Multidisciplinary Management of a Pregnant Patient with Pulmonary Hypertension

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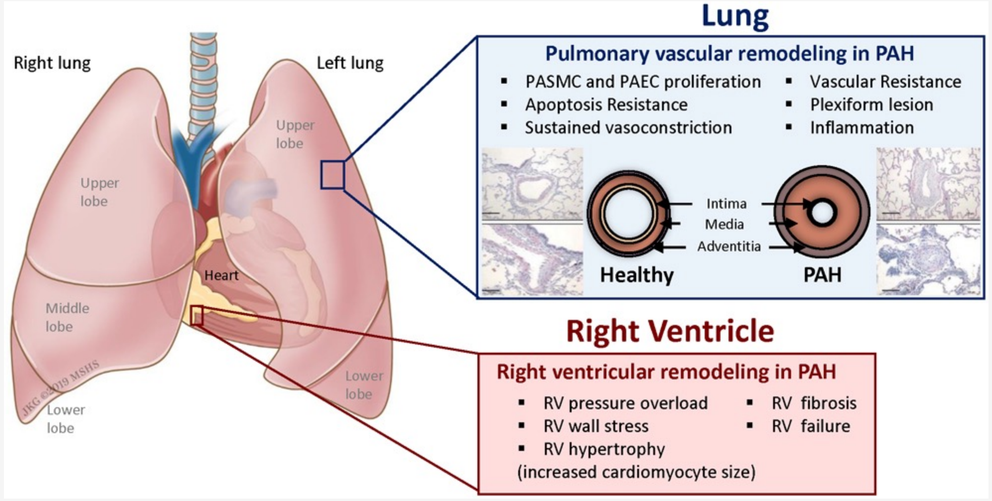
Introduction

- While the incidence of pulmonary hypertension (pHTN) in pregnancy is rare, it has steadily climbed over the last couple decades and maternal and neonatal mortality remains high
- Diagnosis can be made via serial echocardiograms and right heart catheterization (RHC)
- pHTN can be classified based on etiology of increased pulmonary arterial pressures
- Multidisciplinary management and appropriate medical optimization is critical prior to delivery
- Strict hemodynamic goals are necessary to avoid complications such as worsening pHTN, right heart failure and death



Classification of pHTN	
	Type 1: Pulmonary arterial Hypertension (PAH)
	Type 2: pHTN due to cardiac disease
	Type 3: pHTN due to lung disease and/or hypoxia
	Type 4: Chronic Thromboembolic pHTN
	Type 5: pHTN due to miscellaneous causes

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Case

- 36yo G8P6017 presented at 36+3wga with cough, shortness of breath and lower extremity edema
- PMH: HIV/HCV, substance abuse disorder (IVDU, opioids), anxiety/depression, ADHD, drug-induced torsades de pointes in setting of methadone use
- Medications: buprenorphine, raltegravir, descovy

Initial Workup

- Serial echos: Worsening LVEF 51%, increasing PASP 52.1, RV dilation, septal flattening
- Diuresis with suboptimal improvement

CCU Admission

- Central venous catheter, Swan Ganz catheter, arterial line and PICC line placed
- RHC: PASP 70s with improvement on iloprost
- Transitioned to inhaled epoprostenol (EPO) and started on sildenafil

Repeat Cesarean Delivery

- Slow incrementally-dosed epidural with intrathecal opioids
- Strict hemodynamic management
- Continued inhaled EPO

Postoperative Course

- Improved hemodynamics: PASP 50s, LVEF 57%
- Weaned off EPO and transitioned to Lasix, tadalafil, macitentan, spironolactone
- Discharged on POD4

Avoid RV Overload

- Diuresis
- Monitor sudden relief of vena caval compression and autotransfusion
- IM uterotonics

Decrease PVR

- Avoid pain, hypoxemia, hypercarbia, acidosis
- Inhaled NO, iloprost, EPO
- PAH-specific medications
- Avoid hemabate

Maintain SVR

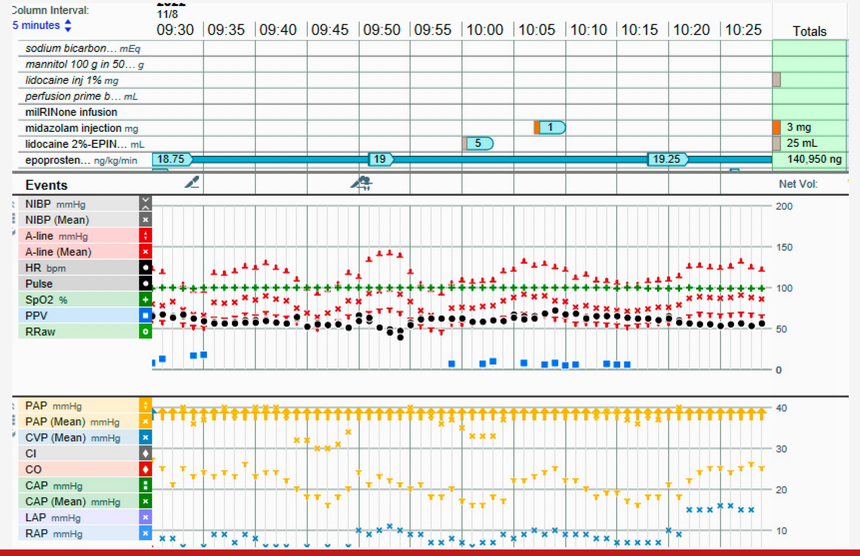
- Vasopressors (norepinephrine, vasopressin)

Avoid Myocardial Depression

- Inotropes
- Avoid GA ex. volatile anesthetics, laryngoscopy, PPV

Mechanical Circulatory Support

- Prophylactic cannulation for peripartum ECMO in setting of RV failure or severe hypoxemia



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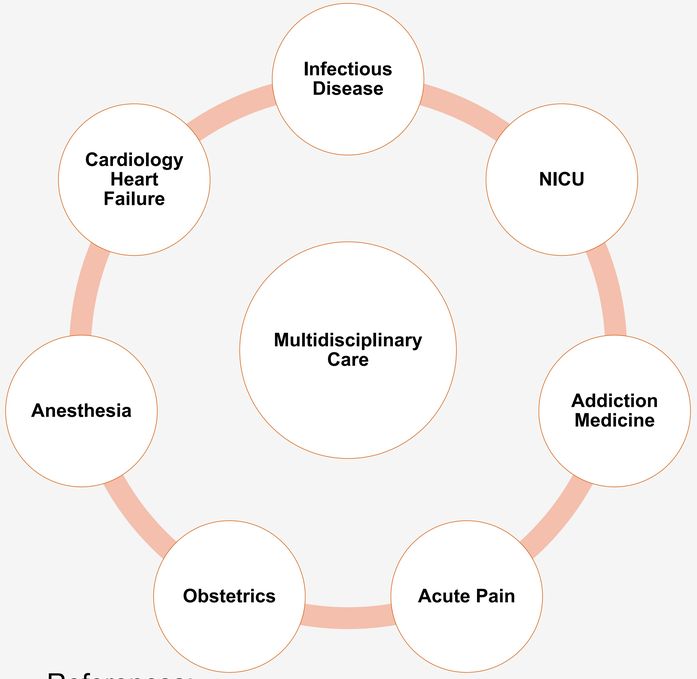
Discussion

- Pulmonary hypertension in pregnancy has high mortality risk
- Avoidance or early termination of pregnancy is recommended
- If patient pursues with pregnancy, patient should be closely monitored for increased PAP and RV dysfunction
- Most tenuous course is during second and third trimester, delivery and especially postpartum
- Multidisciplinary collaboration between specialties is required for successful management of patient



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Questions/Comments:
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