

A Study between Lumbar Epidural and Spinal Anesthesia in Elective Caesarean Section in Rural Women in Bangladesh

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ABSTRACT

Objective: Present study was conducted to evaluate effectiveness of lumbar epidural and spinal anaesthesia in elective caesarean section.

Methods: This experimental study is conducted at tertiary medical college hospital, Gopalgong. Written informed consent from 100 patients were obtained for this experimental study. Purposive sampling technique was used.

Results: During the study, where in group-A 52.02% women were in their first pregnancy followed by 28.28% were 2nd pregnancy, 19.7% were multi gravid women. where in group-A, 35% had hypotension where as in group-B it was 11%. group-A, 30% patients were Highly satisfied where as in group-B it was 65%. The patients selected for the study was divided into two groups: Group – I (Spinal): 50 Patients selected, Group – II (Epidural): 50 patients selected.

Conclusion: From our result and study we can conclude that, continuous epidural technique which allowed mother early

breastfeeding and ambulation. Further studies are needed for better outcome.

Keywords: Lumbar Epidural Anaesthesia, Spinal Anaesthesia, Cesarean Section (CS).

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INTRODUCTION

A Caesarean Section (CS) is usually performed when a vaginal delivery would put the baby's or mother's life at risk. But in recent times it is also performed upon request of mother. In case of an elective CS, there is enough time to evaluate the mother and to determine the type of anesthesia. Regional anesthesia has the advantage over general anaesthesia by allowing mother to remain awake during delivery.¹ Postoperative pain is also better managed with regional anesthesia. Moreover, in regional anesthesia, the patients are able to share the experience of delivery, which may enhance parents baby bonding. Beside this, anesthesia related maternal mortality is also decreased when CS is done under regional anesthesia.^{2,3}

But regional anesthesia is not without side effect. Potential adverse effects common to both spinal and epidural anesthetic techniques include: failure to provide adequate anesthesia, maternal hypotension, post dural puncture headache (PDPH), nerve and vascular injury and backache and infection over the injection site etc.^{4,5} Though both spinal and epidural techniques

are the popular regional anesthesia for CS; but the acceptability differs in different regions of the world in different time.

In this study our main goal is to evaluate effectiveness of lumbar epidural and spinal anesthesia in elective caesarean section.

OBJECTIVE

General Objective

To evaluate effectiveness of lumbar epidural and spinal anesthesia in elective caesarean section.

Specific Objective

- To identify baseline values of mean BP and Heart rate.
- To detect intra operative events between two groups

METHODOLOGY

Type of Study: Experimental study

Place of Study: Tertiary Medical College and Hospital, Gopalgong

Study Population: Written informed consent from 100 patients were obtained for this experimental study.

Sampling Technique: Purposive

Method: During the study, after taking consent from the patients, The patients had the normal history of single pregnancy and an ASA physical status I & II. Pre-anaesthetic assessments were done on the day before surgery. The patients with suspected or manifest bleeding disturbances, gross abnormality in vertebral column, infection in the back, presence of liver and kidney diseases, patient taking anticoagulant and patient with pregnancy induced hypertension (PIH) or preeclampsia were excluded from the study. The patients selected for the study was divided into two groups: Group – I (Spinal): 50 Patients selected, Group – II (Epidural): 50 patients selected.

Data Analysis: After collection, data were entered into a personal computer and were edited, analyzed, plotted in graphs and tables. Data were analyzed by chi square test, Mann Whitney U tests, using the SPSS version 20.

RESULTS

In table-1 shows age distribution of the patients where most of the patients in both group belong to 21-50 years age.

In table-2 shows educational status of the patients where in group-A, only 2% patients were completed their graduation where in group-B 5%.

In table-3 shows parity distribution of the study group, where in group-A 52.02% women were in their first pregnancy followed by 28.28% were 2nd pregnancy, 19.7% were multi gravid women.

In figure-1 shows residential area of the patients where 90% patients were from rural.

In table-4 shows the baseline values of mean BP and Heart rate where there is no significant difference between the two groups.

In figure-2 shows comparison of intra operative events between two groups where in group-A, 35% had hypotension where as in group-B it was 11%.

In table-5 shows Level of maternal satisfaction where in group-A, 30% patients were highly satisfied where as in group-B it was 65%.

In figure-3 shows post-operative interview of the mothers where 70% patients were complain of pain in the first night where as in group-B it was 5%.

Table 1: Age distribution of the patients

| Age group | Group-A, % | Group-B, % |
|-----------|------------|------------|
| 21-30 | 35% | 30% |
| 31-40 | 55% | 65% |
| 41-50 | 10% | 5% |

Table 2: Distribution of the patients according to educational status of the patients

| Education of patients | Group-A, % | Group-B, % |
|-----------------------|------------|------------|
| Illiterate | 20% | 25% |
| Primary | 9% | 12% |
| Secondary | 23% | 15% |
| Higher-secondary | 41% | 10% |
| Graduation or more | 2% | 5% |

Table 3: Parity distribution of the pregnant women

| Parity | Group-A, % | Group-B, % |
|---------------------------|------------|------------|
| Primi graida | 52.02% | 50% |
| 2 nd pregnancy | 28.28% | 30% |
| Multi graida | 19.70% | 20% |

Table 4: The baseline values of mean BP and Heart rate.

| Variable | Group-A, % | Group-B, % |
|----------------------|--------------|-------------|
| SBP in mm of Hg | 117.58±12.08 | 119.30±1195 |
| DBP in mm of Hg | 77.56±9.63 | 78.24±9.21 |
| MAP in mm of Hg | 92.5± 6.47 | 93.7 ± 5.30 |
| HR in beats per min. | 80.3± 7.29 | 82.45±6.25 |

Table 5: Level of maternal satisfaction

| Variable | Group-A, % | Group-B, % |
|------------------|------------|------------|
| Highly satisfied | 30% | 65% |
| Fairly satisfied | 50% | 25% |
| Not satisfied | 20% | 10% |

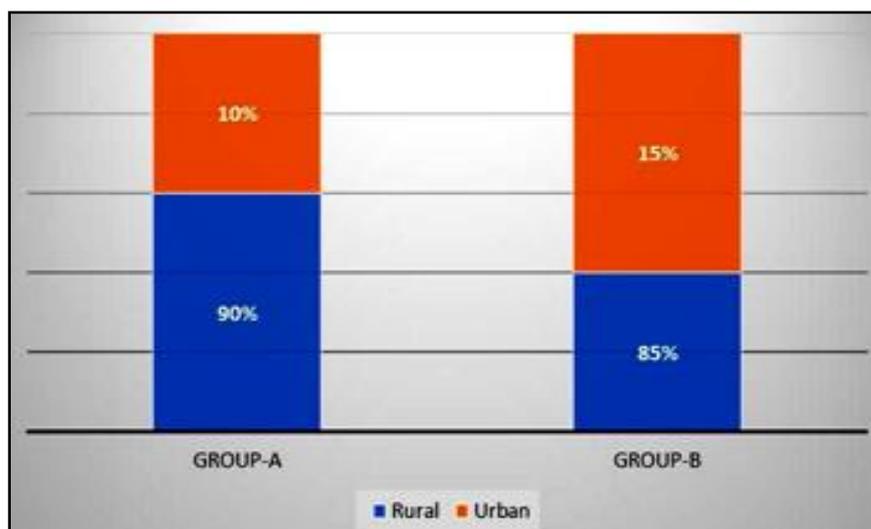


Figure 1: Residential area of the patients.

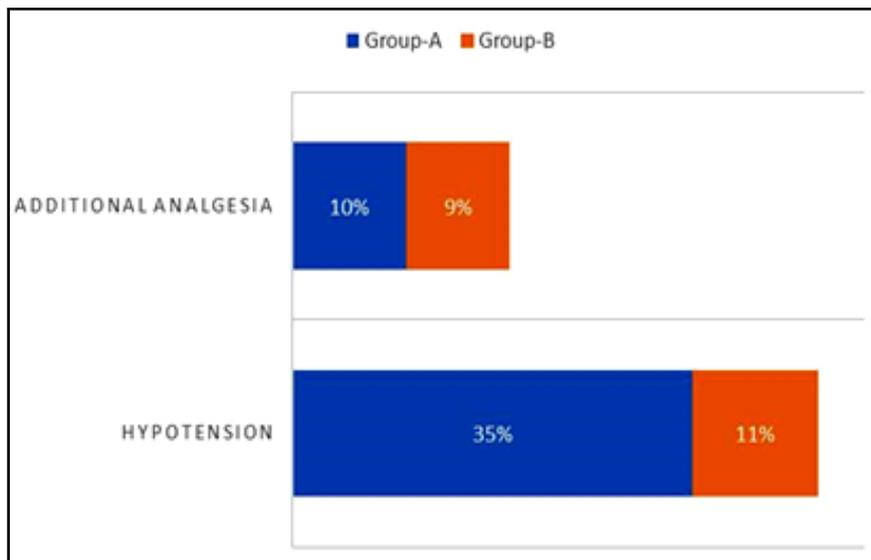


Figure 2: Comparison of intra operative events between two groups.

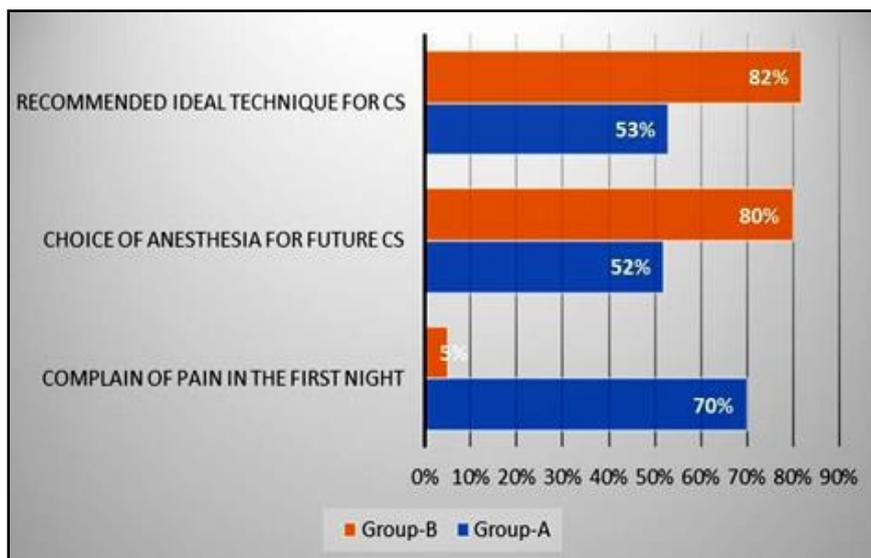


Figure 3: Post-operative interview of the mothers.

DISCUSSION

The regional anesthetic techniques are widely accepted for elective cesarean section. In the study we tried to find out an ideal regional technique considering better outcome of mother. The parameters taken into account to compare the two techniques are hemodynamic stability, need for additional analgesics, maternal comfort, postoperative pain management, and overall maternal satisfaction. The present and previous experiences of mothers were also compared.

Recommendation of the mothers about anesthetic technique for CS has also been taken into account. Regional anesthesia results in less neonatal exposure to drugs.^{6,7} But with Spinal technique the potential for hypotension possess the greatest threat to the mother and fetus.⁷

Although the incidence of hypotension is not frequent in epidural technique but it occurs earlier and more rapidly with the spinal approach. Hypotension lowers maternal mean arterial pressure (MAP) and uteroplacental perfusion.⁸

It was found that mothers of epidural group were highly satisfied in comparison to spinal group and the number of mother not satisfied with the anesthetic technique is high in spinal group ($P < 0.01$).

Post-operative pain relief was better maintained by continuous infusion of analgesics through epidural catheter. Whereas, analgesia in the spinal group was maintained with intramuscular opioids or NSAIDs.

In the postoperative interview, a significantly higher number of mothers of epidural group ($P < 0.01$) told that they did not feel pain on the postoperative night. The mothers who were comfortable in the intraoperative period and those who did not feel pain in the post-operative period had chosen the technique for their future cesarean delivery and also recommended the technique as a ideal for elective cesarean section ($P < 0.01$).

CONCLUSION

From our study we can conclude that, continuous epidural technique which allowed mother early breastfeeding and ambulation.

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