



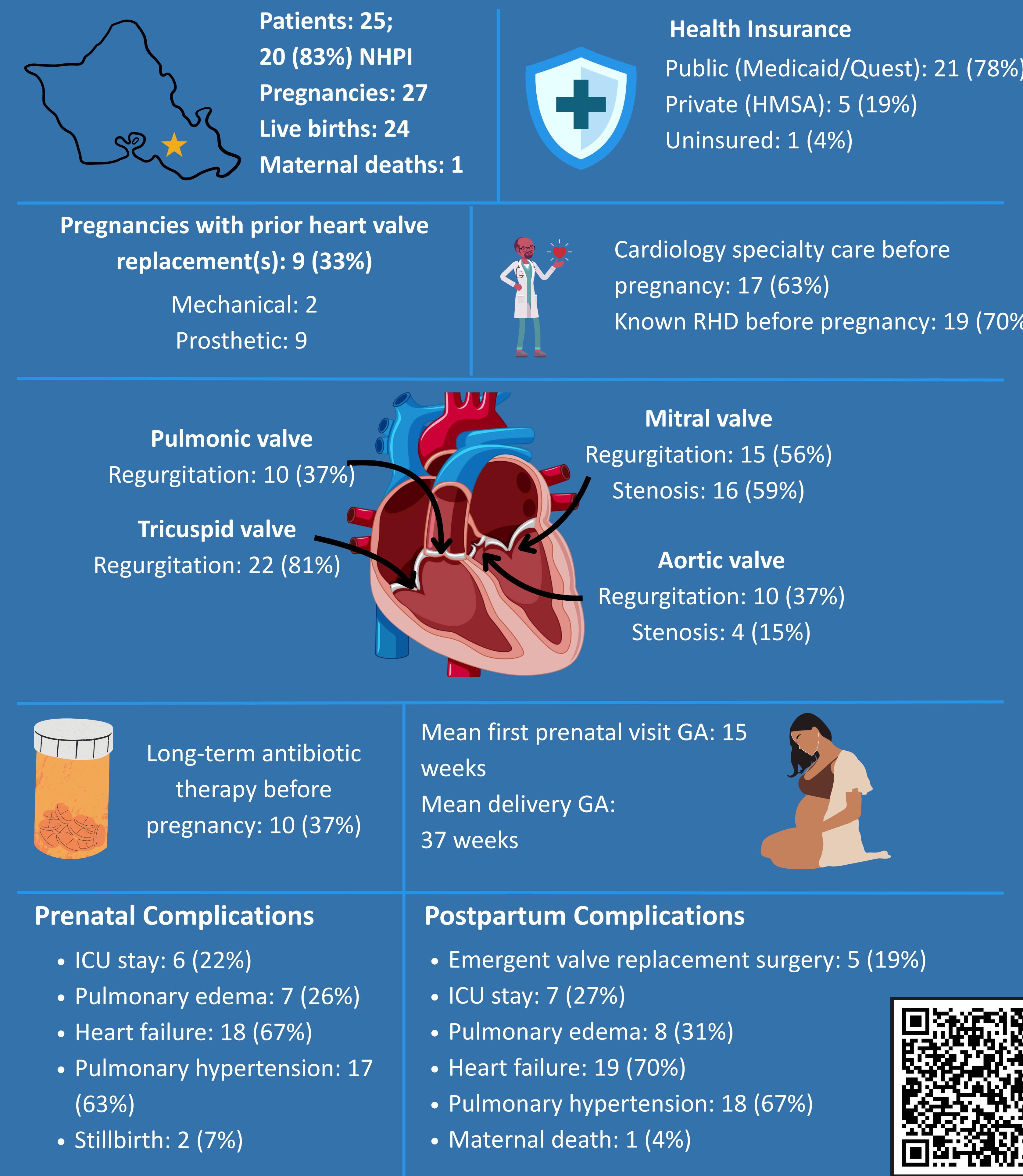
Characterizing Rheumatic Heart Disease (RHD) in Pregnancy: A Case Series from Hawai'i

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Introduction

- RHD: chronic heart valve condition largely affecting reproductive-aged women (1)
- Prevented by antibiotic therapy
- Composes 30% of cardiac disease in pregnancy in developed countries and 90% in non-developed countries (2)
- May be diagnosed during pregnancy for the first time due to increased hemodynamic stress (3)
- Recognizing common morbidities for mother and child can inform optimization of care

Graphical Abstract:



Take-Home Message:

This study is likely the first characterization of RHD in pregnancy in a predominantly NHPI population. We observed that RHD during pregnancy had higher frequency of complications, including heart failure, pulmonary edema, and stillbirth. We recognize that systemic barriers such as limited access to antibiotic treatment, late prenatal care, and missed postpartum follow-up may have contributed to these morbidities.

Results:

Antepartum outcomes

Characteristic	Mean (SD); n (%)
Antepartum ICU stay > 24 hours (n=27)	6 (22.2%)
Need for emergent surgery (n=27)	1 (3.7%)
Pulmonary edema (n=27)	7 (25.9%)
Thromboembolism (n=27)	2 (7.4%)
Preeclampsia (n=27)	3 (11.1%)
Major bleed while on an anticoagulant medication, requiring blood transfusion (n=27)	0 (0%)
Fatality (n=27)	0 (0%)
Stillbirth (n=27)	2 (7.4%)
Miscarriage (n=27)	1 (3.7%)
Heart failure (n=27)	18 (66.7%)
Pulmonary hypertension (n=27)	17 (63%)

Table 1. Antepartum morbidities in patients with RHD

Description of Results:

- Pregnancies that required ICU stay had more severe valvular disease, and higher rates of pulmonary edema, pulmonary hypertension, and heart failure
- Pregnancies complicated by pulmonary edema had higher rates of postpartum valve replacement surgery and instances of severe mitral valve disease
- Pregnancies with prior valve replacement surgery had higher rates of stillbirth and postpartum heart failure and pulmonary hypertension
- Pregnancies with antepartum pulmonary hypertension had more instances of severe valvular disease and mitral valve lesions
- High incidence of IUD in patients with RHD (7%) during pregnancy

Methods

- Retrospective case series
- Identified patients with RHD during pregnancy who delivered and had prenatal care at QMC
- Data obtained from electronic medical records on Epic/CareLink
- Non-identifying patient data recorded on RedCap; data analyzed with Microsoft Excel

Postpartum outcomes

Characteristic	Mean (SD); n (%)
Completed postpartum follow-up appointments with an obstetrician within 2 months (n=26)	17 (65.3%)
Completed postpartum follow-up appointments with a cardiologist within 2 months (n=26)	18 (69.2%)
Postpartum ICU stay > 24 hours (n=26)	7 (26.9%)
Valve replacement surgery within 2 months postpartum (n=26)	5 (19.2%)
Pulmonary edema within 2 months postpartum (n=26)	8 (30.7%)
Thromboembolism within 2 months postpartum (n=26)	3 (11.5%)
Major bleed while on an anticoagulant medication, requiring blood transfusion within 2 months postpartum (n=26)	1 (3.8%)
Postpartum heart failure within 1 year of delivery (n=26)	19 (70.3%)
Postpartum pulmonary hypertension within 1 year of delivery (n=26)	18 (66.7%)
Fatality while postpartum within 1 year of delivery (n=26)	1 (3.8%)

Table 2. Postpartum morbidities in patients with RHD

Conclusion:

- Identifying common complications of RHD in pregnancy in a predominantly NHPI population can inform optimization of care
- Recommend delivery at a level 4 maternal care facility for RHD patients in pregnancy, given risk of postpartum morbidities
- Many patients had delayed prenatal care and low rates of OB and cardiology follow-up care after delivery, which may have contributed to these morbidities
- Further research: larger sample size for definitive evaluation of RHD impact on maternal and fetal morbidity

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