Medical Complications of Pregnancy
Systems

- Cardiovascular
- Pulmonary
- Endocrine

- Gastrointestinal
- Urologic
- Neurologic
Cardiovascular System

- **Physiologic anemia**
  - 3:1 increase of plasma volume:RBC mass
  - Treat <10 g/dl

- **Iron deficiency anemia (90%)**
  - Ferrous sulfate 325 mg BID

- **Megaloblastic anemia**
  - Folic acid 1 mg daily, rarely B12
Cardiovascular System

Hemoglobinopathies

- Sickle cell trait (HbSA), Sickle cell β-thalassemia (HbSβthal)
- Sickle cell disease (HbSS), Sickle cell hemoglobin C (HbSC)
Cardiovascular system
physiologic changes

- Cardiac output increases ~50%
  - Peak second trimester
    - Stroke volume
    - Heart rate
  - Physiologic systolic murmur

- Blood pressure decreases through second trimester, normalizes at term
Cardiovascular system

- Rheumatic Heart Disease (50%)
  - Mitral stenosis

- Congenital Heart Disease
  - New York Heart Association Functional Classification (I-IV)
  - Correct anemia, treat infections, decrease physical activity, and ensure proper weight gain

- Risk low birth weight, prematurity, congenital heart disease
Cardiovascular system

- Cardiac arrhythmias
  - Paroxysmal atrial tachycardia
  - Atrial fibrillation and atrial flutter
- Peripartum and postpartum cardiomyopathy (30, Af Am, multiparous, twins/preeclampsia)
Thromboembolic disorders

- Superficial thrombophlebitis
  - Erythema and tenderness, usually calves

- Deep venous thrombosis
  - Acute erythema, tenderness, edema
  - Venous doppler, *venography
  - Anticoagulation
  - Risk pulmonary embolism
Thromboembolic disorders

- Pulmonary embolism
  - Chest pain, dyspnea, palpitations, tachypnea, tachycardia
  - Maternal mortality 80% if untreated
  - 70% from DVT
  - ABG, V-Q scan, pulmonary angiography

- Septic pelvic thrombophlebitis
  - Infection and thrombosis within ovarian veins
  - Postpartum
  - Anticoagulation vs. antibiotics
Urinary System

- Urinary tract infection
- Pyelonephritis
- Urinary calculi
- 50% increase in glomerular filtration
- Gravid Cr: 0.6  BUN: 9 mg/100 mL
- Chronic renal failure
Respiratory System

- Dyspnea of pregnancy
- Asthma
  - Avoid dehydration, treat infections, avoid causes of exacerbations
  - PEFR
  - Chronic mild, moderate, severe
    - If severe, risk abortion, fetal demise growth retardation
- Smoking
  - Low birth weight, growth restriction, placental abruption
Endocrine system: Diabetes mellitus

- Human placental lactogen (hpl) increases fat metabolism, inhibits glucose uptake and gluconeogenesis
- Glucosuria of pregnancy
# Diabetes Mellitus

## White’s Classification

<table>
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<th>Class</th>
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<th>Duration</th>
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<td>GDM A2</td>
<td>Fasting &lt;105, post-prandial &lt;120, insulin requiring</td>
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</table>
Fetal Complications of Diabetes

- Congenital anomalies
  - Cardiac and limb
- Macrosomia
- Neonatal hypoglycemia
- Polyhydramnios
  - Preterm labor, abruptio placentae, postpartum atony
- Spontaneous abortion and fetal demise
- Respiratory distress syndrome
Diabetes Mellitus

- **Screening**
  - Nonfasting 50 g oral glucose at 24-28 weeks
  - Glucose level at 1 hr, >140 mg/dL need GTT

- **Diagnosis**
  - Fasting 100 g oral glucose load
  - Glucose level fasting, 1 hr, 2 hr, 3 hr
    - 105/190/165/145
  - Two + abnormal values = gestational diabetes
Diabetes Management

- Glucose monitoring
  - Fasting <90  Postprandial <120
- Oral hypoglycemics
- Insulin (short and long-acting)
Diabetes Management

- Baseline Hgb A1c
- Monthly urine cultures
- CPS anatomical assessment and fetal growth
- 24 hr urine for total protein and creatinine clearance
- Fundoscopic exam
- Fetal echocardiogram
- Antepartum testing
- 38 week delivery?
Endocrine System: thyroid disease

- Increased total T4, T3, TBG
- Free T4, T3, TSH unchanged
- Minimal transfer of T4 and T3 across placenta
- Hyperthyroidism $\rightarrow$ PTU
Neurological system

- Seizures
  - Risk congenital anomalies, seizure disorders, abruption, uteroplacental insufficiency
  - ? Continue medications
  - Folate supplementation
- Preferred meds: carbamazepine, phenytoin, phenobarbital
Gastrointestinal System

- Nausea and vomiting
- Hyperemesis gravidarum
- Reflux
- Peptic ulcer disease
- Pica
- Appendicitis
Gastrointestinal system

- **Hepatitis**
  - A gamma-globulin
  - B most common (80%)
    - Universal screening
    - Active and passive fetal immunization
  - C
  - D
  - E high maternal mortality
Gastrointestinal system

- **Cholestasis**
  - Pruritis, fatigue, jaundice
  - Elevated bile acids

- **Cholelithiasis and cholecystitis**
  - Food-associated colic
  - Ultrasonography
Questions?