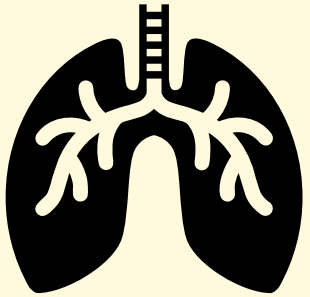
Background and Importance



- Mortality as high as 30-50% despite increasing technology (up to 56% in 1990s)[1]
- Contraindication to pregnancy [2]
- Physiologic changes put pregnant women at risk: [3]
  - Increased plasma volume and CO
  - Overloaded cardiopulmonary system, reduced SVR
  - Increased risk of thrombosis
  - Reduced PA compliance + increase in RV afterload and EDV → ultimately lead to RV dysfunction

1. *J Am Coll Cardiol. 1998;31(7):1650-1657*
2. *Obstetrics & Gynecology 133(5):p e320-e356*
3. *Integr Blood Press Control. 2022;15:33-41*

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Patient & Case

- 23yo G1P0 admitted at 27w6d in the setting of an unplanned, but desired pregnancy
- PMH: BMPR2 mutation → Type 1 pulmonary arterial HTN (functions in the antiproliferative signaling pathway)
- Worsening RV function throughout pregnancy requiring transition from oral pulmonary vasodilators to continuous IV therapy
- At 25w2d her estimated PAP on TTE was 123mmHg with flattened septum, by week of delivery it had improved to 52mmHg
- At 30w6d she required emergent cesarean for pre-term labor under GA due to inability to safety perform neuraxial (AC not held, thrombocytopenia from Treprostinil up titrations)

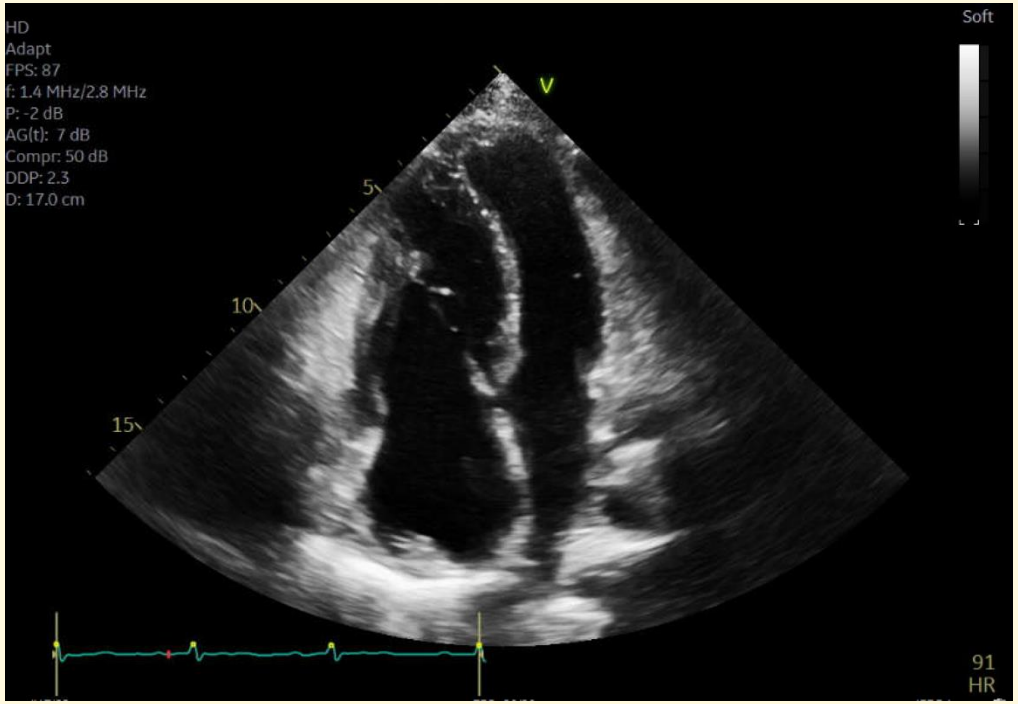
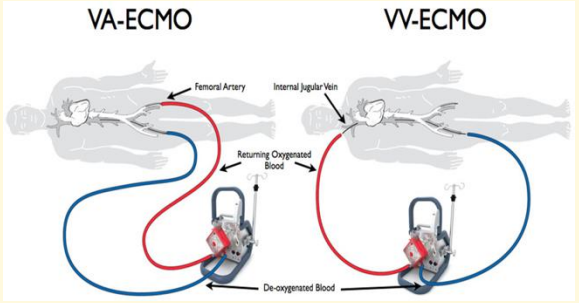


Figure 1. Apical four chamber view with severe RV dilation.

- ECMO was available with CT surgery in OR.
- Preinduction arterial line, PAC and swan were placed.
- iNO was added after intubation.
- PA pressures were suprasystemic by delivery and beyond into PP period, reaching 140-180mmHg at times. No vasopressor was required during case.
- ECMO was considered daily but ultimately never cannulated due to reassuring end organ perfusion.

Discussion and Take Aways



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- Multidisciplinary care team at a center with experience in PHTN in pregnancy is paramount. (phone tree, back up plans)
- Must include expertise from MFM, NICU, PHTN, OB anesthesia, CT anesthesia, CT surgery, ICU, pharmacy, and ECMO cannulation team.
- Greatest risk is RV dysfunction and failure in the immediate postpartum period up to 72hrs after delivery and ECMO should be continually considered if eligible.
- This case contributes to the growing knowledge based due to her gestational age achieved in the setting of her disease severity and eventual morbidity despite maximal efforts by a multidisciplinary team.
- Our team has also considered ECMO earlier in the course and more pre-emptively in our cases following this patient. We must strive to stay vigilant during the postpartum period and work collaboratively with ICU team for best possible outcome.