

Optimal baseline mean arterial pressure for the management of spinal hypotension in women undergoing elective cesarean delivery: a case-control study analysis



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Introduction

- Guidelines recommend prophylactic vasopressor during cesarean section spinal anesthesia
- Maintain intraoperative blood pressure above 90% baseline
- **Study aim: Determine optimal baseline mean arterial pressure (MAP) reading to guide spinal hypotension management**

Methods

- Secondary analysis: Data from normotensive patients for elective cesarean delivery 2018-2020
- Demographic, clinical, and hemodynamic variables from the electronic health records
- Case-control design: Magnitude of hypotension in patients with nausea versus no nausea
- Baseline MAPs at last office visit, morning of surgery, or operating room (pre-spinal)
- Calculated duration and degree of hypotension using area under the curve (AUC) when MAP of respective patient was below 90% of each baseline

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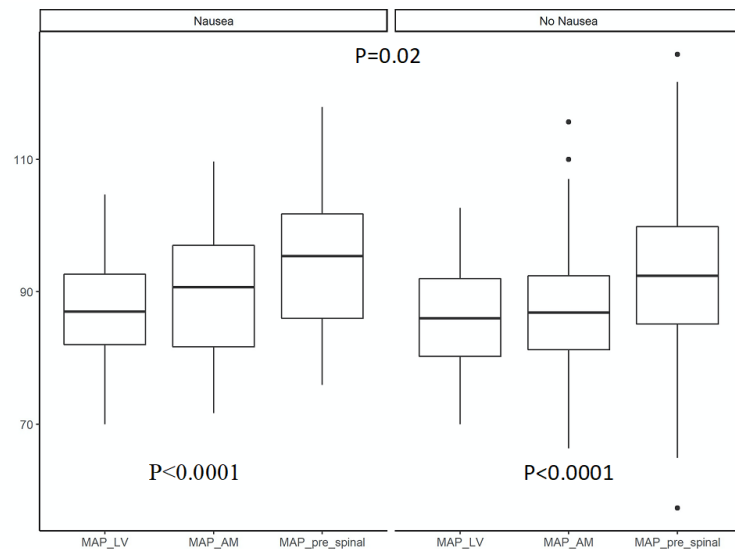
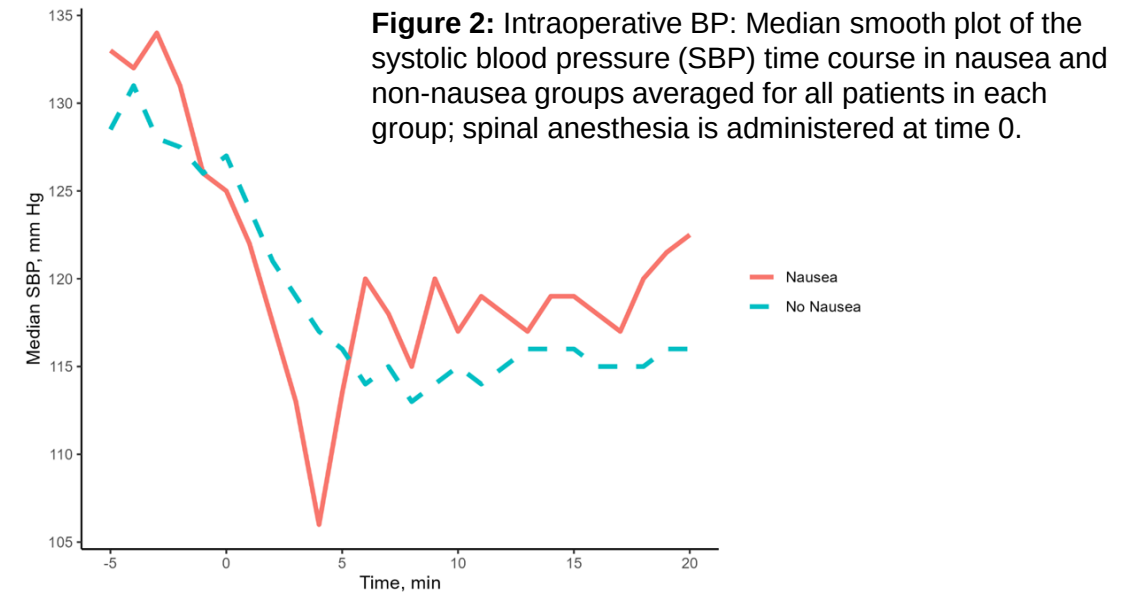
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Results

- 1496 in original study, 285 had presence (n=45) or absence (n=240) of nausea documented
- Those who experienced nausea had longer and more profound periods of hypotension
- Significant effect of time ($P<0.0001$) and group ($P=0.02$) when comparing the 3 baseline MAP values

Figure 1: Comparison of the mean arterial pressure at the last office visit, the morning of surgery, and in the operating room before spinal anesthesia



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Results

- Comparison of AUC using MAP baseline at **last office visit or the morning of surgery** showed statistically significant between-group difference ($P=0.02$ and $P=0.005$ respectively)
- No significant between-group difference in AUC when 90% of the MAP baseline in the **operating room** was used.

Table: A between-group comparison of the area under the curve < 90% of baseline mean arterial pressure in the operating room before spinal administration, on the morning of surgery, and at the last office visit

	Nausea (n=45)	Non-nausea (n=240)	P-value
AUC < 90% MAP_pre-spinal	112.5 (50.0 - 228.5)	86.4 (14.5 - 161.7)	0.094
AUC < 90% MAP_AM	69.4 (19.9 - 188.6)	33.7 (2.8 - 84.6)	0.005
AUC < 90% MAP_LV	51.6 (20.1 - 104.4)	26.2 (0.7 - 69.9)	0.016

AUC, area under the curve; MAP_LV, mean arterial blood pressure (MAP) taken at the last office visit; MAP_AM, the MAP in the morning of surgery; MAP_pre-spinal, MAP averaged for the last 5 min before the spinal administration. Values are median (interquartile range).

Conclusions

- Patients had the highest preoperative MAP in the operating room before the administration of spinal anesthesia
- **Maintaining higher intraoperative blood pressure using individual pre-spinal MAP as baseline should reduce intraoperative maternal nausea and vomiting.**

References

1. Anaesthesia. 2018;73(1):71-92
2. Int J Obstet Anesth. 2021;45:130-132