***Gestational Disorders***

***A. Gestational Diabetes (GD)***

GD is the most common type of diabetes complicating pregnancy, and most patients are obese. The women with GD has a normal oral glucose tolerance test(OGTT) when she is not pregnant, so her disease usually is mild. pregnancy is associated with increased tissue resistance to insulin, resulting in increased levels of blood insulin as well as glucose and trigclyerides. These changes are due to placental lactogen and elevated circulating esterogens and progesterone.

***Risk factors for GDM***

1. Maternal age greater than 30 years.

2. Previous macrosomic, malformed, or stillborn infant.

3. GDM in a previous pregnancy.

4. Family history or diabetes.

5. Maternal obesity.

6. Persistent glucosuria.

7. Chronic use of certain drug such as β-agonists or corticosteroids.

*Maternal Problems*

1. Hypoglycemia: occurs during the first half of pregnancy due to increased insulin sensitivity.

2. Hyperglycemia: occurs during the second half of pregnancy.

3. UTI.

4. Hypertension: the abnormal blood vessels of pregnant women with DM can lead to the development of hypertension in the later weeks of gestation since the abnormal endothelium cannot produce enough prostacyclin to antagonize the elevated angiotensin II vasopressor levels.

5. Hydromnios: excess amounts of aminotic fluid can occur with DM especially if glucose is poorly controlled since maternal hyperglycemia produces fetal hyperglycemia and fetal glucosuria.

6. Retinopathy.

*Infant Problems*

1. Spontaneous abortion.

2. Congenital abnormalities: CVS and CNS most affected systems

3. Respiratory distress: since hyperglycemia interferes with ability of cortisol to accelerate surfactant production.

4. Hypoglycemia: since the fetus exposed to high glucose levels coming across the placenta from a hyperglycemic mother reacts by producing large amounts of insulin in an attempt to reduce glucose. 20

5. Macrosomia: more than 4 kg.

6. Hypocalcemia.

7. Hyperbilirubinemia: results from a higher hematocrit developed in utero especially if oxygen availability is decreased.

8. Perinatal mortality: since acute deprivation caused by glucose binding to Hb or sudden shifts in water and electrolytes with glucose movements have been suspected.

***Management***

1. Diet control.

2. Insulin therapy: the beginning dose is higher in late pregnancy therefore starting dose is 0.5 u/kg in the first half of gestation and then 0.7 u/kg in the second half, and increase the dose twofold-threefold during the 20-30 week period at a total dose of 15-20 u/day.

***Seizure disorders***

Epileptic women contemplating pregnancy who have not had a seizure for 5 years should consider a prepregnancy trial of withdrawal from treatment. Those with recurrent epilepsy should use a single drug with blood level monitoring. valproate is contraindicated during pregnancy; phenytoin and carbamazepine may be teratogenic in the first trimester and should not be used unless absolutely necessary. Phenobarbital is considered the drug of choice. Serum levels should be measured in each trimester and dosage adjustments made to keep serum levels in the low normal therapeutic range. Pregnant women taking phenobarbital and phenytoin should receive vitamin supplements, including folic acid and vitamin D, throughout pregnancy. Vitamin K, 10-20 mg/d, is administered during the last month to help prevent bleeding problems in the newborn, who is at risk of bleeding tendencies due to decreased levels of clotting factors. Such infants should receive an injection of vitamin K- 1 mg subcutaneously immediately after delivery, and should have clotting studies 2—4 hours later. Breast-feeding is not contraindicated for infants of mothers taking anti-seizure medications.

***Thyroid Disease***

Thyrotoxicosis during pregnancy may result in fetal anomalies, late abortion, or preterm labor and fetal hyperthyroidism with goiter. Thyroid storm in late pregnancy or labor is a life-threatening emergency. 36

Radioactive isotope therapy must never be given during pregnancy. The antithyroid drug of choice is propylthiouracil, which acts to prevent further thyroxine formation by blocking iodination of tyrosine. There is a 2- to 3-week delay before the pretreatment hormone level begins to fall. The initial dose of propylthiouracil is 100—150 mg three times a day; the dose is lowered as the euthyroid state is approached. It is desirable to keep free T4 in the high normal range during pregnancy. A maintenance dose of 100 mg/d minimizes the chance of fetal hypothyroidism and goiter.

Maternal hypothyroidism even subclinical hypothyroidism manifested only by elevated levels of TSH—may adversely affect subsequent neuropsychological development of the child. Mothers with known or suspected hypothyroidism should have the TSH level measured at the first prenatal visit. Replacement therapy with levothyroxine should be adjusted to maintain levels of TSH in the normal range.

***Urinary Tract Infection* -**

The urinary tract is especially vulnerable to infections during pregnancy because the altered secretions of steroid sex hormones and the pressure exerted by the gravid uterus upon the ureters and bladder cause hypotonia and congestion and predispose to urinary stasis. Labor and delivery and urinary retention post-partum also may initiate or aggravate infection. *Eschrichia coli* is the offending organism in over two-thirds of cases.

From *2%* to 8% of pregnant women have asymptomatic bacteriuria, which some believe to be associated with an increased risk of prematurity. It is estimated that pyelonephritis will develop in 20-40% of these women if untreated.

A first-trimester urine culture is indicated in women with a history of recurrent or recent episodes of urinary tract infection. If the culture is positive, treatment should be initiated as a therapeutic measure. Nitrofurantoin (100 mg twice daily), ampicillin (500 mg four times daily), and cephalexin (500 mg four times daily) are acceptable medications for 3—7 days. Acute pyelonephritis requires hospitalization for intravenous administration of antibiotics until the patient is a febrile; this is followed by a full course of oral antibiotics.

***Anemia***

Anemia in pregnancy is defined as a Hb below 10 g/dl or hematocrit below 30%.

Plasma volume increases 50% during pregnancy, while red cell volume increases 25% causing lower HB and hematocrit values, which are 37

maximally changed around the 24th-28th weeks. Anemia is very common in pregnancy causing fatigue, anorexia, dyspnea and edema.

1. *A.* Iron deficiency anemia: many women enter pregnancy with reduced iron stores resulting from heavy menstrual periods, previous pregnancies, breast-feeding, or poor nutrition. It is difficult to meet the increased requirement for iron through diet and anemia often develops unless iron supplements are given. RBCs may not become hypochromic and microcytic until the hematocrit has fallen significantly. Treatment consists of a diet containing iron-rich foods and 60 mg of elemental iron 3 times daily with meals. Iron is best absorbed if taken with a source of vitamin C.
2. *B.* Folic acid deficiency anemia: folic acid deficiency is the main cause of macrocytic anemia in pregnancy, since vitamin B12 deficiency anemia is rare in the childbearing years. The daily requirements of folic acid doubles from 0.4mg -0.8 mg in pregnancy.

Twin pregnancies, infections, malabsorption, and use of anticonvulsants such as phenytoin can precipitate folic acid deficiency. The anemia may first be seen in the puerperium owing to the increased need for folate during lactation. Good sources of folate in food are leafy green vegetables, orange juices, peanuts and beans. Cooking and storage of food destroy folic acid.