



Cardiac disease in pregnancy

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o Heart Disease

- o Leading cause of death (1/3 -25 to 44 years)
- o Complicates 1% of pregnancies
- o Account for 50% of indirect maternal death.

o Types of heart diseases

- o RHD
- o CHD
- o Hypertensive HD
- o Less common _ CAD, cor-pulmonale etc.

○ **Physiological changes in pregnancy.**

- Hemodynamic changes have profound effect on HD
- CHF can develop
 - Early pregnancy
 - Early 3rd trimester
 - Peripartum – Labor/ delivery
- Increase during pregnancy:
 - CO, SV, HR, BV
- Decrease during pregnancy
 - SVR, PVR, MAP, colloid osmotic pressure
- $\uparrow\downarrow \rightarrow$ BP- systolic, diastolic, left Ventricular function

- o Prognosis of HD in pregnancy depends:
 - o Functional cardiac activity
 - o Presence of other complications
 - o Quality of care
 - o Psychological and socioeconomic factors

◦ Diagnosis

- Is difficult.
- Not indicative of disease:
 - Systolic murmur less than grade III.
 - Accentuation of respiratory effort.
 - Edema of lower extremity

o Indicative of heart diseases:

- o Progressive dyspnea
- o Orthopnea, PND, Hemoptysis, chest pain, syncope
- o Distended neck Veins
- o Any diastolic murmur
- o Systolic m $>$ III/VI, clubbing, cyanosis,
- o Criteria for pulmonary hypertension,
- o Cardiomegaly, persistent arrhythmia

- Diagnostic studies:

- Most are non invasive

- Provide necessary information

- Can safely be conducted in pregnancy

- Two types:

- Conventional – ECG, ECHO, CXR

- Invasive – Done on indication

Eg. Cardiac catheterization

Functional cardiac activity

- o **Class I – Un compromised**

- o No limitation of activity
- o No angina symptoms
- o No sign of insufficiency

o **Class II – slightly compromised**

- o Slight limitation of physical activity
- o Normal at rest
- o Excessive exhaustion, dyspnea, palpitation and angina to ordinary physical activity

o **Class III – Markedly compromised**

- o Marked limitation of physical activity
- o Less than ordinary activity cause discomfort
- o Comfortable at rest

o **Class IV - Severely compromised**

- o Unable to do any physical activity without discomfort
- o Symptoms of cardiac insufficiency
- o Angina at rest

Preconception counseling

- o Maternal mortality and functional classification
 - o Surgical correction of life threatening cardiac disease
 - o Change warfarin to heparin
 - o Common cardiac cause of maternal death:
 - o Pulmonary complications
 - o Cardiomyopathy
 - o Infective endocarditis
 - o CAD
 - o Sudden arrhythmias

Management

General

- o Individualization in assuring optimal outcome.
- o Team approach
- o Minimize cardiovascular changes poorly tolerated by the patient

Poor prognostic signs

- o Poor functional class
- o Myocardial dysfunction
- o Left ventricular obstructive lesions
- o Prior cardiac events

NYHA - class I and II

- o Pregnancy and puerperium uneventful
- o MS in 1/3 develop CHF
- o Prevention and Early recognition of HF
- o Infection – URTI, pneumonia, vaccination
- o Cigarette smoking

- o Illicite Drug
- o Cocaine, Amphétamine
- o Iv drugs – infective endocarditis
- o Anemia - Treat
- o Labor and delivery-Vaginal

o C/S – Obstetric indications

- o Position – semi- recumbent with lateral tilt
- o V/S follow up – PR >100, RR >24
- o ICU care- if any decomposition
- o Delivery may not alter maternal condition
- o Maternal and fetal condition must be considered in deciding to hasten delivery
- o Analgesia / Anesthesia

- Hemodynamic status and type of lesion eg.
 - MS with pulmonary edema
 - Diuresis, Digitalis, B-blocker
 - AS and hypotension
 - Empirical treatment could be hazardous.

o Puerperium:

- o Possibility of PP cardiac decompensation
- o Due attention to PPH, Anemia, infection
- o Precipitates
- o BTL – Delay till a febrile, no anemia
- o Other contraception – specific lesion

- **NYHA Class III/IV**

- Undertake pregnancy or not
- Discuss risks and cooperation with planned care
- Termination – first trimester
- Continue pregnancy
 - prolonged hospitalization
 - Prolonged bed rest.

- o Factors considered indication for c/s
 - o Specific lesion
 - o Maternal condition
 - o Physical facility
 - o Availability and experience of anesthetic support