# 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?

   Since the patient's last baby was delivered at 40 weeks and weighed 9 pounds, the indication for induction of labor is fetal macrosomia. If the baby is too large to fit through the birth canal easily, delivery can be difficult.

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

   Prostaglandins is a cervical ripening drug. It softens the cervix and makes it more likely to dilate with the forces of labor. Also, cervical ripening is recommended for Bishop score of 4 or less.

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

   Before induction, a cervical assessment should be performed to see if the cervix is favorable for induction using the Bishop score.

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

   The nurse should assess the fetal heart rate for at least 20 minutes before induction to identify fetal well-being. Perform Leopold's maneuvers, a vaginal examination, or both to verify a cephalic fetal presentation. If abnormal patterns are identified or fetal presentation is other than cephalic, notify the physician and do not begin induction until an ultrasound is done. Once Oxytocin is infusing, observe uterine activity for effective labor patterns and observe fetal heart rate for abnormalities and be prepared to take corrective actions.

# 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.

   Maternal risks associated with diabetes and pregnancy include, hypertension, preeclampsia, urinary tract infections, ketoacidosis, labor dystocia, cesarean birth, uterine atony with hemorrhage after birth and birth injury to maternal tissues.

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

   Fetal-neonatal risks associated with diabetes and pregnancy include, congenital anomalies, perinatal death, macrosomia, intrauterine fetal growth restriction, preterm labor, premature rupture of membranes, preterm birth, birth injury, hypoglycemia, polycythemia, hyperbilirubinemia, hypocalcemia, respiratory distress syndrome.

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

   The goal for a pregnant woman with diabetes are to maintain normal blood glucose levels, facilitate the birth of a healthy baby, and avoid accelerated impairment of blood vessels and other major organs. Diet recommendations, self-monitoring of blood glucose level, and insulin therapy are all topics that should be covered to assist the patient managing her diabetes.

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

   The patient's baby would most likely be classified as a LGA. Fetal macrosomia results when 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?

   The patient is exhibiting severe preeclampsia. The patient is past 20 weeks and is presenting with BP 160/110, DTR 3+ with 2 beats clonus, weight gain of 5 lbs, 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?

   The patient is a teen and it is her first pregnancy places her at risk for pregnancy induced hypertension.

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 and future cardiac disease and dysfunction.

   Pulmonary: pulmonary edema, hypoxemia/academia, oliguria, acute renal failure, impaired drug metabolism and excretion.

   Hematologic: hemolysis, decreased oxygen-carrying capacity, thrombocytopenia, coagulation defects and anemia.

   Neurologic: seizures, cerebral edema, intracerebral hemorrhage, stroke, visual disturbance, blindness.

   Hepatic: hepatocellular dysfunction, hepatic rupture, hypoglycemia, coagulation defects, impaired drug metabolism and excretion.

   Uteroplacental: abruption and decreased uteroplacental perfusion.

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

   The patient will be hospitalized and the management depends on disease severity and include progression toward the delivery. Antepartum management are to improve placental blood flow and fetal oxygenation and prevent seizures and other maternal complications, such as stroke. The patient will be prescribed bed rest in a quiet environment and fetal monitoring, antihypertensive medication, and an anticonvulsant medication to prevent seizures.

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

   Magnesium sulfate is the drug of choice for this condition to prevent seizures. It is given simultaneously with Oxytocin. Opiate analgesics or epidural analgesia may be administered to provide comfort and reduce painful stimuli that could precipitate a seizure.

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

   Magnesium sulfate administration protocol includes an intravenous route piggybacked into the port closest to the IV site. It begins with a loading dose of 4-6 g given over 15-20 minutes then a continuing infusion to maintain control of 1-2 g/hr. Magnesium sulfate can also be administered deep intramuscular injection of 10 g total but will be given 5 g in each buttock. However, the rate of absorption cannot be controlled. Before administration of Magnesium sulfate, the nurse should assess the patient's respiratory rate about 12 breaths per minute, presence of DTRs and urinary output greater than 30 ml/hr. The nurse should also have resuscitation equipment ready in the room along with calcium gluconate readily available. When administering Magnesium sulfate, the nurse should monitor blood pressure closely. While the patient is receiving Magnesium sulfate, the nurse should monitor for magnesium toxicity such as flushing, sweating, hypotension, depressed DTRs and CNS depression, including respiratory depression.