

Spinal Anesthesia Challenges In Geriatric Pregnancy With Hypertension And Delayed Block Onset : Case Report

• Background

- Advanced maternal age (AMA; ≥ 35 years) is an increasing trend and is reported to be associated with various pregnancy complications.
 - **gestational diabetes mellitus, preeclampsia, eclampsia**

Figure 1. Changes in birth rates by age from 1970 to 2018 in the U.S.

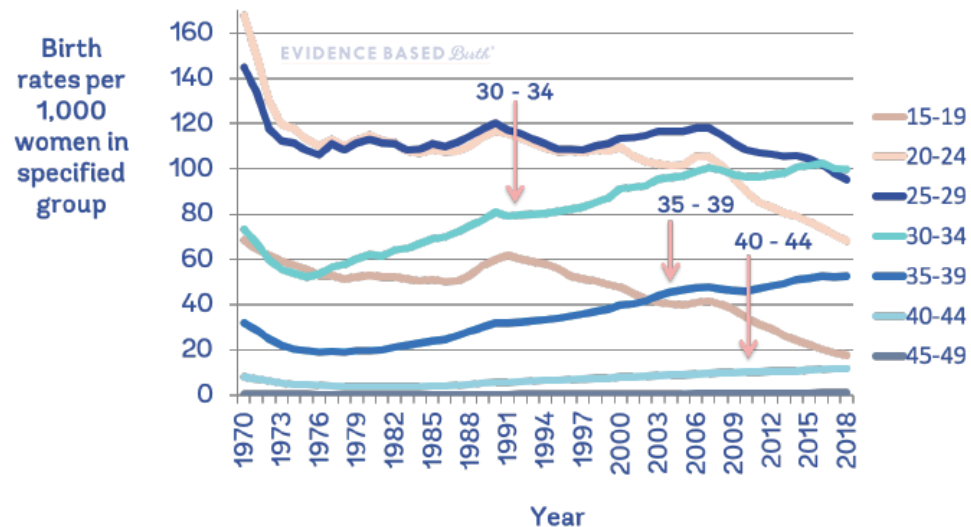


Figure 2. advanced age that maternal cardiovascular pregnancy adaptations

Cardiac structure and function

- Reduced contractility
- Inflammatory markers
- Ventricular hypertrophy

Peripheral Vascular Resistance

- Increased arterial stiffness
- Altered systemic resistance and endothelial cell function



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- **Case 1**

- ✓ **63-year-old G0P0 (ASA II)** conceived via frozen-thawed embryo transfer
 - ✓ Hypertension not on medication & GDM controlled by diet
- ✓ On surgery day, **BP 176/88 mmHg, HR 112 bpm**
- ✓ Spinal anesthesia
 - ✓ 11.5 mg hyperbaric bupivacaine + 10 mcg fentanyl
 - ✓ T4 level in 7 min
 - ✓ **BP 75/63 mmHg → 100 mcg phenylephrine ivs → 192/123 mmHg with headache → 500 mcg nicardipine ivs → stabilizing MBP at 70-80 mmHg.**
- ✓ Discharged with antihypertensive therapy

- **Case 2**

- ✓ **54-year-old G5P2 (ASA II)**
 - ✓ History of severe preeclampsia, GDM, and preterm deliveries (33 & 34 wks)
 - ✓ Chronic hypertension on metoprolol, later amlodipine added
- ✓ Emergent cesarean section at 31+3 weeks of gestation
 - ✓ d/t **Uncontrolled hypertension (SBP >200 mmHg) accompanied by blurred vision and headache**
- ✓ On surgery day, **BP 194/96 mmHg, HR 74 bpm**
- ✓ Spinal anesthesia
 - ✓ 10 mg hyperbaric bupivacaine + 10 mcg fentanyl led to a **delayed onset**
 - ✓ **T5 level after 25 minutes**
- ✓ The neonate was admitted to NICU
- ✓ Discharged with antihypertensive therapy → requiring cardiology follow-ups

• Discussion

- **Maternal age** critically impacts anesthetic management during cesarean delivery
- Advanced age → ↑ vascular stiffness, ↓ autonomic reserve, ↓ CSF volume
→ Affects neuraxial block onset & hemodynamic stability
- Delayed spinal onset may occur due to epidural space changes
→ Adjust dose & monitor closely.
- Chronic & gestational hypertension more common
→ Tight intraoperative BP control essential
- Vasopressors (e.g., phenylephrine): **individualized titration needed** to avoid hypertensive surge
- With rising maternal age, further research is needed to optimize neuraxial techniques, vasopressor use, and define BP targets.