CASE STUDY - INDUCTION OF LABOR

A G3, P2 patient at 41 weeks gestation is admitted for induction of labor. Assessment data reveals: cervix dilated 2 cm, 40% effaced, -2 station, cervix firm, and membranes intact. The patient's last baby was delivered at 40 weeks and weighed 9 pounds. The physician has ordered Prostaglandin administration the evening before Oxytocin in the morning.

1. What is the indication for induction of labor?

   Patient is considered to term at 40 weeks. Once pregnancy reaches 40 weeks the placenta doesn't function/work as it should.

2. Why did the physician order prostaglandins the evening before the induction?

   Prostaglandins facilitate the ripening of the uterus to prepare for oxytocin stimulation.

3. What tests or evaluation should be performed prior to the induction?

   CBC, RPR/VDRL or treponemal test of syphilis, HIV, Hepatitis B, in hospital blood type and Rh if mom has a negative blood type and or type O, clot to hold test.

4. What are the nursing considerations when administering an Oxytocin infusion?

   Before administration, uterine activity and fetal heart rate should be observed for normal baseline and variability. There must be a reactive strip (2 accelerations of 15 beats above baseline lasting 15 seconds) on a 20 minute strip in order to make sure baby is showing proper CNS maturity and that its tolerating uterine activity.

   Oxytocin must be stopped or decreased if tachysystole occurs or fetal heart rate strip shows an abnormal pattern such as a category II or III. If a category II occurs, we will reposition the patient, administer an IV bolus of LR 500mL, give oxygen through a rebreather mask at 10mL, decrease oxytocin by at least half if no response from above. If category III or tachysystole were to occur, the primary nursing action is to stop oxytocin, initiate IUR measures, notify Dr, consider terbutaline.

CASE STUDY - Diabetes in Pregnancy

A 30-year-old, G2, P1, is in her 10th week of pregnancy. Her first baby was stillborn at 32 weeks, so she is very worried about this pregnancy. Initial lab work obtained two weeks ago included testing for diabetes, due to the patient's history a stillborn. The physician explains during the first prenatal visit there is a concern for diabetes due to an elevated glucose level. The nurse realizes patient education regarding diabetes, the effects of diabetes on both the patient and baby and how to manage diabetes it is essential.

1. Discuss maternal risks associated with diabetes and pregnancy.

Diabetes is considered a high risk pregnancy which can lead to risk for infection, preeclampsia, hydramnios, ketoacidosis, hypoglycemia, hyperglycemia.

2. Discuss fetal-neonatal risks associated with diabetes and pregnancy.

Delayed lung maturation which would put the baby at risk for trouble transitioning, respiratory distress syndrome, fetal death, macrosomia or LGA, IUGR if mother is type 1 with vascular changes, hyperbilirubinemia, hypoglycemia, prematurity, cardiomyopathy or cardiac anomaly, congenital defects.

3. What educational topics should be covered to assist the patient in managing her diabetes?

Check blood glucose levels 4 to 8 times a day
Self-monitor for urine ketones
Record blood glucose levels, food intake, activity and insulin
Provide expected plan of care, test, and fetal surveillance
Provide expected plan for labor and delivery
Exercise 3 times a week for at least 20 minutes unless contraindicated
Teach patient signs and symptoms of hypoglycemia
Teach patient to always have a fast acting carbohydrate
Instruct patient to conduct daily kick counts

4. What classification (SGA, AGA, LGA) will this patient's baby most likely be classified as? Discuss your answer.

LGA
Glucose is transported across the placenta, glucose levels in the fetus are directly proportional to maternal levels. When diabetes is poorly controlled, the excess glycogen and fat is stored in the tissues of the fetus leading to a larger baby.

CASE STUDY - Pregnancy Induced Hypertension

A single 17-year-old patient Gr 1 Pr 0 at 34 weeks gestation comes to the physician's office for her regular prenatal visit. The patient's assessment reveals BP 160/110, DTR's are 3+ with 2 beats clonus, weight gain of 5 pounds, 3+ pitting edema, facial edema, severe headache, blurred vision, and 3 + proteinuria.

Patient's history – single, lives with her parents, attending high school, works at local grocery store in the evenings as a cashier, began prenatal care at 18 weeks, has missed two of her regularly scheduled appointments for prenatal care, never eats breakfast, snacks for lunch and eats dinner after she gets off work at 10:00 pm.

1. What disease process is this patient exhibiting? What in the assessment supports your concern?

   Severe preeclampsia - BP 160/110, DTR's are 3+ with 2 beats clonus, weight gain of 5 pounds, 3+ pitting edema, facial edema, severe headache, blurred vision, and 3 + proteinuria.

2. What in the patient's history places her at risk for Pregnancy-Induced Hypertension?

   Primigravida is the main risk factor.

   Poor nutrition, lack in prenatal care before 18 weeks could have led to hypertension not being diagnosed and interventions initiated sooner in pregnancy, inconsistent with attending prenatal care appointments could also be contributing factors.

3. Describe how Pregnancy-Induced Hypertension affects each organ and how these effects are manifested.

   The pathological process can begin early in pregnancy during placenta formation and implantation. There can be abnormal development in the maternal spiral arteries leading to decreased perfusion and oxygenation.

   Due to the decrease in the diameter of blood vessels, circulation to organs such as the kidneys, liver, brain, and placenta is decreased. Decreased renal perfusion reduces the glomerular filtration rate. There will be an increase in BUN, creatinine, and uric acid levels. Ischemia can result from the narrowing of renal blood vessels which leads to atrophy of tubules, destruction of glomeruli, and eventual death of nephrons. This can be observed through protein in the urine, oliguria, and extensive peripheral edema. Reduced liver circulation impairs function and leads to hepatic edema and subscapular hemorrhage resulting in hemorrhagic necrosis. This can be observed by elevation of liver enzymes in maternal serum and epigastric pain. CNS involvement is manifested by hyperlexia caused by an increase in intracranial pressure. This may cause seizures, alteration of cerebral autoregulation, cerebral edema, headache, changes in vital signs, dizziness, blurred vision,

tachycardia, alteration in LOC. The cardiac and pulmonary system are also affected due to the increase in vascular resistance, cardiac output and stroke volume, and decrease in colloid osmotic pressure. This is manifested by increase in blood pressure, increase in sympathetic activity, increased sensitivity to vasopressin, epinephrine, norepinephrine and increase capillary permeability. This places the patient at risk for pulmonary edema, myocardial ischemia, left ventricular dysfunction.

Hemolysis – RBCs are damaged or destroyed, blood clotting is impaired.

4. What will the patient's treatment consist of?

   Since the patient is 34 weeks, steroids will be given to accelerate the maturation of the fetal lungs in order to delay delivery of the baby.
   Antepartum management, bed rest, fetal monitoring, antihypertensive medications, anticonvulsant medications, magnesium sulfate

   Home care may be possible – reduced activity (sedentary most of the day), home blood pressure monitoring, follow up with provider every 3-4 days, kick counts.
   The provider may order urine dipstick testing for protein.

5. What is the drug of choice for this condition? What other medication(s) might be ordered for this patient?

   Magnesium sulfate
   Other medications that might be ordered are antihypertensive medications such as labatelol, hydralazine, nifedipine and anticonvulsants.

6. What are the Nursing considerations when administering the drug of choice? (Side effects & medication administration guidelines)

   Always deliver magnesium sulfate via pump, piggy back into mainline IV infusion to most proximal port.

   Nursing considerations would be to observe for magnesium toxicity

   Monitor blood pressure during administration, assess for respiratory difficulty and or depression, , chest pain, mental confusion, slurred speech, depressed deep tendon reflexes, flushing, sweating, lethargy, hypotension.