as compared to the group of EA.

Table I: Demographic Data of Patients.

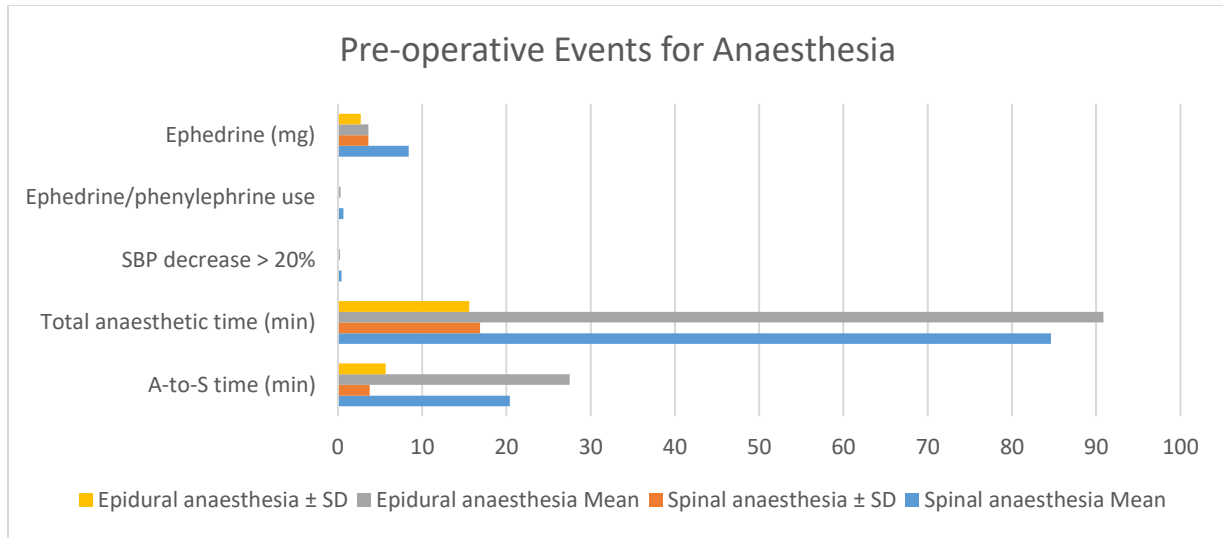
Characteristics	Spinal Anesthesia		Epidural Anesthesia		p-value
	Mean	± SD	Mean	± SD	
Age (Years)	34.1	3.75	34.5	4.10	0.690
Height (cm)	157.9	5.87	157.6	7.56	0.550
Body weight (kg)	73.6	11.05	72.9	10.31	0.780
ASA (I/II)	83/17	-	90/10	-	0.700
Block level	5.7	-	5.2	-	0.320



But systolic BP reduced greatly & utilization was vasopressor was much common in SA in comparison to the EA group (Table-2).

Table II: Perioperative Events for Different Anesthesia Approaches

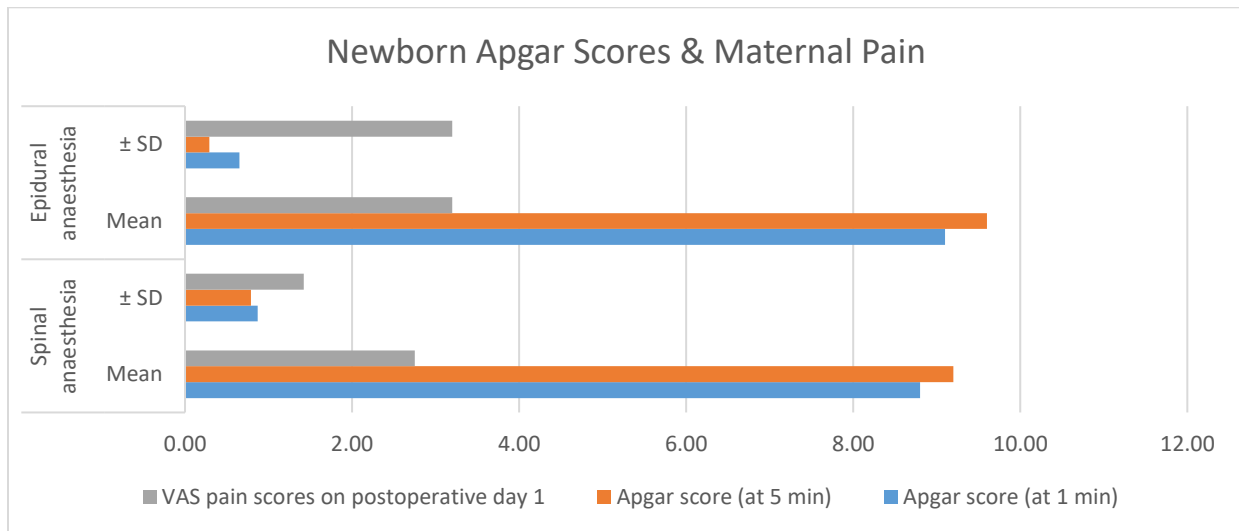
Pre-operative Events	Spinal Anesthesia		Epidural Anesthesia	
	Mean	± SD	Mean	± SD
A-to-S time (min)	20.41	3.77	27.5	5.67
Total anesthetic time (min)	84.63	16.87	90.87	15.58
SBP decrease > 20%	40.80%	-	23.50%	-
Ephedrine/phenylephrine use	65.80%	-	30.76%	-
Ephedrine (mg)	8.4	3.6	3.6	2.7



We found no important disparity between the pregnant females of both groups regarding 1 minute of 5minute Apgar score of new birth, visual analogue scale score of pain at one day after the cesarean section & degree of PDPH (Table-3).

Table III: Newborn Apgar Scores and Maternal Pain Scores after Caesarean Section

Apgar Scores	Spinal Anesthesia		Epidural Anesthesia	
	Mean	\pm SD	Mean	\pm SD
Apgar score (at 1 min)	8.80	0.870	9.10	0.650
Apgar score (at 5 min)	9.20	0.790	9.60	0.290
VAS pain scores on postoperative day 1	2.75	1.420	3.20	3.200



DISCUSSION:

Anesthesia in the duration of cesarean surgery has the ability to eradicate pain & displays some side effects in both mother and newborn. So, in obstetrics, ideal condition is that there should be a very short time for anesthesia to minimize the hemodynamic alterations

to maintain the flow of blood through uterus. The rate of maternal mortality under general anesthesia is sixteen times high as compared to regional anesthesia [4]. There is always a preference to regional anesthesia over general anesthesia for the pregnant females underwent cesarean surgery [5]. In general, SA allows

a rapid anesthesia induction & it increases the rate of turnover in theatre in comparison with the EA [6].

There is belief of surgeons to take out the infant as soon as possible, various hospital manage SA even insertion of an epidural catheter can lead to delivery through vagina without pain [7]. The duration for the beginning anesthesia to the initiation of surgery & total duration of anesthesia was smaller with the SA which is one of its merit. But, the systolic BP more often reduced greater than 20.0% in comparison with baseline after this anesthesia type, so the rate of utilization and vasopressor amount, like ephedrine/phenylephrine utilization were higher in SA. In a research work of past, anesthesia level increased rapidly with SA and insufficiency of respiration or oblivion occurred, such that even complete SA & change into general anesthesia with intubation carried out [8]. The occurrence of complications as blockage of high level can be reduce with the re volume of utilized spinal anesthetic [9].

In accordance with a recent research work, the failure possibility was very high for combined anesthesia as compared to SA alone, the probability of changing into general anesthesia after EA failure was 5.0%, re-attempting was present in 7.740%, and the need for more sedatives in the duration of surgery was 10.740% [10].

In this research work, there was not much difference among the pregnant females of both groups regarding the condition of the born child & amount of pain faced by female after the completion of surgery. Keeping in view these results, there is suggestion that while there should be utilization of general anesthesia when fetal condition is worsening rapidly, the utilization of SA should be in action for relative urgent cases. There should be utilization of the EA with watchful checking of hemodynamic alterations in those patients where there is a stable condition of mother as well as fetal.

CONCLUSION:

The duration from anesthesia to surgical incision and total duration of anesthesia was much high in EA as compared to the group of SA. But hemodynamic alterations were very short & vasopressor utilization was minimum in 2 groups. Additionally, the Apgar score of new birth was same in 2 group, so, the anesthesia type utilized had no impact on the neonate. The selection of anesthesia method utilized will be depending upon the obstetric, medical & anesthetic condition for every patient.

REFERENCES:

1. Hawkins JL, Koonin LM, Palmer SK, Gibbs CP. Anesthesia related deaths during obstetric delivery in the United States, 1979-1990. *Anesthesiology*. 1997; 86:277-284. doi: 10.1097/0000542-199702000-00002
2. Birnbach DJ, Browne IM. BI. Anesthesia for obstetrics, 'Miller's Anesthesia' (seventh edition), Miller RD, Eriksson LI, Fleisher LA, Wiener-kronish JP, & Young WL (Eds), Churchill living stone, Edinburg, United States of America. 2009; pp 2203-2210.
3. Riley ET, Cohen SE, Macario A, Desai JB, Ratner EF. Spinal versus epidural anesthesia for cesarean section: A comparison of time efficiency, costs, charges, and complications. *Anesth Analg*. 1995; 80:709-712. doi:10.1213/0000539-199504000-00010
4. Bauer ME, Kountanis JA, Tsen LC, Greenfield ML, Mhyre JM. Risk factors for failed conversion of labor epidural analgesia to cesarean delivery anesthesia: a systematic review and meta-analysis of observational trials. *Int J Obstet Anesth*. doi: 2012; 21:294-309. 10.1016/j.ijoa.2012.05.007
5. Huang CH, Hsieh YJ, Wei KH, Sun WZ, Tsao SL. A comparison of spinal and epidural anesthesia for Bucklin BA, Hawkins JL, Anderson JR, Ullrich FA. Obstetric anesthesia workforce survey: twenty-year update. *Anesthesiology*. 2005;103(3):645-653. doi: 10.1097/0000542-200509000-00030.
6. cesarean section following epidural labor analgesia: A retrospective cohort study. *Acta Anesthesia Taiwan*. 2015;53(1):7-11. doi: 10.1016/j.aat.2015.01.003
7. Ng K, Parsons J, Cyna AM, Middleton P. Spinal versus epidural anesthesia for caesarean section. *Cochrane Database Syst Rev*. 2004;(2) CD003765. doi: 10.1002/14651858.CD003765.pub2.
8. Morgan GE Jr, Mikhail MS, Murray MJ. *Clinical Anesthesiology* (fourth edition), McGraw-Hill Companies, United States of America. 2006; pp 901-906.
9. Beck GN, Griffiths AG. Failed extradural anesthesia for caesarean section. Complication of subsequent spinal block. *Anesthesia*. 1992; 47:690-692. doi: 10.1111/j.1365- 2044.1992.tb02393.x
10. Crow Hurst JA, Birnbach DJ. Small-dose neuraxial block: heading toward the new millennium. *Anesth Analg*. 2000; 90:241-242. doi:10.1097/0000539-200002000-00002.