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"EFFECT OF SUBHYPNOTIC DOSES OF MIDAZOLAM AND PROPOFOL FOR NAUSEA AND VOMITING DURING SPINAL ANESTHESIA FOR CESAREAN SECTION"

Anesthesiology

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ABSTRACT

Introduction: Intra-operative nausea and vomiting is a common yet disturbing side effect associated with spinal anesthesia for cesarean section. In this prospective double blind study, comparision of effect of subhypnotic doses of Propofol and Midazolam on nausea and vomiting was done. **Materials and Methods:** The prospective randomized study was carried out in 60 parturients of ASA grade I &II of age groups between 20-35 years posted for cesarean section. They were divided into 2 groups of 30 each. The hemodynamic changes,nausea and vomiting scores, sedation scores were assessed and compared. **Result:** The parturients who received low dose of Propofol after delivery experienced less nausea and vomiting compared to parturients who received Midazolam. **Conclusion:** Subhypnotic Dose of propofol significantly decreases intraoperative nausea and vomiting in caesarean section under spinal anesthesia compared to subhypnotic dose of midazolam, with acceptable sedation and similar haemodynamic changes.

KEYWORDS

Spinal Anesthesia, Cesarean section, Subhypnotic doses , Propofol, Midazolam, Nausea and vomiting

INTRODUCTION

Spinal Anesthesia is one of the most widely accepted method of choice for caesarian section due to its safety and speed.

However, there a few yet disturbing side effects associated with this technique including intraoperative nausea and vomiting.

They have multiple etiologies which include hypotension, vagal hyperactivity, visceral pain, IV opioid supplementation and uterotonic agents. Recently it has been shown that low doses of Propofol can reduce IONV during spinal anesthesia for cesarian section more efficiently than Ondansetron and Metoclopramide

Benzodiazepines have been reported to have some benefits with regard to nausea and vomiting by reducing anxiety via lowering dopaminergic input to the chemoreceptor trigger zone

AIM & OBJECTIVES

The aim is to compare the effects of subhypnotic dose of midazolam and propofol in prevention of intraoperative nausea and vomiting in lower segment caesarean section under subarachnoid block.

To Monitor the effects of these agents on hemodynamics of the patients during Cesarian section To measure the sedation scores

MATERIALS AND METHODS

Study Design:
A Prospective Randomized double blind clinical study.

Place Of Study:
Government General Hospital, Siddhartha Medical College, Vijayawada.

Duration Of Study: January 2022 –December 2022

Study Subjects:
Pregnant women Admitted to OBG unit, GGH/Siddhartha Medical College, Vijayawada undergoing elective caesarean section under Spinal Anaesthesia.

After obtaining approval from hospital ethical committee and written informed consent, 60 pregnant women who fulfilled inclusion criteria were included in the study.

Inclusion Criteria

- ✓ Pregnant women of Age between 20 to 35, with ASA grade 1 and 2
- ✓ Elective caesarean section under spinal anesthesia

Exclusion Criteria

- ✓ pregnant women who are unwilling
- ✓ Pregnant women with comorbidities
- ✓ Pregnant women who had received antiemetic prior to surgery .
- ✓ short stature pregnant women (<145cms)
- ✓ ASA grade 3 and 4.
- ✓ Known allergy to trial drugs.

with hemorrhagic disorders

Sample size was estimated based on the findings of pilot study where the primary outcome being Belville grading for nausea and vomiting score using α=0.05, β=0.20 and power of study 80% sample size of 30 patients in each group was calculated

Pre-operative preparation:
A thorough preoperative evaluation was done on the day before surgery. All the necessary lab investigations were done.

Complete haemogram, bleeding time, clotting time,RFTs, urine analysis, blood sugar, ECG, 2DEcho ,chest X-ray

Randomization:
60 pregnant women were randomly allocated with the help of computer generated random number tables into two groups of 30 each.
Group 'M': Received 1 mg bolus Midazolam immediately after cord is clamped.

Group 'P': Received 20mg propofol immediately after cord is clamped. Syringes for the medications were prepared and covered according to the random number list by an Anesthesia assistant who was blinded to the study.

IONV after delivery were recorded by an Anesthesiologist who was blinded to the study In the OT the monitors like NIBP, ECG and Pulse oximeter were attached. All Pregnant women were preloaded with IV Ringer's lactate at the rate of 10 mL/kg over 20 - 30 minutes before operation.

To achieve the level of insensibility at T4-T5 dermatomes, the anesthetics were injected through a 25G spinal needle at L3-L4 intervertebral space Patients were placed in a left tilt position to avoid aortocaval compression HR & MAP monitored baseline, after

induction, after drug administration, after 30 min, After 45 min and 60 mins intervals

Hypotension, a decline of more than 20% from baseline pressure or systolic BP of less than 90 mm Hg, was managed with Mephenteramine (6mg incremental doses).

Patients were randomly allocated to Propofol and Midazolam groups. Medications were used intravenously at subhypnotic doses instantly upon umbilical cord clamping.

Nausea and vomiting were evaluated by means of Bellville scoring score(0: no symptoms, 1: nausea, 2: retching, 3: vomiting).

An antiemetic (Inj Ondansetron 4mg) was administered in case of 1 or more emesis episodes.

Sedation was assessed After delivery , At Drug Administration, 30 min After , 60 min and 120 mins After.

The modified Ramsey sedation scoring (1=anxious, 2=cooperative, 3=responding to commands, 4= brisk resounds to stimulus, 5=sluggish response to stimulus, 6= no response to stimulus).

Statistical Analysis.

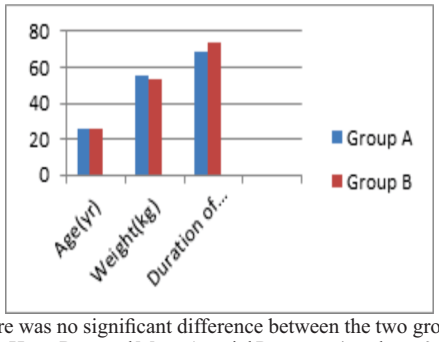
Statistical analysis was performed using GraphPad.com software. Data were analyzed and compared using student's t-test, Fisher's exact test, and Chi-square test.

Data were represented as a mean and standard deviation. $P < 0.05$ was considered statistically significant and $P < 0.001$ is considered as highly significant.

RESULTS

There was no significant difference between the two groups with respect to demographic data like age, weight and duration of surgery. (p value > 0.05)

Table -1



Also there was no significant difference between the two groups with respect to Heart Rate and Mean Arterial Pressure. (p value > 0.05)

Comparison of Belville nausea and vomiting scoring between the groups

Belville scoring	n = 30		P value
	Group M	Group P	
0	11	20	P= 0.001
1	05	05	
2	06	02	
3	08	03	
Total	30	30	

There is significant difference between two groups with respect to Belville scoring.($p < 0.05$)

Comparison of RSS between the groups

Sedation	Group M	Group P	P value
	Mean + SD	Mean + SD	
After delivery	2.03+0.32	1.97+0.414	0.488
At Drug administration	2+0.371	2.03+0.49	0.768
30 mins after	2.23+0.504	2+0.455	0.065
60 mins after	1.80+0.365	2+0.555	0.186
120 mins after	1.93+0.365	2+0.455	0.320

There was no significant difference between the two groups with respect to Ramsay Sedation Scores (p value > 0.05)

DISCUSSION

Nausea and vomiting are common and unpleasant side effects of regional anaesthesia for caesarean section. They cause significant distress to the patient and also interfere with the surgical procedure. During a caesarean section, nausea may occur in up to 80% of cases.

The parturients who received low dose of Propofol after delivery experienced less nausea and vomiting compared to parturients who received Midazolam No significant respiratory depressant effects were observed, which proved acceptable sedation through out the surgery

Sousan Rasooli et al. In their study demonstrated that, subhypnotic doses of midazolam and propofol are effective in preventing nausea and vomiting during spinal anaesthesia for a caesarean section. In our study overall incidence of nausea, vomiting was lower in Propofol than Midazolam groups

Numazaki et al showed that low doses of propofol reduces IONV during cesarean section under spinal anesthesia. The findings of our study are in accordance with their study,

CONCLUSION

We conclude from this study that, subhypnotic dose of propofol significantly decreases intraoperative nausea and vomiting in caesarean section under spinal Anesthesia compared to subhypnotic dose of midazolam, with acceptable sedation and similar haemodynamic changes.

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