

## Assessment of Complications of Spinal Anesthesia in Patients Undergoing C- Section

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### ABSTRACT

**Background:** Spinal anesthesia for caesarean section is advantageous due to simplicity of technique, rapid administration and onset of anesthesia, reduced risk of systemic toxicity and increased density of spinal anesthetic block. The present study was conducted to assess complication of spinal anesthesia in cesarean section.

**Materials & Methods:** The present study was conducted on 104 cesarean sections performed in gynaecology department. Patient's parameters such as heart rate, systolic blood pressure, diastolic blood pressure and respiratory rates were assessed regularly. Intraoperative complications were assessed and recorded.

**Results:** Age group 18- 22 years had 45 patients, 22-26 years had 30 and 26- 30 years had 25 patients. The difference was significant ( $P < 0.05$ ). The most common complication was shivering seen in 32, anesthetic failure in 27, Post-dural puncture headache (PDPH) in 20, hypotension in 16, nausea/vomiting in 14, high spinal block in 12, backache in 5 and loss of consciousness in 4. The difference was significant ( $P < 0.05$ ).

**Conclusion:** Authors found that complications of spinal

anesthesia are not uncommon phenomenon. Common complication was shivering, anesthetic failure, Post-dural puncture headache (PDPH), hypotension, nausea/vomiting, high spinal block, backache and loss of consciousness.

**Keywords:** Complications, Hypotension, Post-Dural Puncture Headache.

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### INTRODUCTION

Anesthetic techniques currently available for caesarean delivery are general and regional anesthesia. Spinal anesthesia for caesarean section is advantageous due to simplicity of technique, rapid administration and onset of anesthesia, reduced risk of systemic toxicity and increased density of spinal anesthetic block. Both spinal and epidural techniques are shown to provide effective anesthesia for caesarean section. Spinal anesthesia has a shorter onset time, but treatment for hypotension is more likely if spinal anesthesia is used.<sup>1</sup>

The preference of regional instead of general anesthesia for obstetric surgery is also strongly recommended in the guidelines published by American Society of Anesthesiologists. However, in the presence of any contraindications or emergency state, general anesthesia are mainly to be the most common choice for many anesthesiologists.<sup>2</sup> General anaesthesia may lead to loss of airway control, with anoxia and aspiration of gastric contents. This risk associated with obstetric general anaesthesia has led to regional techniques being used wherever possible. General

anaesthesia is now used mainly for true emergency cases where there is insufficient time for a regional technique. However; general anaesthesia has the advantage of rapid induction, less hypotension, cardiovascular stability and better control over airways and ventilation.<sup>3</sup> The present study was conducted to assess complication of spinal anesthesia in cesarean section.

### MATERIALS & METHODS

The present study was conducted in the department of Obstetrics & Gynaecology and anesthesia. It comprised of 104 cesarean sections performed in gynaecology department. The exclusion criteria were presence of relative or absolute contraindication for regional anesthesia, patient refusal to participate into the study, first cesarean section earlier than 5 years. 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. Patient's parameters such as heart rate, systolic blood

pressure, diastolic blood pressure and respiratory rates were assessed regularly. Intraoperative complications were assessed and recorded. Minor complications consist of limited, transient alterations in physiological status of the patient. Minor complications include arterial hypotension (autonomic block), nausea and vomiting, excessive cephalad spread leading to respiratory insufficiency, post-lumbar puncture headache etc. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

**RESULTS**

Table I shows that age group 18- 22 years had 45 patients, 22-26 years had 30 and 26- 30 years had 25 patients. The difference was significant (P< 0.05). Table II shows that most common complication was shivering seen in 32, anesthetic failure in 27, Post-dural puncture headache (PDPH) in 20, hypotension in 16, nausea/vomiting in 14, high spinal block in 12, backache in 5 and loss of consciousness in 4. The difference was significant (P< 0.05).

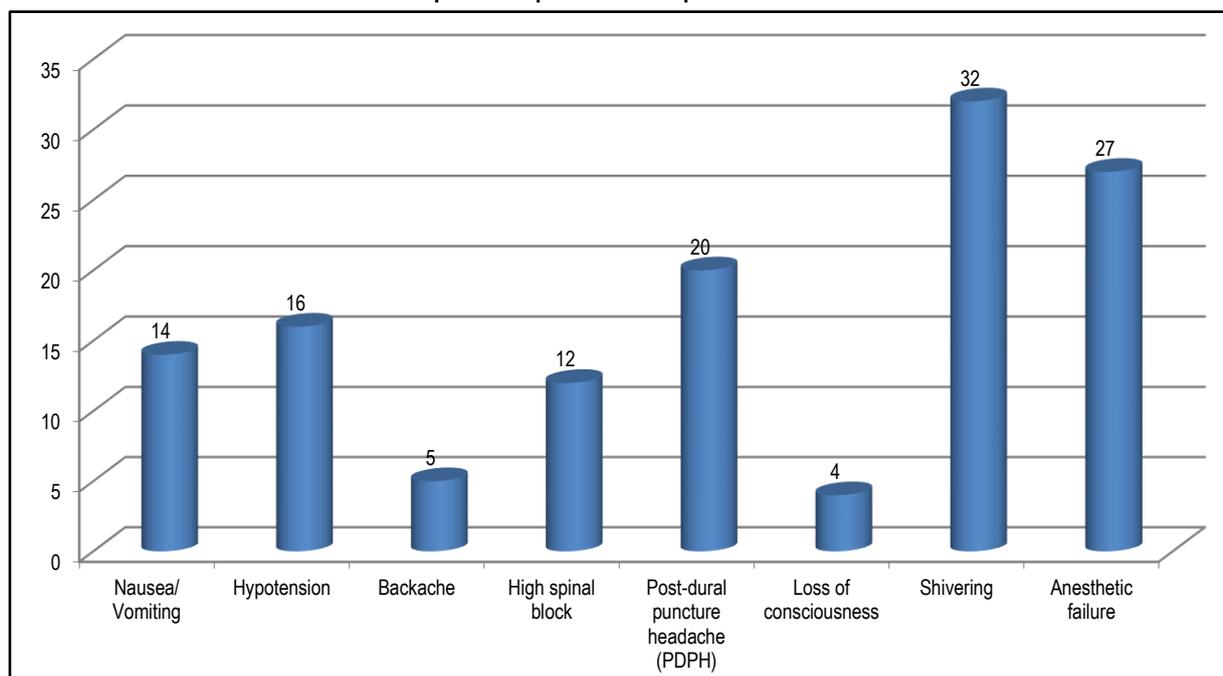
**Table I: Distribution of patients**

Age group (Years)	N	P value
18-22	45	0.01
22-26	30	
26-30	25	

**Table II: Complications of spinal anesthesia**

Complications	N	P value
Nausea/ Vomiting	14	0.05
Hypotension	16	
Backache	5	
High spinal block	12	
Post-dural puncture headache (PDPH)	20	
Loss of consciousness	4	
Shivering	32	
Anesthetic failure	27	

**Graph I: Complications of spinal anesthesia**



**DISCUSSION**

Spinal anesthesia is a technique of introducing anesthetic drugs into the subarachnoid space to abolish temporarily the sensory and motor functions of several groups of spinal nerves. Spinal anesthesia recently has gained popularity for cesarean section. The change in attitude that has taken place is related to an increased awareness that regional block methods are safer for both mother and infant.<sup>4</sup> Although spinal (subarachnoid or intrathecal) anaesthesia is the most reliable types of regional block methods, the possibility of complications has long been recognized. Dealing with a spinal anaesthetic which is in some way inadequate can be very difficult; so, the technique must be performed in a way which minimizes the risk of regional block.<sup>5</sup> Spinal anaesthesia in obstetrics differs from spinal anaesthesia in non-pregnant patients in several ways. Smaller doses of local anaesthetic are needed for spinal anaesthesia in pregnancy, and

the spread in cerebrospinal fluid (CSF) is less predictable. Hypotension, spinal headache and spinal opioid side effects are more common in pregnant patients than general surgical patients. The fetus may be affected adversely by maternal hypotension or inappropriate vasopressors. Technical difficulty in finding the subarachnoid space may be greater in pregnancy because of the increased lumbar lordosis.<sup>6</sup> The present study was conducted to assess complication of spinal anesthesia in cesarean section. In present study, age group 18- 22 years had 45 patients, 22-26 years had 30 and 26- 30 years had 25 patients. Hypotension following neuraxial blockade is due to sympathetic inhibition, which causes a significant decrease in the venous return due to dilatation of the resistance and capacitance vessels. Heart rate variability is technology to potentially prevent this problem. Pre-load with crystalloids to prevent hypotension is controversial as it

induces atrial natriuretic peptide secretion, resulting in peripheral vasodilatation and hypotension.<sup>7</sup> PDPH is a common complication of neuraxial blockade. Parturient constitutes the highest risk category, the reported incidence in these patients varying between 0 and 30%. PDPH is related to the size as well as the type of the spinal needle used, and it is progressively reduced with the use of thinner Quincke-type spinal needles. Pencil point needles have a lower incidence of PDPH than cutting needle tip designs. PDPH is a complication that should not be treated lightly. There is the potential for considerable morbidity due to PDPH.<sup>8</sup>

We found that most common complication was shivering seen in 32, anesthetic failure in 27, Post-dural puncture headache (PDPH) in 20, hypotension in 16, nausea/vomiting in 14, high spinal block in 12, backache in 5 and loss of consciousness in 4. Failure of a spinal anaesthetic is an event of significant concern for both patient and anaesthetist even when it is immediately apparent, but it can have serious consequences (clinical and medico-legal) if the problem only becomes evident once surgery has started. If there is any doubt about the nature or duration of the proposed surgery, a method other than a standard spinal anaesthetic should be used.<sup>9</sup> The trainee anaesthetist should avoid over-selling the technique, especially in the early days of unsupervised practice. Promising that all will be achieved by one injection leaves no room for manoeuvre, but offering one injection to reduce pain and a second to ensure unconsciousness does. If a spinal anaesthetic does fail in some way, the management options are limited; so, the first rule is to expend every effort in prevention.<sup>10</sup>

## CONCLUSION

Authors found that complications of spinal anesthesia are not uncommon phenomenon. Common complication was shivering, anesthetic failure, Post-dural puncture headache (PDPH), hypotension, nausea/vomiting, high spinal block, backache and loss of consciousness.

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