Management of Simple Congenital Heart Disease and Pregnancy

Heidi M. Connolly, MD
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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
Outcome of Pregnancy in Women With Congenital Heart Disease

A Literature Review

Willem Drenthen, MD,* Petronella G. Pieper, MD, PhDr,* Jolien W. Roos-Hesselink, MD, PhDr;‡ Willem A. van Lottum, MD,* Adriana A. Voors, MD, PhDr,* Barbara J. M. Mulder, MD, PhDr,§ Arie P. J. van Dijk, MD, PhDr,‖ Hubert W. Vliegen, MD, PhDr,¶ Sing C. Yap, MD,‖ Philip Moons, PhDr, RN,† Tjark Ebels, MD, PhDr,† Dirk J. van Veldhuisen, MD, PhDr, FACC,*
on behalf of the ZAHARA Investigators

Groningen, Rotterdam, Amsterdam, Nijmegen, and Leiden, the Netherlands; and Leuven, Belgium
Outcome of pregnancy in patients with structural or ischaemic heart disease: results of a registry of the European Society of Cardiology

Jolien W. Roos-Hesselink1*, Titia P.E. Ruys1, Jörg I. Stein2, Ulf Thilén3, Gary D. Webb4, Koichiro Niwa5, Harald Kaemmerer6, Helmut Baumgartner7, Werner Budts8, Aldo P. Maggioni9, Luigi Tavazzi10, Nasser Taha11, Mark R. Johnson12, and Roger Hall13, on behalf of the ROPAC Investigators

1Department of Cardiology, Erasmus Medical Center, PO Box 2040, 3000 CA Rotterdam, The Netherlands; 2Department of Paediatric Cardiology, Innsbruck Medical University, Innsbruck, Austria; 3Department of Cardiology, Lund University Hospital, Lund, Sweden; 4Department of Cardiology, Cincinnati Children's Hospital, Cincinnati, OH, USA; 5Department of Cardiology, St Luke's International Hospital, Tokyo, Japan; 6Department of Cardiology, Deutsches Herzcentrum, München, Germany; 7Adult Congenital and Valvular Heart Center, Department of Cardiology, Münster, Germany; 8Department of Congenital and Structural Cardiology, University Hospitals, Belgium; 9ANMCO Research Center, Firenze, Italy; 10GVM Care&Research—E.S. Health Science Foundation—Maria Cecilia Hospital, Cotignola, Italy; 11Department of Cardiology, Al-Minya University Hospital, Cairo, Egypt; 12Academic Department of Obstetrics and Gynaecology, Imperial College School of Medicine, Chelsea and Westminster Hospital, 369 Fulham Road, London SW10 9NH, UK; and 13Norwich Medical School, University of East Anglia, Norwich, UK
Miscarriages  Completed pregnancies  Elective abortions

Drenthen et al: JACC 2007
Distribution of Complications During Pregnancy in Women with CHD

Drenthen et al: 2007
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 ↑ risk of maternal mortality or moderate ↑ 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

<table>
<thead>
<tr>
<th>Time of Pregnancy</th>
<th>Women, n</th>
<th>Pregnancies, n</th>
<th>Miscarriages, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before operation</td>
<td>59</td>
<td>140</td>
<td>27 (19)</td>
</tr>
<tr>
<td>After operation</td>
<td>27</td>
<td>62</td>
<td>21 (33)</td>
</tr>
<tr>
<td>Total</td>
<td>86</td>
<td>202</td>
<td>48</td>
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</tbody>
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CHD reported in 9 of 232 (3.9%) live-born children

Brown ML et al: JACC 2008
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

RV

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

Yap SC et al: BJOG 2009 (ZAHARA)
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

connolly.heidi@mayo.edu