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?

Post-term pregnancy

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

To cause cervical ripening

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

Vaginal exam to check for umbilical cord prolapse and station, leopolds maneuver, STI testing, genital herpes presentation, NST, CST, Bishop scoring system, FHM

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

Start slowly, monitor for hypotension, monitor FHM tachysystole or Category II or III FHR pattern, be prepared to perform intrauterine resuscitation (stop oxytocin, position mother left side, IV bolus, administer O2)

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.

First-trimester, may lead to increased incidence of spontaneous abortion or major fetal malformations. Hypertension, especially preeclampsia, is more likely to develop if the woman has preexisting diabetes. The development of ketoacidosis is a threat to women with T1DM and is most often precipitated by infection or missed insulin doses. In addition, ketoacidosis may develop in these women at lower thresholds of hyperglycemia than those seen in nonpregnant individuals. Untreated ketoacidosis can progress to fetal and maternal death. UTI are more common, possible because of glucose in the urine, which provides a nutrient-rich medium for bacterial growth. Other effects include, hydramnios, macrosomia, shoulder dystocia, Large fetal size increases risk for cesarean birth and the risk for postpartum hemorrhage.

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

Fetal effects-

Congenital malformation: neural tube defects, caudal regression syndrome (failure of sacrum, lumbar spine, and lower extremities to develop), and. Cardiac defects.

Variations in fetal size: LGA increases risk for cesarean birth or birth injury from shoulder dystocia. If placental perfusion decreases may be caused by complications of the diabetes such as vasoconstriction, which occurs in preeclampsia or as a result of the disease process of diabetes which can result in SGA infant.

Neonatal effects-

Hypoglycemia: when maternal glucose supply is abruptly withdrawn at birth, the level of neonatal insulin exceeds the available glucose.

Hypocalcemia: due to a relative hyperparathyroidism seen in many diabetic mothers. Other possible causes include magnesium-calcium balance, asphyxia, or preterm birth.

Hyperbilirubinemia: Fetus experiencing recurrent hypoxia compensates by producing additional erythrocytes to carry oxygen supplied by the mother. After birth, the excess erythrocytes are broken down, which releases large amounts of bilirubin into the neonates circulation. Prematurity further reduces the infant's ability to metabolize and excrete excess bilirubin.

Respiratory distress syndrome: excess glucose neutralized surfactant production

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

Preconception care, diet, self-monitoring of blood glucose level, insulin therapy, timing of delivery

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

LGA, elevated levels of blood glucose stimulate excessive production of fetal insulin, which acts as a powerful growth hormone.

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?

Preeclampsia.
Hypertension, young age, proteinuria, generalized edema, clonus, severe headache, and blurred vision.

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

First pregnancy, poor nutrition

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

Cardiovascular: decreased intravascular volume, severe hypertension including hypertensive crisis, pulmonary edema, congestive heart failure, future cardiac disease/dysfunction
Pulmonary: Pulmonary edema, hypoxemia/academia
Renal: oliguria, acute renal failure, impaired drug metabolism and excretion
Hematologic: hemolysis, decreased oxygen-carrying capacity, thrombocytopenia, coagulation defects, anemia
Neurologic: seizures, cerebral edema, intracerebral hemorrhage, stroke, visual disturbances, blindness
Hepatic: Hepatocellular dysfunction, hepatic rupture, hypoglycemia, coagulation defects, impaired drug metabolism and excretion
Uteroplacental: abruption, decreases uteroplacental perfusion

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

Home care: activity restriction, blood pressure, weight, urinalysis, fetal assessment, diet.
Severe preeclampsia: antepartum management, bed rest and fetal monitoring, antihypertensive medication, anticonvulsants, oxytocin and magnesium sulfate to prevent seizures during labor,

opiate/epidural analgesia to provide comfort and reduce painful stimuli that could precipitate a seizure and continuous EFM

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

Magnesium sulfate
Antihypertensive (Hydralazine, labetalol, nifedipine)

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

Magnesium toxicity

- Respiratory difficulty/depression
- Chest pain
- Mental confusion; Slurred speech
- Depressed deep tendon reflexes
- Flushing, sweating, lethargy
- Hypotension

Always deliver via pump; piggyback into mainline IV infusion to most proximal port
Resuscitation equipment (O_2, suction) at bedside
Monitor for magnesium toxicity-IMPORTANT

- Respiratory rate less than 12-STOP the magnesium
- Absent DTRs (Deep Tendon Reflexes)-STOP the magnesium
- Hourly urine output less than 30ml/hr-STOP the magnesium
- Magnesium serum level above 8 mg/dl-STOP the magnesium (therapeutic is 5-8mg/dl)

Ensure that calcium gluconate is readily available (antidote)

- If toxicity occurs-STOP the magnesium, call provider and give calcium gluconate
- Calcium gluconate can cause fatal arrhythmia-cardiac monitoring advised

Deep tendon reflex monitoring