

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?

Induction of labor is performed when a continued pregnancy may jeopardize the health of the mother or fetus, and labor and vaginal birth is considered safe. The specific indication for this pregnancy is the gestational age being post-term, which means the placenta could no longer provide the nutrients or oxygen needed to sustain a viable pregnancy.

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

Prostaglandins are naturally produced by the body during labor, but for induction of labor, they can be given the day before to ensure cervical ripening. Misoprostol is usually the off-label drug given the night before to monitor fetal heart rate and ensure that emergency care and c-section are readily available.

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

The baseline status for both the mother and fetus would be evaluated so the nurse can monitor them both for complications and take corrective action when needed. Particularly related to oxytocin, uterine activity, fetal heart rate, and fetal heart pattern is observed for a baseline and throughout the process of oxytocin being administered.

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

During Intrapartum, nursing considerations include:

- Assess fetal heart rate for 20 minutes prior as well as during administration for any variations on the strip.
- Perform Leopold's maneuver and a vaginal exam to verify fetal presentation.
- Observe uterine activity.

During Postpartum, nursing considerations include:

- Massage the fundus to determine firmness, height, and deviation. This is the best way to prevent postpartum hemorrhage.

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.

The maternal risks/complications associated with a diabetic pregnancy includes: Infection, Preeclampsia, Hydramnios, Ketoacidosis, Hypoglycemia, and Hyperglycemia. This could also indicate that the baby will be LGA which puts the mom in the high-risk category for labor. C-section should be considered if this is the case to ensure safe delivery for both the mother and fetus.

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

The risks/ complications the fetus is exposed to includes: Macrosomia, IUGR, RDS, Hyperbilirubinemia, hypoglycemia, prematurity, cardiac abnormalities, congenital defects, and psychiatric disorders. Specifically, if the mother has uncontrolled diabetes, the fetus compensates by producing insulin for itself, and after delivery, when it is no longer receiving the excess amount of sugar, the fetus experiences hypoglycemia.

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

The patient should be educated on lifestyle changes that can ensure a more compatible pregnancy and delivery. These changes include diet, exercise, medication changes, and blood glucose monitoring. She should also be made aware of the risks and complications to not only herself but also the fetus if she is noncompliant with managing her diagnosis.

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

The fetuses of diabetic mothers are often classified as LGA due to insulin acting as a growth hormone resulting in fat deposits and hypertrophy of the liver, spleen, and heart.

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 presenting with severe preeclampsia, which is indicated by how high the blood pressure is, hyperreflexia, clonus, extensive edema, 3+ proteinuria, and CNS symptoms (HA, blurred vision)

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

Her age puts her at risk for Hypertension, as it is the number one complication of adolescent pregnancy. Other risks are her diet, not starting prenatal care till 18wks, and missing appointments are the factors that lead to severe preeclampsia. Had those factors been identified and managed earlier she could only have gestational hypertension.

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

The underlying mechanism is vasospasm which leads to poor tissue perfusion. The arteries narrowing can lead to an enlarged heart, CAD, heart failure, and the most common complication is a stroke. Damaged blood vessels leads to the GFR decreasing, resulting in kidney failure. Other organ systems as also affected as well but those can be considered the most critical to the patient.

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

Generally, treatment consists of 1st line hypertensives which include Labetalol, Hydralazine, and Nifedipine, and in some cases, Magnesium Sulfate is given to prevent Eclampsia, which will need to be monitored for toxicity. The only cure is the delivery of the baby, which is decided on the severity of the disease and fetal maturity. Specifically for severe preeclampsia, the patient will be admitted to the unit for observation and educated on lifestyle changes once the blood pressure is under control.

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

The medication of choice could be considered Magnesium Sulfate, which is an anticonvulsant that needs to be monitored for toxicity. In the case of toxicity, there is a standing order for calcium gluconate, which is an antidote, and before administering that, the Magnesium needs to be

discontinued and the HCP notified. Unrelated to the Magnesium Sulfate, antihypertensives for management and corticosteroids for prophylaxis may also be ordered.

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

The biggest nursing consideration is administering the medication slowly and correctly to prevent hypermagnesemia, which is identified by the CNS depression symptoms that present. Due to the risk of toxicity, resuscitation equipment should be at the bedside in case of emergency. How to monitor for toxicity is by looking at respirations (<12 STOP the Mag.), DTRs (absent STOP the Mag.), and hourly urine output (< 30ml/hr. STOP the Mag.). The loading dose is 4-6mg over 15-20min followed by a continuous infusion through the pump at 1-2g/hr.