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## Original Research

### Comparative Evaluation Of Efficacy Of Spinal And General Anesthesia In Patients Undergoing Emergency Cesarean Section

Hirday Kumar<sup>1</sup> Rakesh Raushan<sup>2</sup> Prakash Singh<sup>1</sup> Amir<sup>3</sup>

<sup>1</sup>Assistant Professor, <sup>2</sup>Associate Professor, <sup>3</sup>Junior Resident, Department Anaesthesia, Narayan Medical college and Hospital, Jamuhar, Sasaram, Bihar

#### ABSTRACT:

**Background:** The type of anaesthesia for caesarean section depends on the indications for the operation, degree of urgency. The present study was conducted to compare spinal and general anesthesia in patients undergoing emergency cesarean section. **Materials & Methods:** The present study was conducted on 84 women underwent cesarean section. Patients were divided into two groups. Group I (spinal anesthesia) had 42 patients and group II (general anesthesia) had 42 patients. In both groups, TS-H (Time from skin incision to hysterotomy), TH-U (Time from hysterotomy to umbilical cord clamping) and post operative pain score was compared. Time to first breast feeding (TBF), oral intake (TOI), flatulence (TF) and defecation (TD) were noted. **Results:** Mean BMI (kg/m<sup>2</sup>) in group I patients was 29.88 and in group II was 29.12, operation time was 40 minutes in group I and 38 minutes in group II, TS-H (Time from skin incision to hysterotomy) was 4 minutes in group I and 5 minutes in group II. TH-U (Time from hysterotomy to umbilical cord clamping) was 56 seconds in group I and 48 seconds in group II. Mean post operative score in group I was 3.4 and in group II was 4.8, TBF (Time to first breast feeding) in group I was 112 minutes and in group II was 134 minutes, TOI (Time to first oral intake) was 115 minutes in group I and 140 minutes in group II, TF (Time to first flatulence) was 21 minutes in group I and 27 minutes in group II, TD (Time to first defecation) was 25 minutes in group I and 33 minutes in group II. The difference was significant (P<0.05). **Conclusion:** Authors found comparatively more operation time, TH-U time in group I. TS-H, mean post operative score, TBF, TOI, TF and TD was lower in group I.

**Key words:** General anesthesia, hysterotomy, Spinal

**Corresponding author:** Dr. Rakesh Raushan<sup>2</sup> Associate Professor, Department Anaesthesia, Narayan Medical college and Hospital, Jamuhar, Sasaram, Bihar

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## INTRODUCTION

The type of anaesthesia for caesarean section depends on the indications for the operation, degree of urgency, desires of the patients and the judgment of the anesthesiologist. Caesarean section may be done under general anaesthesia

or regional anaesthesia; each of the technique having its own merits and demerits.<sup>1</sup> General anaesthesia for caesarean section has of late become obsolete due to various reasons such as risk of failed intubation, aspiration of gastric contents and the requirement of additional depressant agents. On the other hand,

regional anaesthesia has gained popularity in the recent past due to absence or minimal biochemical and metabolic changes. Spinal anaesthesia is commonly used for cesarean section, and it has become a popular practice to add opioids to spinal solutions to enhance and prolong intraoperative and postoperative analgesia. Morphine and fentanyl are the opioids most often used for this purpose, but there is not a general consensus about the benefits of the various regimens, and the incidence of side effects with different opioids and doses is controversial.<sup>3</sup>

Caesarean section is when a baby is born through an incision in the mother's abdomen and uterine wall. This requires effective anaesthesia which can be regional (epidural or spinal) or a general anaesthetic. With regional epidural anaesthesia, the anaesthetic is infused into the space around the mother's spinal column, whilst with regional spinal anaesthesia, the drug is injected as a single dose into the mother's spinal column.<sup>4</sup> The present study was conducted to compare spinal and general anaesthesia in patients undergoing emergency cesarean section.

**MATERIALS & METHODS**

The present study was conducted on the department of Obstetrics & Gynaecology and anaesthesia. It comprised of 84 women underwent cesarean section. The study protocol was approved from institutional ethical committee. Patients were informed regarding the study and written consent was obtained. General information such as name, age, gender etc. was recorded. Patients were divided into two groups. Group I (spinal anaesthesia) had 42 patients and group II (general anaesthesia) had 42 patients. In all patients, noninvasive blood pressure, ECG and SpO2 were monitored and data were recorded prior to anaesthesia induction and thereafter at 3 min intervals. Spinal anaesthesia was performed in sitting position at L3-4 or L4-5 interspinous levels with 25G spinal needle (Quincke tip, Braun). Fentanyl 20 µg combined with hyperbaric bupivacaine 8-10 mg were injected intrathecally to achieve a sensorial block at T4 level. General anaesthesia was induced after preoxygenation with thiopental 5-7 mg/kg, succinylcholine 1 mg/kg. Following orotracheal intubation, patients were ventilated to achieve an ETCO2 of 32-35 mmHg. Anaesthesia was maintained with 1.5% sevoflurane in oxygen.

In both groups, TS-H (Time from skin incision to hysterotomy), TH-U (Time from hysterotomy to umbilical cord clamping) and post operative pain score was compared. Time to first breast feeding (TBF), oral intake (TOI), flatulence (TF) and defecation (TD) were noted. Results were tabulated and subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

Table I shows that each group had 42 patients. Table II shows that mean BMI (kg/m2) in group I patients was 29.88 and in group II was 29.12, operation time was 40 minutes in group I and 38 minutes in group II, TS-H (Time from skin incision to hysterotomy) was 4 minutes in group I and 5 minutes in group II.

TH-U (Time from hysterotomy to umbilical cord clamping) was 56 seconds in group I and 48 seconds in group II. The difference was significant (P< 0.05). Graph I shows that mean post operative score in group I was 3.4 and in group II was 4.8, TBF (Time to first breast feeding) in group I was 112 minutes and in group II was 134 minutes, TOI (Time to first oral intake) was 115 minutes in group I and 410 minutes in group II, TF (Time to first flatulence) was 21 minutes in group I and 27 minutes in group II, TD (Time to first defecation) was 25 minutes in group I and 33 minutes in group II. The difference was significant (P< 0.05).

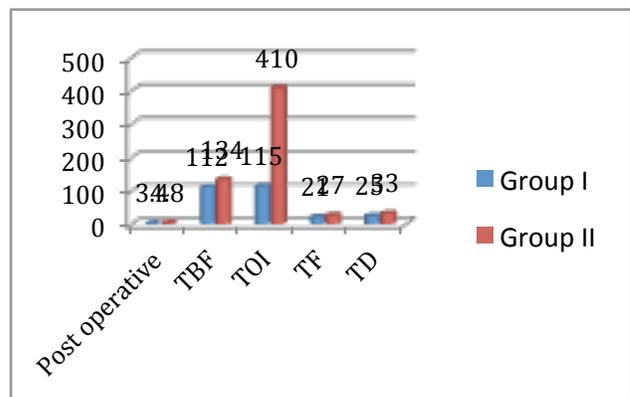
**Table I Distribution of patients**

Groups	Group I	Group II
Type of anaesthesia	Spinal anaesthesia	General anaesthesia
No	42	42

**Table II Parameters in both groups**

Parameters	Group I	Group II	P value
BMI (kg/m2)	29.88	29.12	0.42
Operation duration (min)	40	38	0.31
TS-H (min)	4	5	0.01
TH-U (sec)	56	48	0.02

**Graph I Comparison of other parameters**



## DISCUSSION

Neuraxial anesthesia is the preferred method in cesarean section as general anesthesia is associated with airway related adverse outcome, aspiration risk, intraoperative awareness and increased uterine atony leading to higher blood loss.<sup>5</sup> General anesthesia is performed in cases of contraindication to neuraxial anesthesia, failure of neuraxial technique or patient request for elective cesarean section. The favorable effects of neuraxial anesthesia on newborns has been demonstrated previously, yet there is limited evidence on the effect of anesthetic techniques for maternal outcomes such as length of postoperative hospital stay and return of gastrointestinal functions.<sup>6</sup> With the two types of regional anaesthesia, the mother is awake for the birth but numbed from the waist down. With general anaesthesia, the mother is unconscious for the birth with the anaesthetic affecting her whole body. As well as women having a view as to whether they might wish to be awake or asleep for the cesarean birth, it is important to know the balance of the benefits and adverse effects of these different types of anaesthesia.<sup>7</sup> The present study was conducted to compare spinal and general anesthesia in patients undergoing emergency cesarean section. In present study, group I (spinal anesthesia) had 42 patients and group II (general anesthesia) had 42 patients. We observed that mean BMI (kg/m<sup>2</sup>) in group I patients was 29.88 and in group II was 29.12, operation time was 40 minutes in group I and 38 minutes in group II, TS-H (Time from skin incision to hysterotomy) was 4 minutes in group I and 5 minutes in group II. TH-U (Time from hysterotomy to umbilical cord clamping) was 56 seconds in group I and 48 seconds in group II. Hawkins et al<sup>8</sup> in their study found that spinal anesthesia was associated with longer TS-H and TH-U durations, lower oxytocine requirements, higher incidence of hypotension, increased ephedrine and fluid consumption, and delayed Tanalg. Furthermore, TOI, TF, TD and postoperative hospital stay was shorter in patients given spinal anesthesia when compared with patients given general anesthesia. No difference in postoperative analgesic consumption and neonatal outcomes, except 1<sup>st</sup> min Apgar scores and umbilical blood gas analysis, was detected. We found that mean post operative score in group I was 3.4 and in group II was 4.8, TBF (Time to first breast feeding) in group I was 112 minutes and in group II was 134 minutes, TOI (Time to first oral intake) was 115 minutes in group I and 410 minutes in group II, TF (Time to first flatulence) was 21 minutes in group I and 27 minutes in group II, TD (Time to first defecation) was 25 minutes in group I and 33 minutes in group II. Hodgson et al<sup>9</sup> in their study found that 175 women undergoing elective cesarean section were allocated into two groups; the first group (n=60) received spinal anesthesia, and the second one (n=115) received general anesthesia for elective cesarean section. There were no differences between the two groups in terms of demographics, indication for elective cesarean section, operative time, gestational age, 1 and 5-min Apgar scores, and the means of preoperative and postoperative systolic and diastolic BP. A statistically significant increase was observed in terms of hypotension, postoperative analgesia, pre-induction and intraoperative IV fluids in the spinal group as compared to the general anesthesia group.

## CONCLUSION

Authors found comparatively more operation time, TH-U time in group I. TS-H, mean post operative score, TBF, TOI, TF and TD was lower in group I.

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