

Navigating the Danger Zone: Cesarean Delivery in a Patient with Idiopathic Pulmonary Hypertension

Jeroen De Haes¹, Fernanda SL Oliveira¹, Marina Vainder², Ronald B. George¹

¹ - Department of Anesthesia and Pain Management, Mount Sinai Hospital, University of Toronto

² - Department of Obstetrics and Gynaecology, Mount Sinai Hospital, University of Toronto, Toronto, Canada



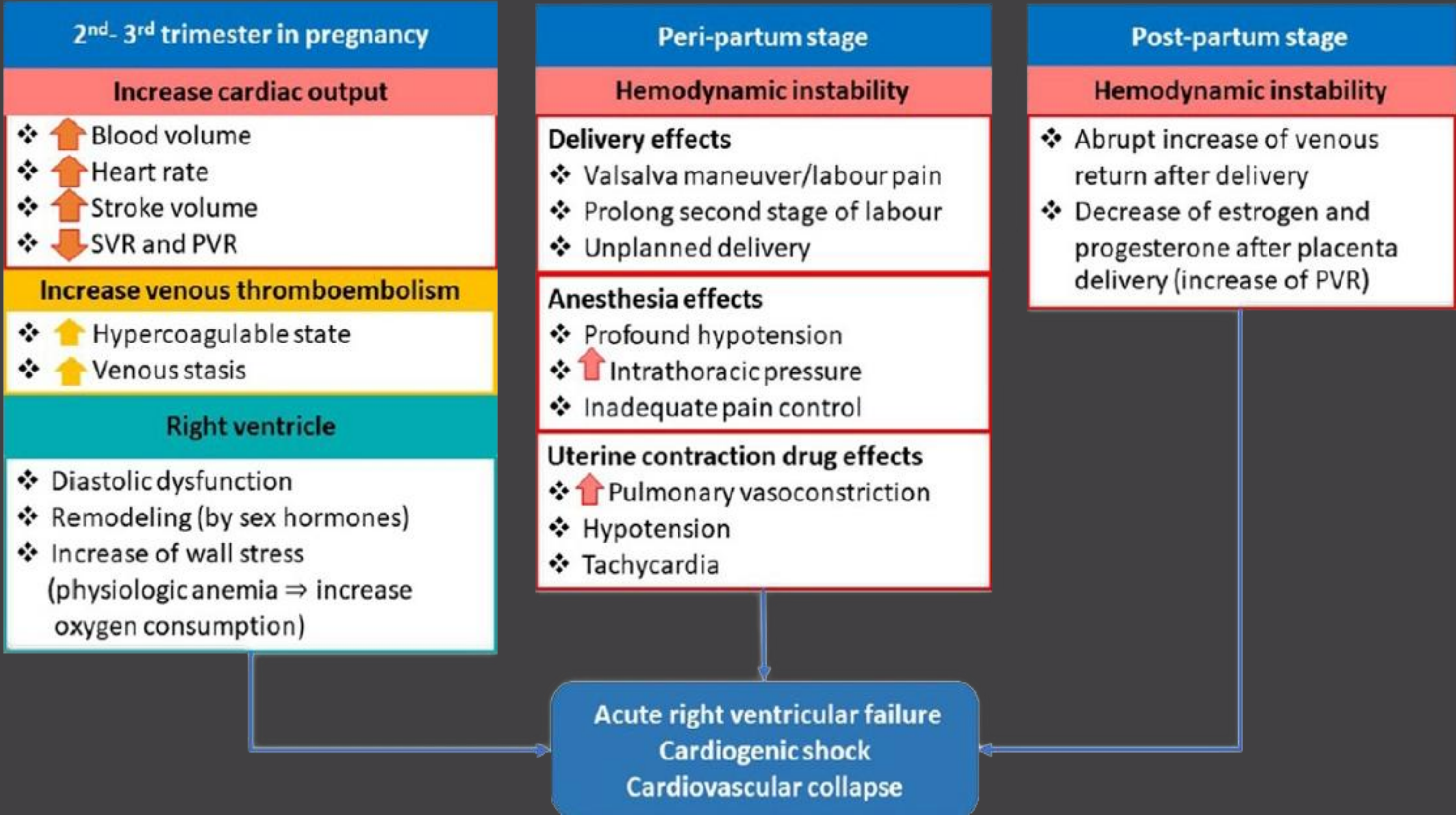
Mount Sinai Hospital
Joseph & Wolf Lebovic Health Complex

Background

- Idiopathic PAH in pregnancy carries **very high maternal risk**
 - ~20% mortality
 - Average maternal cardiac event rates **36-50%**
- Mortality clusters in the **early postpartum period**:
 - 61% of mortality** occurred on D0-4 postpartum
- mWHO 2.0 Class IV**→ Expert counselling and risk/benefit discussion required

The Challenge

- Improved survival → increased encounter with **high-risk obstetric patients**
- Cesarean delivery presents competing priorities:
 - Adequate anesthesia and uterine tone
 - Avoidance of **acute RV failure** from abrupt SVR or preload changes



Patient

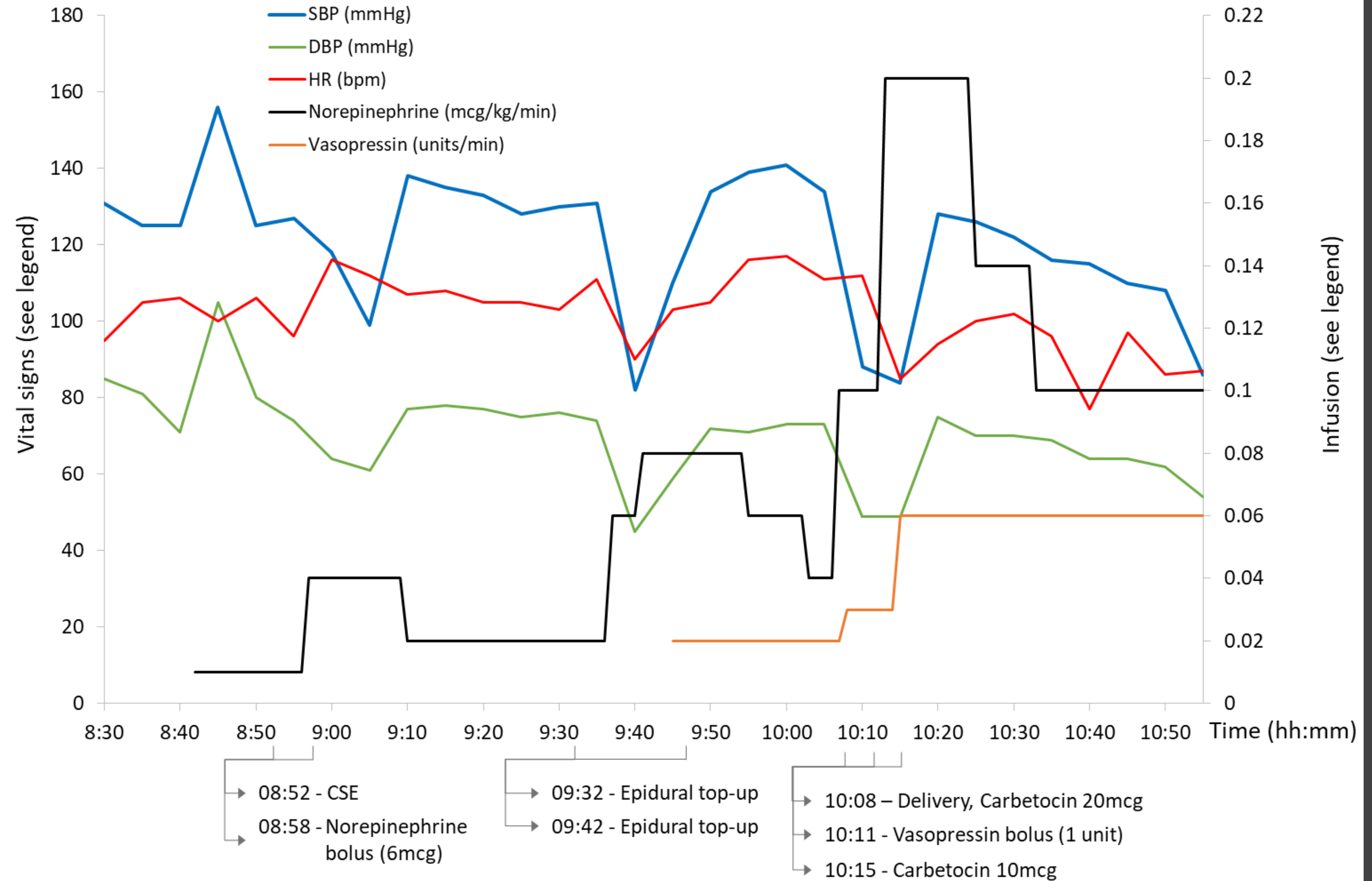
- **35F, G2P0**, 32+1 weeks' gestation admitted with worsening hypoxemia
- Severe **idiopathic PAH**
 - **mPAP 48 mmHg, PVR 8.8 WU**
 - **Severely dilated RV** with moderately reduced systolic function, severe TR.

Decision

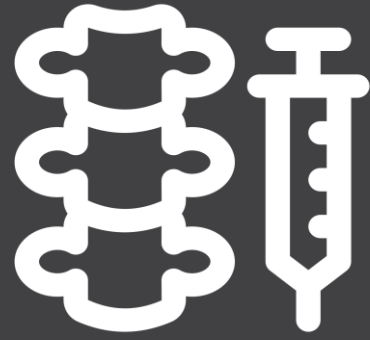
- Extensive **multidisciplinary** planning
- Planned **preterm C-section** at 33+5 weeks

Management

- Pre-induction arterial and central line
- **Low-dose combined spinal epidural (CSE)**
 - 0.3 mL of heavy Bupivacaine 0.75% + 10mcg Fentanyl + 100mcg of Morphine
 - 8mL of 2% lidocaine-1:200,000 epinephrine
- Pre-emptive femoral single lumen catheters placed
- **Tight RV-protective hemodynamic control**
 - Norepinephrine – Vasopressin
 - iNO
- **Incremental carbetocin dosing**
- ICU admission x 5 days and discharged home on **POD 9 - stable**



Key Learning Points



Carefully titrated low-dose CSE can be safely applied in severe PAH

- Proactive vasopressor support
- Real-time hemodynamic management and monitoring



Incremental uterotonic administration, rather than bolus dosing, can achieve adequate uterine tone while minimizing RV stress



Optimal outcomes in high-risk obstetric anesthesia depend on:

- Understanding **RV physiology**
- **Clear multidisciplinary communication**

Take Home Message

Physiology-driven and titrated anesthesia with multidisciplinary collaboration enables safe delivery even in mWHO 2.0 IV disease