PROGRAMME BOOK

The 12th Bali Cardiology Update

"Improving Knowledge on Latest Cardiovascular Disease: Translating Guideline into Real-world Experience"

23-26 August 2023 | The Westin Nusa Dua, Bali
CHAIRMAN FOREWORD

As the COVID-19 pandemic has been resolved, we are glad to welcome our colleagues to visit the paradise island, Bali, while joining our annual meeting, the 12th Bali Cardiology update that will be held offline. We organise workshops, symposiums, plenary talks, lectures with international and national keynote speakers, and interactive gatherings from throughout regions to discuss cutting-edge discoveries to advance the profession and medications specializing in cardiovascular disease managements, providing an absolutely superb framework for professionals in cardiovascular health, researchers, scientists, healthcare specialists, academicians, and individuals with interest in cardiology. This is your best opportunity to network with the most individuals from hospitals, academic institutions, heart associations, and research facilities because there are people from all over the world interested in finding a few solutions in the field of cardiology. The opportunity to network with colleagues and hear from renowned cardiologists and cardiovascular researchers at this cardiology summit is unmatched.

Agung Pradnyana Suwiry
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<td>Suspicious Leg Pain: Is It Vascular or Musculoskeletal Problem?</td>
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<td><strong>PULMONARY HYPERTENSION AND CONGENITAL HEART DISEASE</strong></td>
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<td>Moderator: dr. Cyndiana Sinardja, Sp.JP</td>
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<td>Acyanotic Congenital Lesion with Pulmonary Hypertension: Is There Still A Hope?</td>
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<td>14.55-15.10</td>
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<td>Acyanotic congenital heart disease in pregnancy: A clinical dilemma</td>
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<td>Speaker: dr. Made Satria Yudha Dewangga, Sp.JP(K)</td>
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Abstract

Acyanotic Congenital Heart Disease with Pregnancy: A Clinical Dilemma

Made Satria Yudha Dewangga, MD, FIHA

The majority of acyanotic ACHD patients tolerate pregnancy well, although women with complex cyanotic CHD and severe obstructive lesion have higher risks. The risk of pregnancy depends on the underlying heart defect as well as on additional factors such as ventricular function, functional class, and presence of cyanosis. Obstetric complications such as (pre-) eclampsia are more often encountered. Offspring complications, including miscarriage, prematurity, and neonatal death, are increased. Risk estimation should be individualized and based on the modified WHO (mWHO) classification. Maternal mortality is 0.1% and heart failure complicates pregnancy in 11% of women with heart disease, with pulmonary arterial hypertension (PAH) being associated with the highest risks. Acyanotic heart defect such as uncorrected atrial septal defect (ASD), ventricular septal defect (VSD), patent ductus arteriosus (PDA) and atroventricular septal defect (AVSD) without severe heart failure symptoms and PAH mostly be in mWHO class II risk classification. Nevertheless mortality remains high in women with acyanotic heart defects with PAH (16–30% maternal mortality). Therefore, the recommendation to avoid pregnancy remains and termination should be discussed when pregnancy occurred. These patients should be managed by a multidisciplinary team, with a PH expert included, in an expert centre for pregnancy and cardiac disease. The most common causes of death in these patients are pulmonary hypertensive crisis, pulmonary thrombosis, and right HF that commonly happens in puerperium and early post-partum. Any forms of pulmonary vascular disease can worsen during pregnancy and particularly in Eisenmenger syndrome. A multidisciplinary team is required to care for the pregnant PH patient. This should be tailored to the patient, but will require very regular and strict follow-up.

Keywords: Acyanotic congenital heart disease, pregnancy
Acyanotic Congenital Heart Disease with Pregnancy: A Clinical Dilemma
Made Batista Yudho Dewanggo, MD, FNA

Disclosure
I have no financial disclosure or conflicts of interest with the presented material in this presentation

Acyanotic CHD with Pregnancy: Epidemiology and Background
- Recent advancement of CHD treatment → increased survival until reproductive ages
- Roughly 70% of CVD with pregnancy is congenital lesion, 5% has pulmonary hypertension (PH)
- Mortality, pregnancy is well tolerated
- Higher risks in lower functional class, ventricular function, and presence of cyanosis
- Obstetric and offspring complications *associated in PH, cyanosis and complex diseases

CHD with Pregnancy Registry in Prof Ngoerah Hospital
- 49 patients of pregnant patient with cardiovascular disease
- 2022-2023: 22/49 (45%) CVD in pregnancy is congenital heart disease
- 37% of all CHD-pregnancy is Atrial Septal Defect (ASD)
- 45% is mWHO class IV due to pulmonary arterial hypertension (no cath data, only echo)
- 50% delivery method by caesarean section, 50% per vaginam

The Problems/Dilemma We Face Today...
- Care of CHD with pregnancy should be multidisciplinary and expert facilities → limited
- Many acyanotic CHD goes undetected and unrepaired → until it’s too late (RHD and Eisenmenger syndrome)
- Residual post-corrective problems
- Many cardiovascular medications is contraindicated during pregnancy (ACE-I, some PH treatment, anticoagulants)
- Corrective procedure during pregnancy → is it required and safe?
mWHO Pregnancy with CVD Classification

Hemodynamic Changes during Pregnancy, Peripartum, and Postpartum

- Increased HR
- Tachyarrhythmia → precipitate decompensation in uncorrected CHD
- Obstetric complications (pre-eclampsia, hypertension) → hemodynamic load and maladaptation → complications
- Fluid retention and hypercoagulability

Interplay between CHD and Pregnancy

Acyanotic Left to Right Lesions with Pregnancy

- ASD, VSD, PDA and AVSD
- Well tolerated (without PAH)
- Hemodynamically significant (symptomatic, heart failure) → closed before pregnancy
- Corrected → look for residual lesion
- Significant residual lesion, uncorrected lesion → may need heart failure medical treatment
- Intervention during pregnancy (if needed) → risk of radiation exposure

Case Illustration (Zero fluoroscopy ASD closure)

- 1st case of successful ‘zero fluoroscopy’ radiation free ASD closure in 26 yo primigravida in large secundum ASD with PH in NCHRK, Indonesia
- Raising hopes of ASD correction with zero radiation → beneficial in pregnant patient

Essentially, this method is expanding throughout Indonesia...
RVOT Obstruction Lesion with Pregnancy

- Generally well tolerated
- Associated with an increased risk of premature labour (14%), premature delivery (15%) and intrauterine growth restriction (10%)
- Severe symptomatic PS unresponsive to medical treatment → balloon valvuloplasty should be considered

Balloon pulmonary valvuloplasty

- Balloon valvuloplasty 0.018" wire
- RV-PA gradient (peak-to-peak): 197.8 ± 84 mmHg
- Widened orifice of pulmonary valve: stenosis increased to 16.5%
- Post-RV-PA saturation 89% (87% before)
- psa: 52 mmHg, PPG = 3 mm

Follow up Post BPV Procedure

- Continue propranolol 10 mg t.i.d (due to residual mild valvar PS)
- Increase EAM/T
- Regular rehabilitation program
- SpO2 increased to 98%
- Patient got pregnant with uneventful delivery (accelerated phase II)

LVOT Obstruction Lesion with Pregnancy

- Severe symptomatic LVOT → pregnancy is contraindicated → balloon aortic valvuloplasty (BAV) is required
- Asymptomatic with good functional capacity → pregnancy is well tolerated (mWHO class III)
- Aortic diameter >55 mm → surgery

Case Illustration

- Female, 21 y.o, married
- Fatigue, breathlessness during exercise
- BP 96/70 mmHg, N 98 bpm, SpO2 98%
- grade IV ejection systolic murmur at LULR
- Echo: Severe valvar PS with RV-PA gradient 52 mmHg, PPG 3 mm
- bidirectional shunt
- Plan for pregnancy → mWHO class III
- (risk for mortality and mortality 19-27%)
- Balloon valvuloplasty first!

CHD-related Pulmonary Arterial Hypertension (PAH) with Pregnancy

- Mean PAP > 25 mmHg, PVR >3 W.U., Pulm artery wedge pressure (PAWP) <= 15 mmHg
- Mortality remains high (16-30%) due to PH crisis, PA thrombosis and severe right HF
- Avoid pregnancy; consider termination if pregnancy occurred
- Highest risk in puerperium and early post-partum
- Fetal risk: preterm delivery, fetal hypoxemia
Management of PAH during Pregnancy:
- Clinical diagnosis; Echo, right heart cath if needed.
- Genetic counseling.
- Follow-up of RV function assessment, functional class, oxygen saturation.
- Diuretics in congestive heart failure, anticoagulants.
- Delivery method decided by heart-pregnancy team; ICU post-partum.
- Specific Pulmonary vasodilator:
  - PAH Inhibitor: Sitaxentan.
  - Bosentan - associated with endoarthritis.
  - CBs in severe patients.

Eisenmenger Syndrome with Pregnancy:
- PAH → right to left shunt → cyanosis and paradoxical embolism.
- High maternal mortality (20-50%), high fetal risk.
- Avoid pregnancy, consider termination.
- Management: PAH Therapy; beware of bleeding tendency, thrombocytopenia; prostanoids if symptom-refractory PH.

Management: General Principles

Step 1-2 Management Pregnancy with CHD

Step 3-4 Management Pregnancy with CHD

CONCLUSIONS
- Pregnancy is generally tolerated well by most patients with CHD.
- Associated with increased risk of death, cardiac, obstetric complications (Caesarean section) and fetal complications (preterm labour, low birth weight and fetal CHD).
- Specialist care by a multidisciplinary team.
- Management steps including: risk assessment, risk estimation, informed decision and management planning.
Thank You!

Every cloud has a silver lining. Difficult times lead to better days.

Be Optimistic.

Difficult times are like clouds that pass overhead and block the sun.
Head of PERNI Ball
Sp.JP.HL (K) F.IHA
Dr. I Kadek Suciwi Sukma Darmawan M. Biomed,
Chairman of the 12th Ball Cardiology Update 2023
Sp.JP. F.IHA, F.PAEC
Dr. Anggun Pradnyana Suwaryo M. Biomed,
Participant 1 SHP: Speaker B SHP: Committee 1 SHP
Participant 2 SHP: Speaker B SHP: Committee 2 SHP
SP. PPMI No. 155 DPW/PPMI/SKH/KS/8/2022
SHP 101 No. 032 VII/2023/SHP/101-BALI
23rd - 26th August 2023, The Westin Nusa Dua Ball
"Disease Translating Guideline into Real-World Experience"
Symposium Improving Knowledge on Latest Cardiowascular
in the 12th Ball Cardiology Update 2023

SPEAKER

Dr. Made Satia Rubia Dewangga Sp.JP. K. Ped.P. J.B (K), F.IHA

This certificate is proudly presented to

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