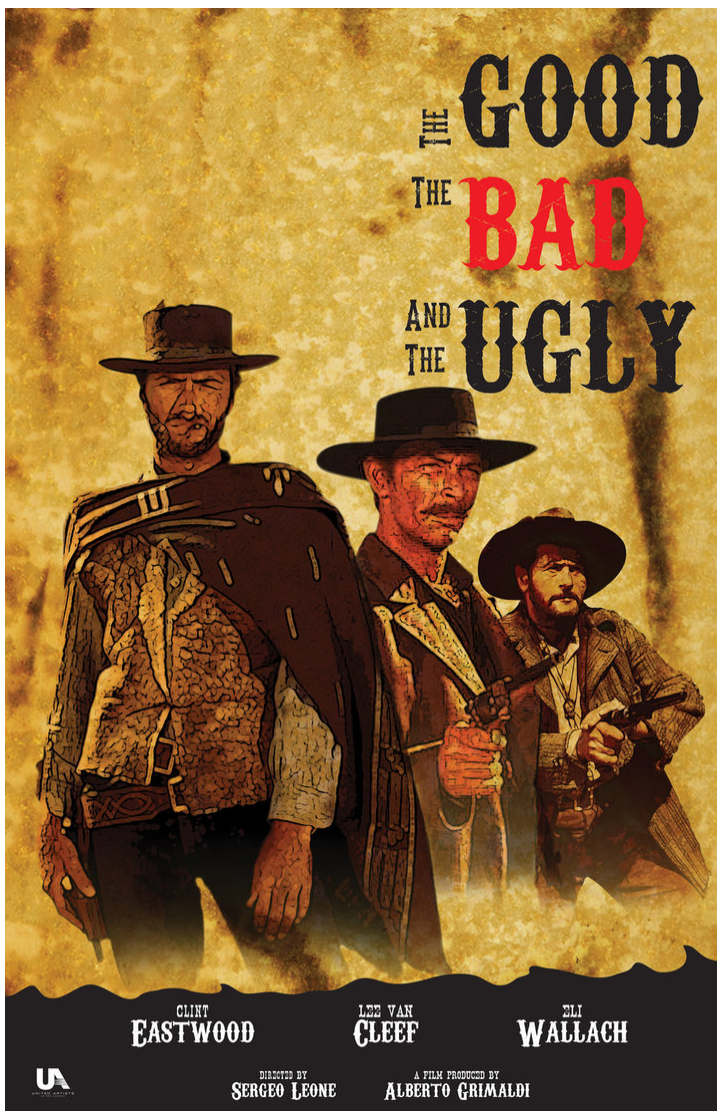


# Abortion in women with cardiac disease

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# OHeikinheimo conflicts of interest



- Employed by
  - Hospital district of Helsinki and Uusimaa
  - University of Helsinki
  - Finnish medical society Duodecim
- Lectures, Ad-board memberships at
  - Bayer AG
  - Exelgyn
  - Gedeon Richter
  - MSD
- Board member at
  - Suomen Lääketieteen säätiö
  - Oheikinheimo consulting
  - Femeda clinic

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  - Cardiac disease in fertile aged women
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- **European Society of Cardiology guidelines**
  - When the pregnancy is contraindicated?
    - What are the risks?
- **A woman with cardiac disease seeking abortion**
  - What to remember?
  - Proposed management scheme
- **Summary**

# Background

- The number of fertile aged women living with cardiac disease is increasing
  - **0.2-0.4% of all pregnancies complicated by cardiovascular disease in Western world** (Arif & Thorne, Medicine 2014)
    - Improved correction of congenital heart disease, better treatment, increasing maternal age, immigration
- **Mean age of first intercourse among women with cardiac disease similar to that of health women** (Vigl et al., Am J Cardiol 2010)
  - Are the contraceptive need covered?

# Contraception in women with cardiac disease

Vigl et al., Am J Cardiol, 2010

- **A survey of 536 women (median age 29y) with congenital heart disease from Germany**
  - High rate of unplanned pregnancies (1/10)
  - 20% of the women used contraceptive method contraindicated in their condition
  - 28% of women were not using contraception despite being sexually active
  - No counseling
    - In 43% concerning contraception
    - In 48% concerning pregnancy-related risks
  - **Timely and competent counseling on contraception needed for women living with cardiac disease**

# **Contraception in women with cardiac disease**

Roos-Hesselink et al., Contraception and cardiovascular disease  
Eur J Heart 2015

- **Cardiovascular disease might increase the risk**
  - Thrombosis
  - Endocarditis
- **Contraceptive counseling**
  - The possible risks of pregnancy to mother and child
  - Risks of contraception
  - Failure rates
  - Non-contraceptive benefits
  - Availability
  - Individual preferences
  - Protection against infection
  - Costs

# What kind of heart disease do pregnant women have?

Hink & Bolte, Pregnancy Hypertension 2015

- All pregnant women with heart disease followed-up in 2000-2011 at University Medical Center Amsterdam
  - **122 women with 160 pregnancies**
  - **Type of heart disease**
    - Congenital heart disease in 53%
    - Arrhythmia in 16%
  - **NYHA-classification**
    - NYHA I-II 93%
    - NYHA III-IV 7%
  - **Heart failure in**
    - NYHA I-II 7%
    - NYHA III-IV 38%
    - Maternal death 2%



[https://www.escardio.org/static\\_file/Escardio/Guidelines/publications/PREGN%20Guidelines-Pregnancy-FT.pdf](https://www.escardio.org/static_file/Escardio/Guidelines/publications/PREGN%20Guidelines-Pregnancy-FT.pdf)



European Heart Journal (2011) **32**, 3147–3197  
doi:10.1093/eurheartj/ehr218

**ESC GUIDELINES**



## **ESC Guidelines on the management of cardiovascular diseases during pregnancy**

### **The Task Force on the Management of Cardiovascular Diseases during Pregnancy of the European Society of Cardiology (ESC)**

Endorsed by the European Society of Gynecology (ESG), the Association for European Paediatric Cardiology (AEPC), and the German Society for Gender Medicine (DGesGM)

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# Modified WHO classification of cardiovascular risks - principles

Risk class	Risk of pregnancy by medical condition
I	No detectable increased risk of maternal mortality and no/mild increase in morbidity.
II	Small increased risk of maternal mortality or moderate increase in morbidity.
III	Significantly increased risk of maternal mortality or severe morbidity. Expert counselling required. If pregnancy is decided upon, intensive specialist cardiac and obstetric monitoring needed throughout pregnancy, childbirth, and the puerperium.
IV	Extremely high risk of maternal mortality or severe morbidity; pregnancy contraindicated. If pregnancy occurs termination should be discussed. If pregnancy continues, care as for class III.

# Modified WHO classification of cardiovascular risks – WHO I

## Conditions in which pregnancy risk is WHO I

- Uncomplicated, small or mild
  - pulmonary stenosis
  - patent ductus arteriosus
  - mitral valve prolapse
- Successfully repaired simple lesions (atrial or ventricular septal defect, patent ductus arteriosus, anomalous pulmonary venous drainage).
- Atrial or ventricular ectopic beats, isolated

# Modified WHO classification of cardiovascular risks – WHO II-III

Conditions in which pregnancy risk is WHO II or III
<b>WHO II</b> (if otherwise well and uncomplicated)
• Unoperated atrial or ventricular septal defect
• Repaired tetralogy of Fallot
• Most arrhythmias
<b>WHO II-III</b> (depending on individual)
• Mild left ventricular impairment
• Hypertrophic cardiomyopathy
• Native or tissue valvular heart disease not considered WHO I or IV
• Marfan syndrome without aortic dilatation
• Aorta <45 mm in aortic disease associated with bicuspid aortic valve
• Repaired coarctation

# Modified WHO classification of cardiovascular risks – WHO III

<b><i>WHO III</i></b>
• Mechanical valve
• Systemic right ventricle
• Fontan circulation
• Cyanotic heart disease (unrepaired)
• Other complex congenital heart disease
• Aortic dilatation 40–45 mm in Marfan syndrome • Aortic dilatation 45–50 mm in aortic disease associated with bicuspid aortic valve

# Stratification

## High risk states - contraindications for pregnancy

### Conditions in which pregnancy risk is WHO IV (pregnancy contraindicated)

- Pulmonary arterial hypertension of any cause.
- Severe systemic ventricular dysfunction (LVEF < 30%, NYHA III-IV).
- Previous peripartum cardiomyopathy with any residual impairment of left ventricular function.
- Severe mitral stenosis, severe symptomatic aortic stenosis.
- Marfan syndrome with aorta dilated > 45 mm.
- Aortic dilatation > 50 mm in aortic disease associated with bicuspid aortic valve.
- Native severe coarctation.

# Management of the high-risk (i.e. WHO IV) cardiac conditions

- If pregnancy occurs, termination should be offered in a tertiary center with experienced unit!
- Also termination carries a risk!



# What are the risks to the woman?

Condition	Maternal risks
<b>Pulmonary hypertension</b>	<b>High maternal mortality</b> <ul style="list-style-type: none"><li>• 30-50% in older series, 17-33% in newer</li><li>• During III trimester / post-partum period</li><li>• Cardiovascular collapse following even minor hemodynamic / volume changes IN PATIENTS WITH NO OR LITTLE DISABILITY BEFORE</li></ul>
<b>History of peripartum cardiomyopathy</b>	<b>Mortality rate up to 15%</b> <ul style="list-style-type: none"><li>• Deterioration up to 50% despite optimal therapy</li></ul> Recurrence risk in subsequent pregnancy 30-50% especially if EF not normalized

# Congenital Heart Diseases: Specific maternal high risk conditions WHO (III)-IV

Condition	Expected outcome
Pulmonary hypertension	Neonatal survival 87-89%. ( <i>Bedard, EHJ 2009</i> )
Eisenmenger syndrome	Maternal mortality of 20-50%. Life birth 12% if O <sub>2</sub> saturation < 85%. ( <i>Presbitero, Circ 1994</i> )
Cyanotic HD without PH	Depends on maternal oxygen saturation. Life birth 12% if O <sub>2</sub> saturation < 85%. ( <i>Presbitero, Circ 1994</i> )
Severe LVOTO	Should be treated before pregnancy. If not, discourage pregnancy.



# Which cardiac patients should be referred to hospital for an abortion?

Soc Fam Plan, Contraception 2012

- **Congenital**
  - Cyanotic disease, right/left ventricular dilatation, uncontrolled tachyarrhythmia
- **Coronary disease**
  - History of AMI, treatment angina
- **Cardiomyopathy**
  - Dilated, hypertrophic, history of peripartum CMP
- **Valvular disease**
  - Significant aortic/mitral stenosis
  - Aortic/mitral regurgitation with LV dilatation

# **Abortion in women with significant cardiac disease**

- **Identify the women with cardiovascular disease**
- **Consult a cardiologist**
  - Not all cardiac diseases are alike
    - European Society of Cardiology guidelines
- **Consult an anesthesiologist experienced in cardiac anesthesia**
  - Follow selected patients (pulmonary hypertension!) long enough (at least overnight)!
- **Medical vs. surgical abortion**
  - Individual decision

# Medical vs. surgical abortion in women with significant cardiac disease

- No published literature!
- **Medical abortion**
  - **CAVE in women with anticoagulation**
    - MIFE and/or MISO
      - No known effects on hemostasis
      - No interactions with commonly used anticoagulants
    - Use in hospital setting
- **Surgical abortion**
  - Might be hemodynamically more controllable in some situations

# Additional antibiotics?

- Routine prophylactic antibiotics recommended before surgical abortion by several guidelines in all cases
  - UK, WHO, Finnish
- More variable recommendations concerning concerning medical abortion...
- Cardiologic indications for prophylactic antibiotics
  - **If artificial material in heart – give antibiotics**

# Woman with uncertain history of cardiac disease seeking abortion

- **Cardiologists advice**
  - **Absence of serious diagnosis, no symptoms, normal performance**
    - No need for investigations!
  - **Patient with regular cardiac follow-up - consult a cardiologists**
    - Refer selected cases to unit experienced in treating pregnant women with cardiac disease



# Summary - abortion in women with cardiac disease

- **Recognize the women with a history of / current cardiac disease**
  - Is cardiology consultation needed?
  - Is referral to a special unit needed?
- **Make necessary preparations, such as**
  - Anticoagulant medication, antibiotic prophylaxis etc.
- **Choose abortion method considering among (among many things) the medical factors above**
- **Start effective and suitable contraception after the abortion**

# Thank you!

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