

# 19. Pregnancy & Female Heart Disease

## 1. Pregnancy

Blood volume	> 50%.
Heart Rate	> 15%, 12 bpm
Increased Stroke Volume	> 80 cc
LV End Diastolic Volume	> 70-80 cc
Blood Pressure	< 10 mmHg

Plasma volume increases more than erythrocyte mass, which can lead to physiologic anemia. An estrogen stimulation of the renin-angiotensin system results in sodium and water retention

Early ejection flow systolic murmur < grade 3/6 left sternal border is heard in 90% of pregnant

Heparin for the first 12 weeks, followed by warfarin sodium (Coumadin) anticoagulation. The fetal outcome has been better with bioprosthetic valves

Mitral stenosis is the most common chronic rheumatic valvular lesion in pregnancy

## 2. Pre-eclampsia

- Toxemia of Pregnancy, also called Pregnancy Induced Hypertension (PIH)
- Hypertension occurring in pregnancy, typically accompanied by edema and proteinuria.
- Most often after the 20th week of pregnancy
- Affecting at least 5-8% of all pregnancies
- Associated with HELLP: Hemolysis, Elevated Liver, Low Platelet.
- Uric Acid level > 6.0 used as an indicator of pre-eclampsia but has been found to lack sensitivity and specificity as diagnostic tool

### Laboratory for eclampsia

- Hemoglobin level
- Hematocrit
- Platelet counts
- Urine protein collection (12 or 24 h)
- Serum creatinine level
- Serum uric acid level
- Serum transaminase levels
- Serum albumin level
- Lactic acid dehydrogenase level
- Peripheral blood smear
- Coagulation profile

### Treatment:

1. Delivery ultimate treatment for preeclampsia
2. 6-g loading magnesium sulfate followed a continuous at a rate of 2 g /hr

3. Hydralazine and labetalol most commonly with severe preeclampsia, Nifedipine potential alternatives
4. Diastolic blood pressure of 105 to 110 should receive medication.
5. Recurrence rate may be as high as 40 percent in future pregnancies
6. Low-dose aspirin therapy and daily calcium supplementation in certain high-risk women.

## 3. Peripartum Cardiomyopathy

1. Peripartum Cardiomyopathy 1 in every 1,300 to 4,000 deliveries
2. Risks: obesity, history of cardiac disorders (myocarditis), smoking, alcoholism, multiple pregnancy, being African-American, malnourished.
3. 50% of women presenting with this disorder will normalize their ejection fraction
4. Subsequent pregnancy, there was an approximate 21% risk of the development of heart failure

## 4. Pregnancy Exacerbations of Existing Disease.

1. Regurgitant Valvular Disease is well tolerated because systematic vascular resistance FALLS with pregnancy.
2. Stenotic lesion do worse, especially mitral stenosis
3. Mitral valve prolapse and HOCM-Hypertrophic Cardiomyopathy with outflow obstructions are not worsened by pregnancy
4. Pulmonary hypertension, moderate to severe pregnancy should be avoided

## Menopausal Estrogen Replacement

1. Increases Thrombosis
  - Myocardial infarcts, strokes, DVT's, ischemic bowel disease, pulmonary emboli
2. Gallbladder Disease
3. Dementia
4. Breast Cancer
5. Uterine Cancer
6. Worsen stress incontinence

## Atherosclerosis in Women

1. Women 10 years older than men for First MI
2. Incidence of CHD is equal to men about 10 years post menopausal