CARDIAC DISEASES WITH PREGNANCY

CARDIAC DISEASES WITH PREGNANCY

- Cardiac disease may be associated with 0.5-1% of pregnancies. Rheumatic heart valve diseases account for most of cases in the developing countries. In developed countries, there is more preponderance of congenital heart disease rather than complications of rheumatic fever.

CARDIAC DISEASES WITH PREGNANCY

- **Cardiac Output (C.O.) changes during pregnancy:**
- During pregnancy the C.O. increases gradually from the first trimester reaching a peak of 40% above the non pregnant value by 20 weeks, to remain constant until full term. Such increase continues slowly to term. Causes of an increased C.O. during pregnancy include:

  1- Increased stroke volume (40-50% above the non-pregnant state)

  2- Increase of pulse rate (+10 or 12 beat/min).

CARDIAC DISEASES WITH PREGNANCY

- **CLINICAL EFFECTS:**
- **Heart rate and Pulse changes:**
  - Increase heart rate (tachycardia)
  - Obvious capillary pulsation (nail-bed).
  - Water-hammer pulse (increased systolic diastolic difference).
  - Occasional extrasystoles.

CARDIAC DISEASES WITH PREGNANCY

- **Apex beat variations:**
  - Elevation to the 4th intercostal space, one inch lateral to normal position.
  - Soft systolic murmur (heard by the stethoscope).
  - Split first sound (earlier closure of mitral valve).
  - Appearance of a loud third sound

CARDIAC DISEASES WITH PREGNANCY

- **E.C.G. changes:**
  - Left axis deviation, deep Q-wave in lead III.
  - Flattening of T wave and inverted ST segment in V2-V4

CARDIAC DISEASES WITH PREGNANCY

- **ASSESSMENT OF PATIENT'S CARDIAC CONDITION:**

  The New-York Heart-Association Grading:

- ***Class I:*** Organic heart disease without limitation of house hold activity
- ***Class II:*** Limitation of activity (dyspnea and chest pain) at ordinary house-hold duties.e.g. at the end of climbing one set of stairs.
- ***Class III:*** Limitation of activity at less than ordinary house-hold duties e.g. during climbing one set of stairs.
- ***Class IV:*** Dyspnea at rest .

CARDIAC DISEASES WITH PREGNANCY

- **Other Factors affecting maternal cardiac condition:**
- Associated anaemia with pregnancy
- Infections: as urinary tract infections and careous teecth (subacute cacterial endocarditis).
- Associated cardiomyopathy and tight mitral stenosis.
- Hypertensive disorders in pregnancy, and thyrotoxicosis.
- History of recent reactivation of rheumatic fever .

CARDIAC DISEASES WITH PREGNANCY

- **MANAGEMENT DURING PREGNANCY (ANC)**
  - ***Frequency:*** More frequent than usual, attended by both obstetricians and cardiologists.
  - ***Examination:***
    - Obstetric examination (maternal and fetal)
    - Cardiac assessment and early detection of heart failure.
    - Recognition of risk factors (anemia, infection, hypertension)

CARDIAC DISEASES WITH PREGNANCY

Advice:

- Bed rest; 9 hours by night, 2 hours by day.
- Guard against excessive weight gain and risk factors.
- Dental care and use of an umbrella of antibiotics when there is tooth extraction.

CARDIAC DISEASES WITH PREGNANCY

- ***Indications for Digitalis*:**

- If already on this regimen before pregnancy has started.
- In cases of Class II or more or impending heart failure.

Hospitalization:

- Cases of Class II at 24 -32 weeks of pregnancy and one week before expected delivery date.
- Cases of Class III and IV are admitted earlier and for longer periods.

CARDIAC DISEASES WITH PREGNANCY

- **MANAGEMENT DURING LABOUR**
- *Proper pain relief* to minimize anexiety and tachycardia. Epidural anaesthesia may sometimes cause systemic hypotension, so it contraindicated in cases with right-left shunt.
- *Straining is prohibited*, to minimize venous return and decrease heart rate.

CARDIAC DISEASES WITH PREGNANCY

- Delivery in the *Semi-sitting position* with adequate oxygenation.
- *Digitalis* in cases at high risk for heart failure.
- *Shorten the second stage* by low-forceps when necessary.
- *Caesarean section* is done when obstetrically indicated.
- *Antibiotic cover* to guard against SBE.

CARDIAC DISEASES WITH PREGNANCY

- **MANAGEMENT IN THE PUERPERIUM**
- There is more liability to heart failure due to increased venous return (reduced obstruction on the inferior vena cava, and mobilization of extracellular fluid).
- Monitoring of patient for at least two weeks (when COP return to pre-pregnant level).

CARDIAC DISEASES WITH PREGNANCY

- Breast-feeding is contraindicated ONLY if there is heart failure.
- Proper selection of a method of contraception, for adequate pregnancy spacing.

CARDIAC DISEASES WITH PREGNANCY

- **INDUCTION OF ABORTION**
- In the past, first trimester termination of pregnnacy was indicated in cases of Class III and IV heart classification, history of failure in a previous pregnancy, recent history of recrudescence of rheumatic fever, and in cases of right- left shunt.

CARDIAC DISEASES WITH PREGNANCY

- Nowadays it is ***rarely indicated*** after introduction of recent surgical treatment of heart lesions, and availability of proper medical control of chronic cases. Apart from some cases with pulmonary hypertension and right to left shunt, termination of pregnancy should not be encouraged in cardiac cases.


THANK YOU