



"COMPARATIVE STUDY OF PHENYLEPHRINE AND MEPHENTERMINE INFUSIONS IN PREVENTING HYPOTENSION FOLLOWING SPINAL ANAESTHESIA IN CAESAREAN SECTION"

Akshay Patil

Department of Anaesthesiology, K.V.G. Medical College and Hospital, Sullia, Karnataka, India.

ABSTRACT

Background: Hypotension is a common and significant complication following spinal anaesthesia in parturients undergoing caesarean section. This study compares the efficacy of phenylephrine and mephentermine infusions in preventing hypotension during caesarean sections. **Methods:** A prospective, randomized study was conducted on 100 parturients undergoing elective caesarean sections under spinal anaesthesia. Patients were divided into two groups (n=50 each): Group P received phenylephrine infusion, while Group M received mephentermine infusion. Hemodynamic parameters, incidence of hypotension, and side effects were recorded. **Results:** Group P had a significantly lower incidence of hypotension compared to Group M (12% vs. 26%, $p < 0.05$). Phenylephrine maintained better hemodynamic stability, although a higher incidence of bradycardia was observed in Group P. Mephentermine showed a higher tendency to cause tachycardia. **Conclusion:** Both vasopressors are effective, but phenylephrine is superior in preventing hypotension with better maternal hemodynamic profiles during spinal anaesthesia in caesarean sections.

KEYWORDS : Spinal Anaesthesia, Hypotension, Caesarean Section, Phenylephrine, Mephentermine, Vasopressors

INTRODUCTION:

Spinal anaesthesia is the preferred technique for elective caesarean deliveries due to its simplicity and safety. However, hypotension following spinal anaesthesia is a frequent complication that can lead to maternal discomfort and fetal acidosis.

Vasopressor infusions are commonly used prophylactically. This study aims to compare phenylephrine and mephentermine infusions in preventing spinal-induced hypotension.

prophylactic vasopressor in such scenarios.

MATERIALS AND METHODS:

Study Design: Prospective, randomized controlled study.

Sample Size: 100 parturients, ASA grade I-II.

Randomization: Participants were randomly assigned to receive either phenylephrine (50 mcg/min) or mephentermine (0.1 mg/min) infusions.

Monitoring: HR, SBP, DBP, MAP recorded at baseline and every 2 minutes for the first 20 minutes post spinal block.

Outcome Measures: Incidence of hypotension (SBP < 90 mmHg or $> 20\%$ fall from baseline), HR variations, and side effects.

RESULTS:

Incidence of Hypotension: 12% in Group P vs. 26% in Group M ($p < 0.05$) Bradycardia: Higher in Group P (18%) compared to Group M (6%) Tachycardia: Noted more frequently in Group M (20%) than Group P (8%) Neonatal Outcomes: Comparable Apgar scores in both groups.

DISCUSSION:

Phenylephrine, a selective alpha-agonist, maintains blood pressure with minimal changes in heart rate, though bradycardia can be a concern. Mephentermine, a mixed alpha and beta agonist, tends to increase heart rate and cardiac output but is less effective in stable vasoconstriction. This study supports phenylephrine as a more effective agent for hypotension prevention during spinal anaesthesia in obstetric patients.

CONCLUSION:

Phenylephrine infusion is more effective than mephentermine in maintaining hemodynamic stability and preventing hypotension in caesarean sections under spinal anaesthesia. Clinicians should consider phenylephrine as the first-line