

Feasibility of Maintaining Maternal SBP $\geq 90\%$ Baseline During Elective Cesarean Delivery Under Spinal Anesthesia:

A Retrospective Cohort Study



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Background

- SOAP ERAC recommends maintaining **maternal BP at baseline** and **routine use of prophylactic phenylephrine infusion**¹.
- NICE guidelines emphasize maintenance of **maternal SBP $\geq 90\%$ of baseline** and avoid severe hypotension (SBP $< 80\%$ baseline)².
- Maternal **hypotension** has been associated with **negative neonatal outcomes**
- A recent UK multi-centre audit reported SBP $\geq 90\%$ of baseline in only 9.1% of cases despite routine vasopressor use³.

Objective

Assess adherence to **NICE guidelines (SBP $\geq 90\%$ baseline)** at our institution.

Hypothesis

Guideline adherence (**SBP $\geq 90\%$ baseline**) will be achieved in a minority of elective cesarean deliveries under neuraxial anesthesia.

¹. Anaesthesia. 2025; 80(10):1275–6

². Anaesthesia 2025; 80(12):1581–2

³. CMAA

METHODS

Study Design

- Single center retrospective cohort study
- Chart review from Mar 2022 - Jan 2023
- ASA II-III patients ($\geq 37/40$ gestation)
- Elective CD under spinal or combined spinal-epidural.
- **Exclusion:** Conversion to GA, multiple gestation, fetal abnormality, maternal cardiac disease or dysautonomia, hypertensive disorders of pregnancy, major hemorrhage or incomplete data.

Primary outcome

Percentage of cases with 100% guideline adherence, defined as **maintenance of SBP $\geq 90\%$ of baseline** from spinal initiation to baby delivery.

Secondary outcomes

- Incidence of severe hypotension (SBP $< 80\%$ of baseline)
- Neonatal outcomes including Apgar scores, arterial gases (pH, base excess), fetal acidemia (pH < 7.20) and unanticipated NICU admission.

RESULTS

Total of **498 cases** met inclusion criteria and were analyzed.

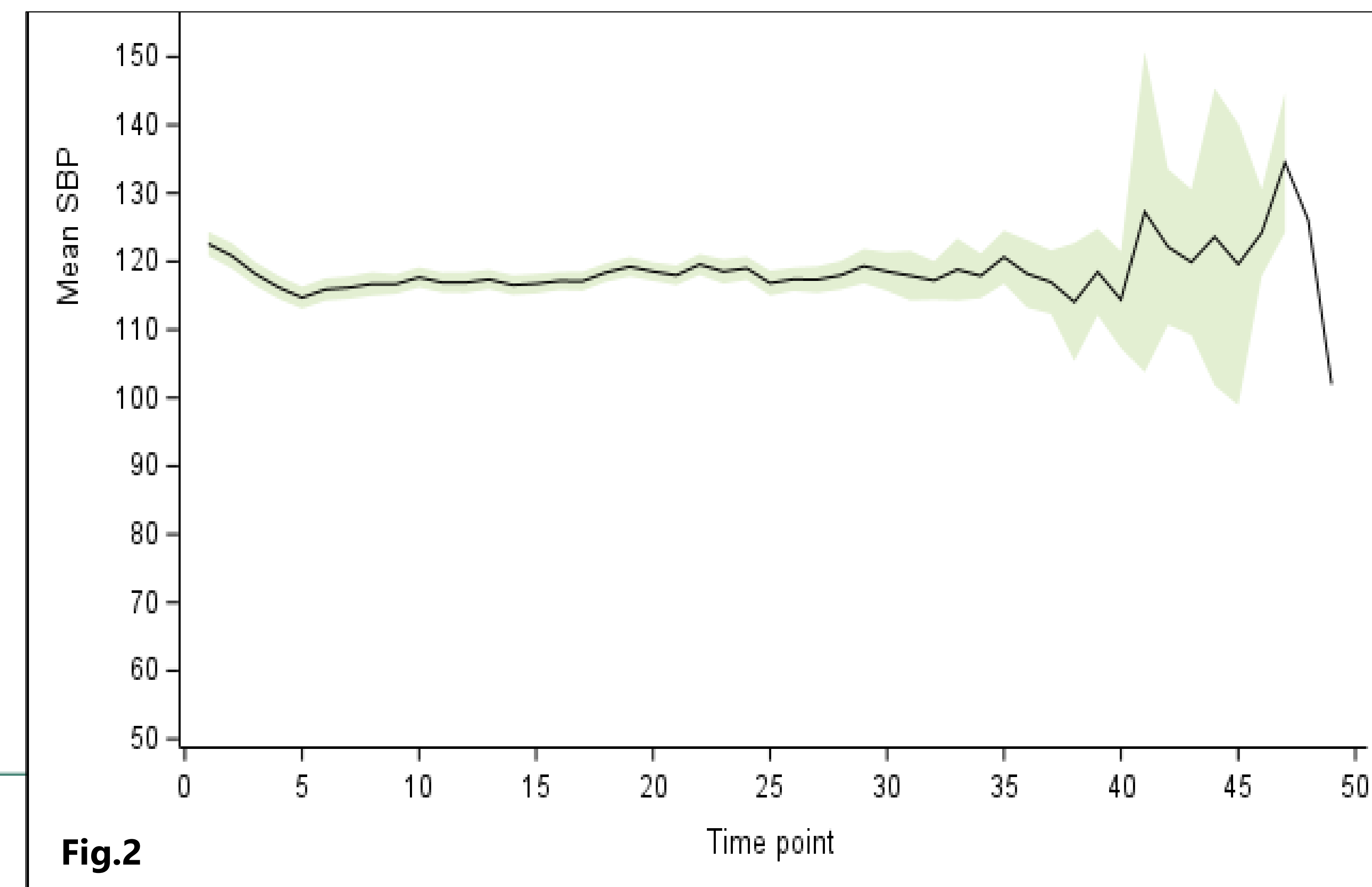
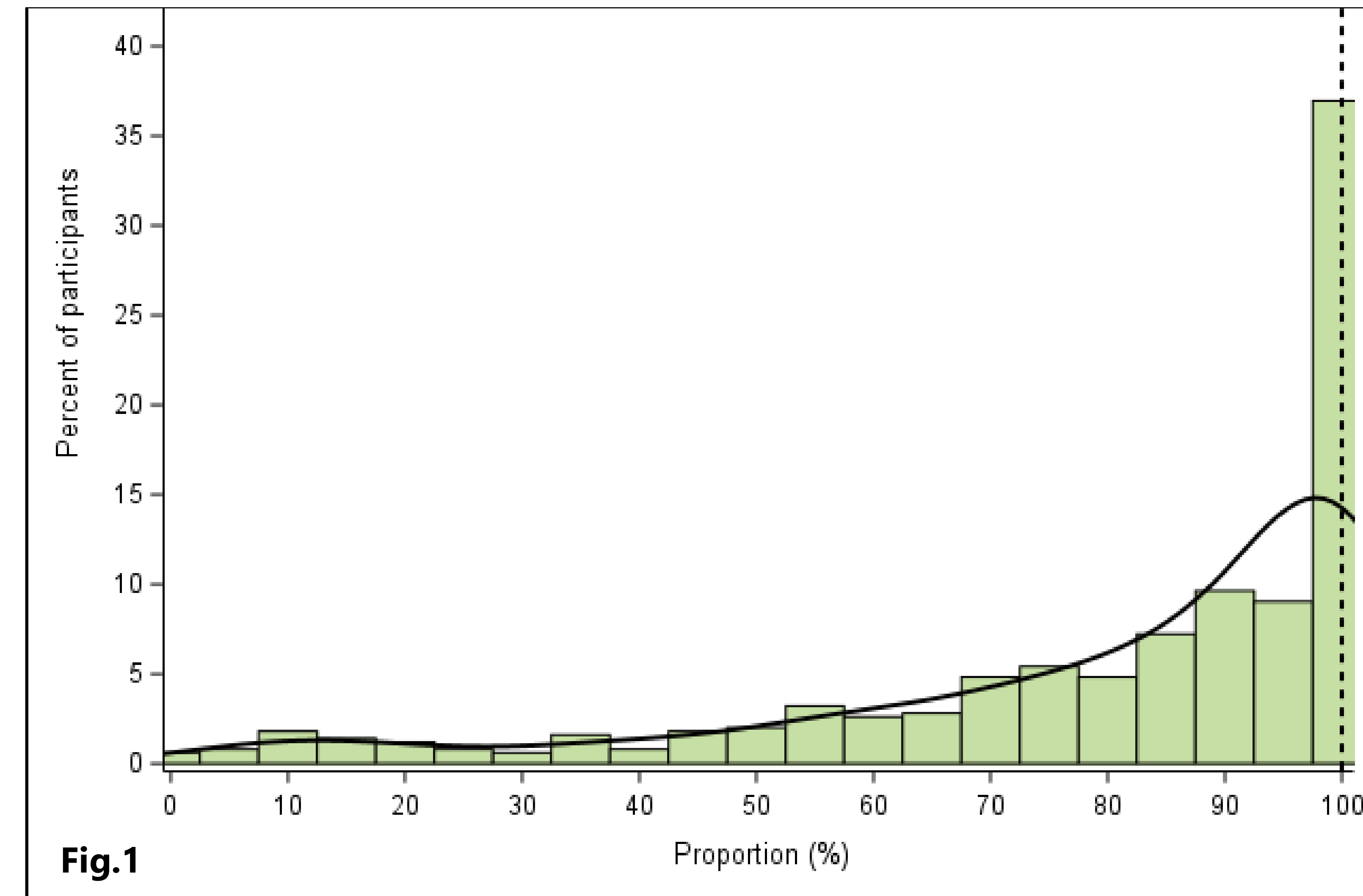
Only 37% of cases **met NICE Guideline** recommendations (Fig.1)

Severe hypotension (**SBP <80% baseline**) was observed in **68% of cases**.

In **0.6% (3 cases)** no SBP values were $\geq 90\%$ baseline.

SBP showed the most variability closer to time of baby delivery (Fig.2).

Vasopressor use: By 1 minute after neuraxial anesthesia, 84.1% of cases had started a vasopressor infusion, and by 3 minutes, 93.9% had.



Higher BMI was associated with a lower likelihood of maintaining stable blood pressure (OR=0.93, 95% CI:0.92–0.95, $p<0.001$)

Higher baseline SBP was associated with a lower likelihood of staying close to baseline (OR=0.95, 95% CI:0.94–0.95, $p<0.001$)

Neonatal outcomes were similar between cases with and without severe hypotension.

Arterial pH 7.25 vs 7.26
1min Apgar 8.66 vs 8.67
5 min Apgar 8.97 vs 8.87

3 NICU admissions

DISCUSSION

- Guideline **adherence was low** but better than similar studies.
- Baseline SBP value selection may play an important role.
- **No observed difference** in neonatal outcomes.
- Greatest variability close to time of delivery.
- **Higher initial SBP** groups with higher instability – borderline hypertensive disease
- **Higher BMI** with more instability – greater spread of neuraxial

Limitations:

- Rates of intraoperative nausea and vomiting were not routinely recorded.
- Level of block testing was not recorded.

Future work:

- Larger sample for better correlation of SBP subgroups with neonatal outcomes.
- Local departmental vasopressor administration: Comparison of norepinephrine and phenylephrine.