



Management of Simple Congenital Heart Disease and Pregnancy

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No Disclosures

Learning Objectives

1. Identify strategies to evaluate and manage patients with simple congenital cardiac disorders around pregnancy
2. Recognize that “simple CHD” is not synonymous with “uncomplicated CHD”
It will not always be smooth sailing!

Management of Simple ACHD During Pregnancy

Outline

- Scope – simple lesions
- Case-based format
- Pre-pregnancy evaluation
- Pregnancy and post-partum management
- Summary

STATE-OF-THE-ART PAPER

Outcome of Pregnancy in Women With Congenital Heart Disease

A Literature Review

Willem Drenthen, MD,* Petronella G. Pieper, MD, PhD,* Jolien W. Roos-Hessink, MD, PhD,‡
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Arie P. J. van Dijk, MD, PhD,|| Hubert W. Vliegen, MD, PhD,¶ Sing C. Yap, MD,‡
Philip Moons, PhD, RN,# Tjark Ebels, MD, PhD,† Dirk J. van Veldhuisen, MD, PhD, FACC,*
on behalf of the ZAHARA Investigators

Groningen, Rotterdam, Amsterdam, Nijmegen, and Leiden, the Netherlands; and Leuven, Belgium

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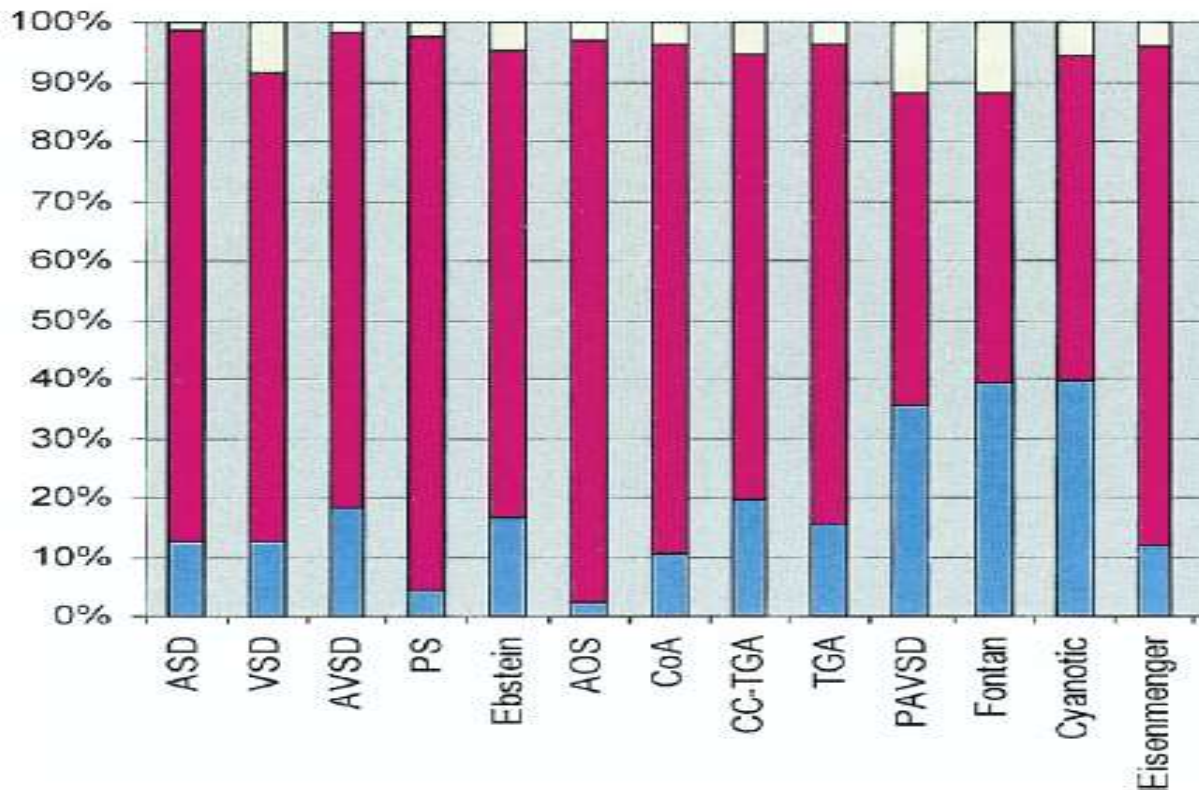
rant ("spontaneous") episodes of arrhythmias (including origin and type of arrhythmias) or heart failure, cardiovascular events (myocardial infarction, cardiovascular mortality and/or cerebrovascular accidents), or endocarditis (including first 6 months postpartum). Obstetric complications: pregnancy-induced hypertension, preeclampsia, eclampsia,

Outcome of pregnancy in patients with structural or ischaemic heart disease: results of a registry of the European Society of Cardiology

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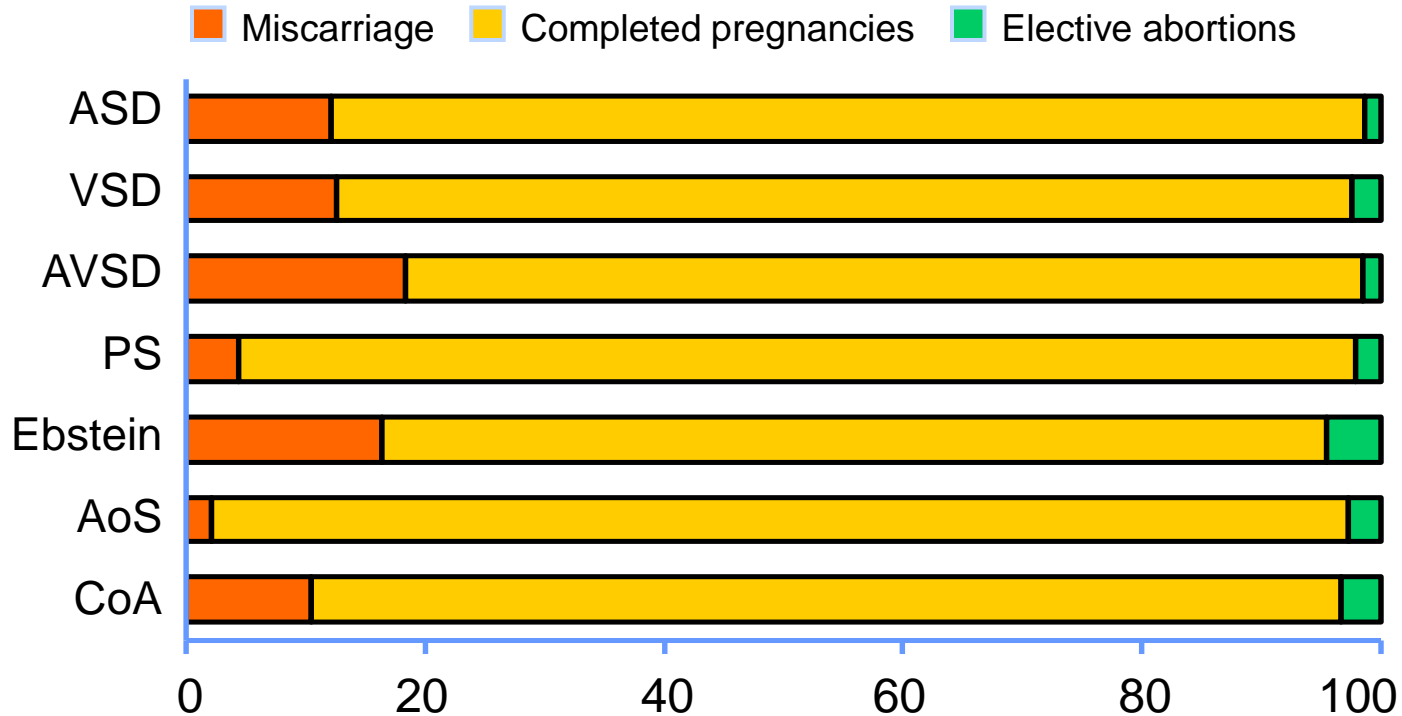
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■ Miscarriages
 ■ Completed pregnancies
 Elective abortions



Drenthen et al: JACC 2007

Distribution of Complications During Pregnancy in Women with CHD



Modified WHO Classification

Class I

- No detectable ↑ risk of maternal mortality and no/mild ↑ in morbidity
 - Uncomplicated small PDA, mild PS
 - Repaired simple ASD, VSD, PDA or APVC
- Follow-up during pregnancy may be 1-2 visits

Modified WHO Classification

Class II

- Associated with small \uparrow risk of maternal mortality or moderate \uparrow in morbidity
 - Unrepaired ASD, VSD
 - Repaired TOF
- Follow-up every trimester is recommended



Risk Assessment

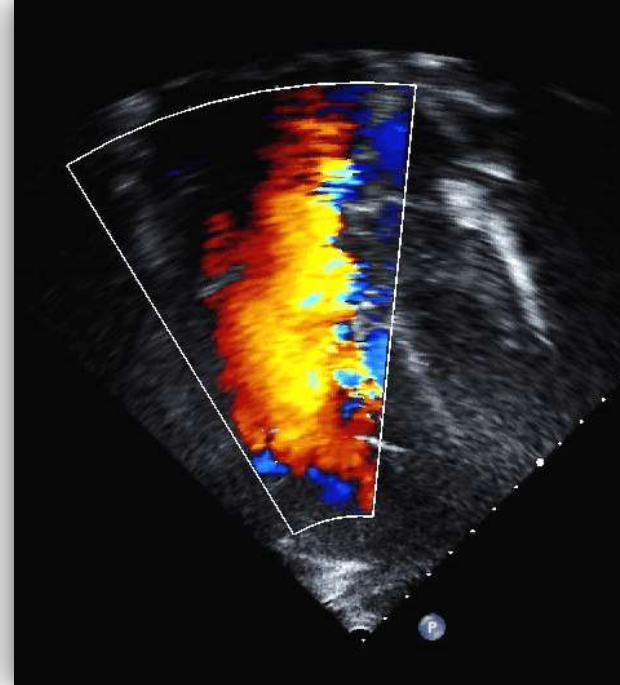
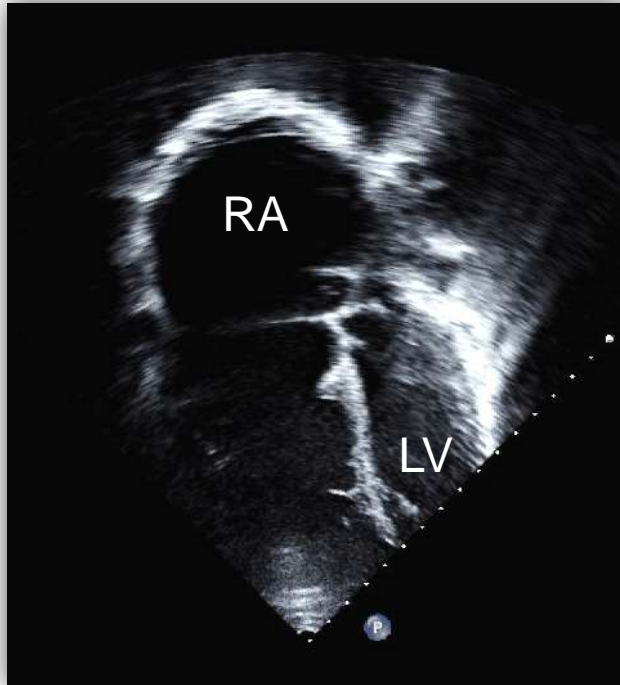
28-Year-Old Female

Ebstein – Considering Pregnancy

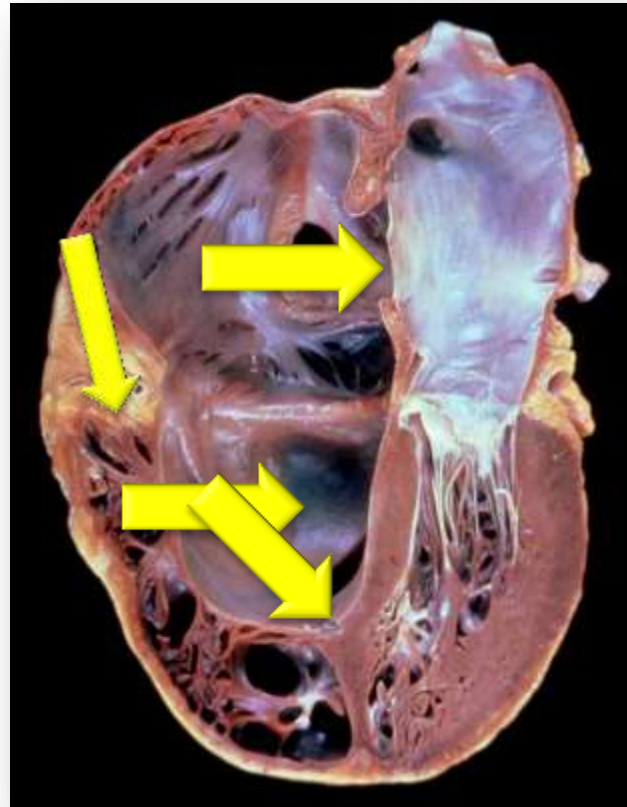


28-Year-Old Woman

Prepregnancy Evaluation – Asymptomatic OK to Proceed?



Ebstein Anomaly



Ebstein Anomaly and Pregnancy

- 44 pt – 111 pregnancies, 85 live births (76%)
- ↑ risk of prematurity, fetal loss and CHD in offspring
- Lower BW in offspring of cyanotic vs acyanotic
- Mothers did well

Ebstein Anomaly and Pregnancy

1972 - 2006

Pregnancies Reported by 82 of 285 Respondents

Time of Pregnancy	Women, n	Pregnancies, n	Miscarriages, n (%)
Before operation	59	140	27 (19)
After operation	27	62	21 (33)
Total	86	202	48

CHD reported in 9 of 232 (3.9%) live-born children

Ebstein Anomaly – Indications for Repair

ACC/AHA 2008

- ↓ exercise capacity
- Cyanosis – ↑ risk of stroke
- Severe TR – esp when repairable
- Marked cardiomegaly



28-Year-Old Female

TV repair, RA and RV plication, PFO closed



Preop



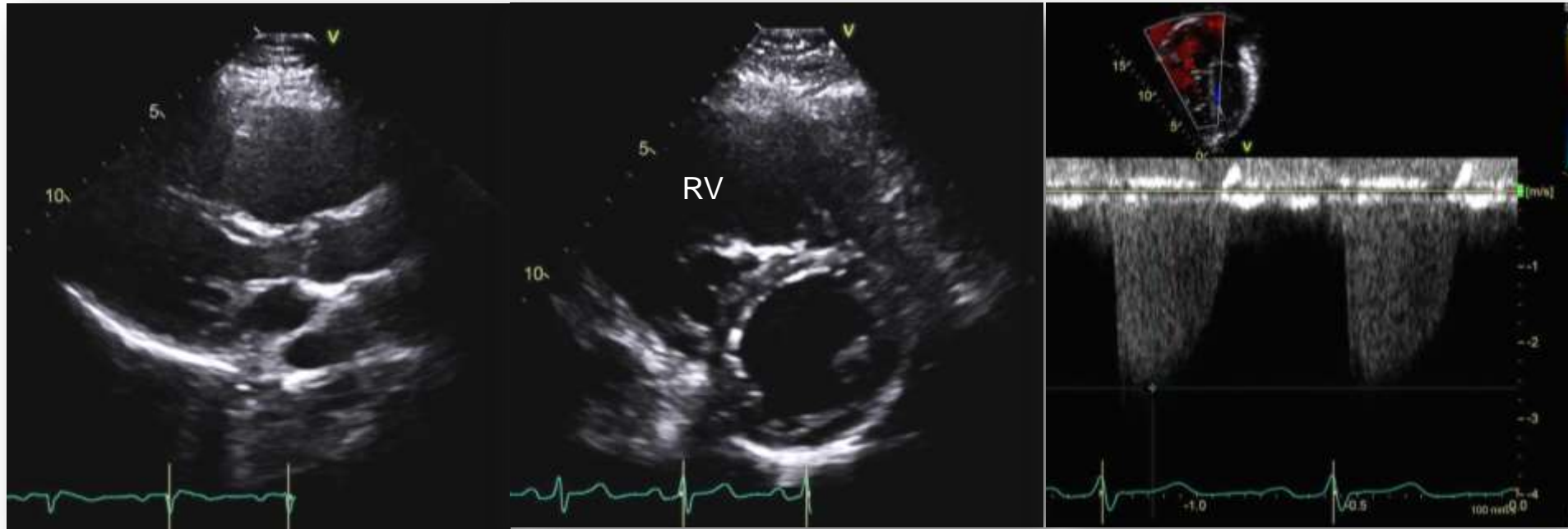
6 months postop



Shunt lesion in pregnancy

35-Year Old G2, P1 with Murmur

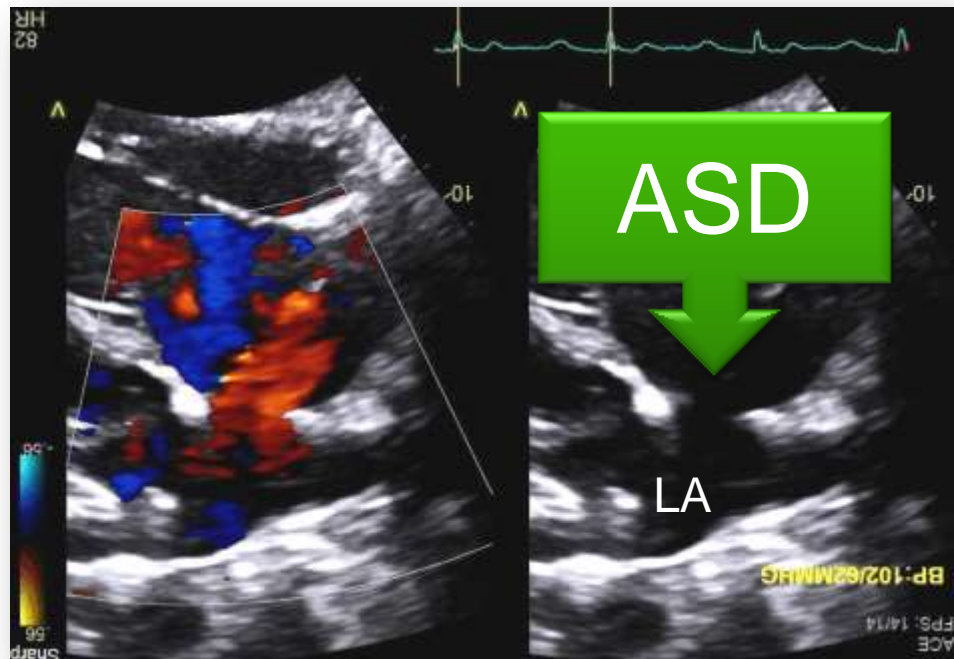
Asymptomatic – 18 Weeks Pregnant



TR Vel 2.6 m/sec

35-Year Old G2, P1 with Murmur

Asymptomatic – 18 Weeks Pregnant



What would you suggest?

1. OK to continue pregnancy
2. Device close
3. Not sure

ASD and Pregnancy

- 100 women – 243 pregnancies
- Unrepaired ASD vs repaired ASD – ↑ neonatal risk
- Unrepaired ASD vs general population
 - ↑ pre-eclampsia, SGA births, ↑ fetal mortality
- No excess maternal CV risk
- Paradoxical embolism risk, arrhythmia

What happened?

- Elsewhere – TTE, TEE, cath
 - Suggested termination
- Pregnancy progressed without difficulty
 - Normal fetal echocardiogram at 22 weeks
- Elective C-section (prior C-section) – healthy son
- Early ambulation, AC while in hospital, IV filter
- 5 months later – Robotic ASD closure and TV repair

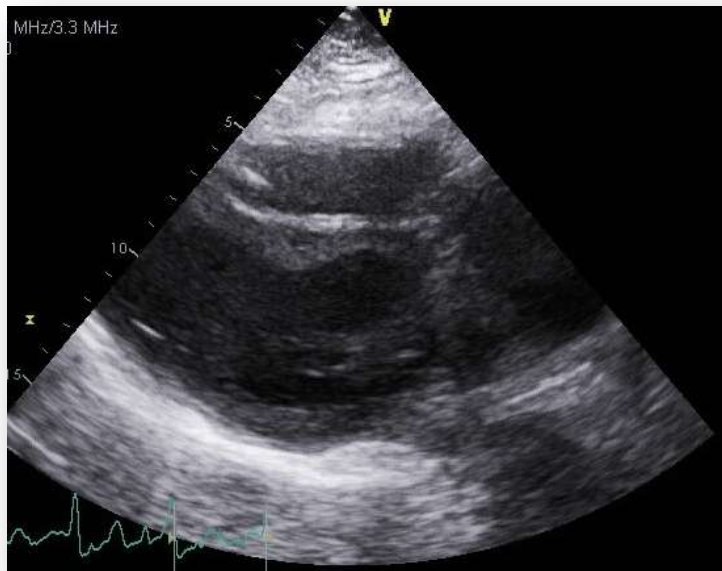


Congenital Valve Lesions

29-Year-Old Female with BAV

- 2000 – AVotomy, asc ao replacement 26 mm Hemashield supracoronary graft
- 2007 – AVR St. Jude Biocor 25-mm porcine bioprosthesis
- 2016 – AVR MG 17 mmHg (stable), no AR
 - Aortic root 40 mm (stable)
 - LVEF 69%
 - Aortic graft normal by TTE and CT
- OK to proceed with pregnancy?

30-Year-Old with BAV and Aortopathy Prior AVR and Aorta Replacement Preterm Labor at 32 Weeks

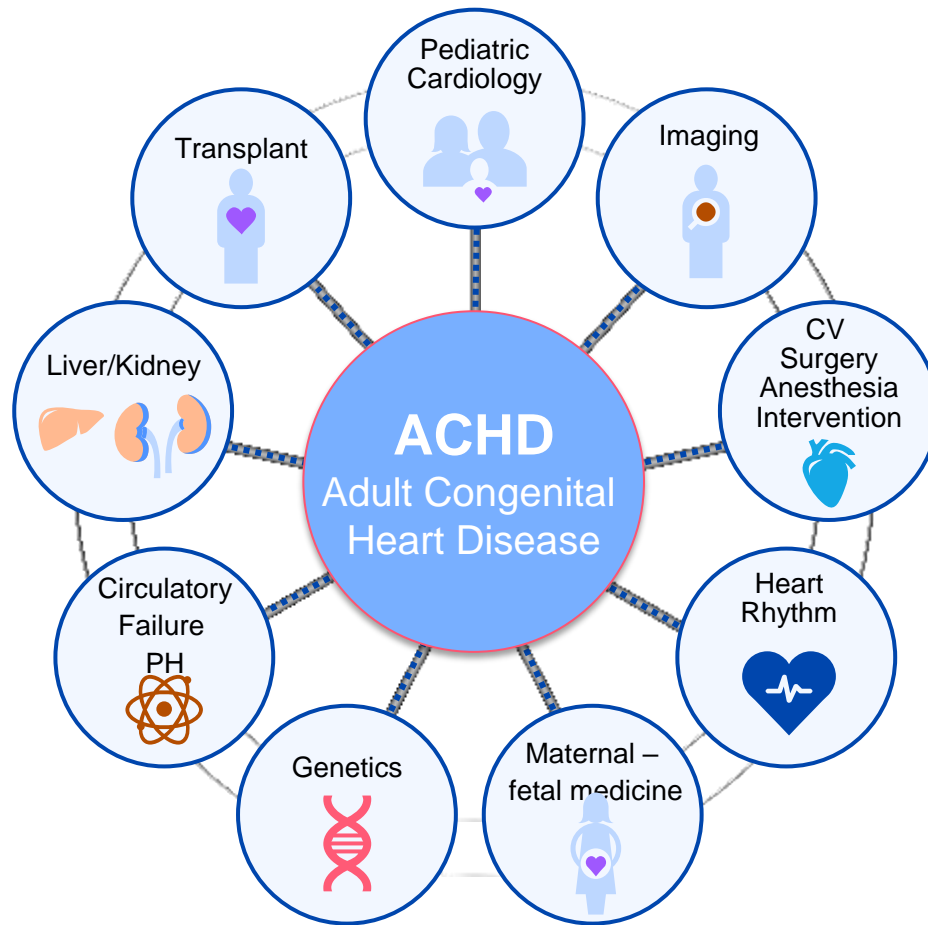


What next?

30-Year-Old – Preterm Labor at 32 Weeks

BAV with Aortopathy – Prior AVR and Aorta





Pregnancy in Simple CHD

Take Home Points

- Prepregnancy – all CHD pt should have evaluation and counseling by ACHD specialist
 - Confirm diagnosis and risk stratify
 - Multimodality imaging/exercise testing
- Pregnancy/delivery – individualized plan
 - Multidisciplinary care may be needed
- Expect the unexpected!





Thank you
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