Juan Anthony Hernandez. CSON-IM6
OB_SIM_CaseStudies. 09/27-28/2022

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?

   The patient is considered post-term at 41-weeks' gestation this mean she would be induced.

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

   Prostaglandins help with cervical ripening and make it more likely for the patient to dilate when labor is induced.

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

   We must assess the FHR for at least 20 minutes before induction to ensure the well-being of the fetus. If necessary we perform Leopold's maneuvers and/or a vaginal exam to assess the position of the fetus and prepare for delivery.

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

   Observe UA for establishment of a effective laboring pattern. Observe FHR for patterns such as tachycardia, bradycardia, decreased variability and late, variable, or prolonged decels. If used postpartum, assess for cramping and vital signs every 15 minutes. Monitor intake and output along with breath sounds to identify fluid retention.

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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.

   We will need to monitor patient for possible preeclampsia to develop if the mother has pre-existing diabetes. During the first trimester, the effects of hypoglycemia, hyperglycemia, and ketosis may lead to an increased risk of spontaneous abortion or serious fetal demise (still born). Ketoacidosis is a potential problem for type 1 diabetic women. The tolerance of hyperglycemia may also go down in diabetic mothers due to the placenta. The risk of shoulder dystocia also increases which can lead to fetal and maternal complications. UTIs are more common in diabetic women due to increased glucose in the urine which supports an optimal environment for bacterial growth and infection. Other issues may be polyhydramnios, which may come from fetal hyperglycemia.

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

   If maternal hyperglycemia is not controlled in the first trimester it places the mom at risk for serious congenital malformation is higher than for the general population of pregnant women. In diabetic mothers, if she is hyperglycemic, the fetus is experiencing higher glucose levels as the baby is barely making insulin at the 10th week. Excessive growth of the fetus results when high blood sugar levels from the mother when this happens insulin, which acts as a growth hormone can lead to shoulder dystocia. In rare instances small babies can be born due to IUGR because the mother has vascular impairment. When this happens lower amount of oxygen being delivered to the baby. When there is a growth restriction the amniotic fluid may also be reduced; this is known as oligohydramnios. When the mom delivers the baby there are four major issues the IDM may deal with hyperbilirubinemia, respiratory distress, hypoglycemia, and hypocalcemia. Hyperbilirubinemia results from recurrent hypoxia or lack of oxygen which leads to more erythrocytes or red blood cells being produced to help oxygen levels. After birth, the extra red blood cells are broken down. This leads to excess bilirubin causing an infant to become jaundice and have liver distress. Respiratory Distress Syndrome is caused by the insufficient production of surfactant needed to keep the baby's alveoli sacs open. Wide fluctuations in the mother's insulin and glucose levels slow down lung maturation. Often corticosteroids may be administered to help the development of the infant's lungs. Hypoglycemia results from having the umbilical cord cut and not receiving insulin anymore with the help of the mother. When the baby's body was used to producing large amounts of insulin to accommodate to the high maternal blood glucose that when the umbilical cord is cut, it no longer has a high blood sugar level which results in excess insulin. Hypocalcemia is likely due to a relative hyperparathyroidism seen

in diabetic mothers. Other potential reasons include preterm birth, and magnesium-calcium balance and her worst experience yet another still born.

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

   The most important aspect to teach is the safety of her unborn child and the effects that uncontrolled diabetes can cause. In addition teaching her nutritional facts about things to eat and avoid to help her glucose. Lastly it is important to teach her how to do self-monitored glucose tests 4-8 times a day along with self-administering insulin. Teach back method would signify understanding.

4. What classification (SGA, AGA, and LGA) will this patient's baby most likely be classified as? Discuss your answer.
   Due to the baby producing large amounts of insulin which acts as a growth hormone, the child will likely be large for gestational age.

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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 showing signs of severe preeclampsia. The blood pressure of 160/110 and proteinuria of 3+ are defining characteristics of severe preeclampsia. Severe headaches, visual disturbances (blurred vision) and widespread peripheral edema extending to facial and pitting edema along with CNS symptoms also indicate signs of severe preeclampsia. The clonus she is experiencing is extremely concerning as well as that indicates extreme CNS irritation and signs of eclampsia an obstetrical emergency.

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

   Her being a young 17 year old single mom, it being her first pregnancy and lack of understanding/ expectation on importance of nutrition and fear of weight-gain, the stress of school, and having lack of partner support may play a role in pregnancy induced hypertension for this patient.

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

   The cardiovascular and pulmonary system experience increased vascular resistance and increased cardiac output and stroke volume. This is shown as high blood pressure and potential rhonchi from pulmonary edema. The vascular system is affected by the high amount of pressure being placed on the vascular walls of the heart. The renal system is affected by poor perfusion and poor filtration of the kidneys. This is shown as proteinuria and increased serum uric acid. The hepatic system changes in a way that is similar with hemorrhage. This shows as elevations in liver function test and possible elevations in bilirubin. The blood is affected by the increased platelet destruction and decreased platelet lifespan. This will be marked as platelets being below 100,000 which increases the risk for coagulopathy and when platelets are below 50,000 it increases the risk for hemorrhage. When this happens abnormal fetal heart patterns may be seen due to the baby being affected by oligohydramnios (decreased amniotic fluid) which prohibits placental function necessary for fetal growth and development.

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

   Since the mother is unstable we will admit her to antepartum unit away from the nurse's station to avoid stressful milieu. We will limit visitors and educate mom and current condition and communicate frequently. She will have continued blood pressure checks q15-30. We will monitor her blood glucose since we are administering magnesium sulfate. She may receive corticosteroids such as betamethasone/ dexamethasone to help the baby's lungs mature along with magnesium sulfate to prevent seizures and help with CNS of the mom and have suction set up and oxygen ready. We will prepare for possible induction and inform surgery of needed bed but with the hopes of delaying delivery as to help mature the baby's growth and development. We will inform the NICU team of patient's status and start a large bore IV and second line. Type and cross for possible blood products and view labs for necessary injections and medications to easy and provide the best delivery possible.

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 most commonly used to prevent seizures in pregnant women and aide with CNS conditions of the mother. Calcium gluconate the anecdote for Magnesium Toxicity. A cardiac monitor and crash cart may be outside the room.

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

   Magnesium Sulfate is given intravenously. This medication requires us to be meticulous with administration. Side effects of magnesium sulfate are confusion, weakness, flushing, and poor reflexes. Magnesium toxicity can occur as mentioned above we will make sure levels are between 5-8mg but if at 8mg, RR<12, Absent DTR, decreased LOC, BP decrease, urine output decreased, patellar reflexes absent. When this happens give Calcium gluconate with heart monitor for arrhythmias and crash cart ready.

Student Name: Juan Anthony Hernandez Unit: SIM - OB Pt. Initials: N/A Date: 09/27-28/2022

Maternal Medication Worksheet – Current Medications & PRN for Last 24 Hours

Allergies: _____

Primary IV Fluid and Infusion Rate (ml/hr)	Circle IVF Type	Rationale for IVF	Lab Values to Assess Related to IVF	Contraindications/Complications
	Isotonic/ Hypotonic/ Hypertonic			

Generic Name	Pharmacologic Classification	Therapeutic Reason	Dose, Route & Schedule	Correct Dose? If not, what is correct dose?	IVP – List solution to dilute and rate to push. IVPB – List mL/hr and time to give	Adverse Effects	Appropriate Nursing Assessment, Teaching, Intervention (Precautions/Contraindications, Etc.)
Oxytocin	Uterotonic agents	Strengthen uterine contractions		Y N		Nausea, vomiting, more intense/frequent contraction, fast or irregular heartbeat	1. Need to monitor patient BP and FHR. 2. Report excessive bleeding long after childbirth to HCP. 3. Monitor patients fluids status. 4. Monitor frequency of uterine contractions.
Magnesium Sulfate	Anti-convulsant	To prevent seizures; decreases myometrium contractability		Y N		Diarrhea, upset stomach,	1. Monitor urine output and stop if less than 30 ml/hr. 2. Report feelings of extreme drowsiness/syncope; indicative of overdose. 3. Stop the medication with RR <12. 4. May need to have anecdote calcium gluconate for MagTox.
Meperidine	Narcotic analgesic	To reduce moderate-to-severe pain		Y N		Dizziness, headache, N/V	1. It is contraindicated for those with asthma. 2. Notify hcp if you have a drug or alcohol addiction. 3. Make sure to inform no breast feeding while using meperidine. 4. Make sure to monitor the patient for signs of respiratory depression.

Student Name: Juan Anthony Hernandez Unit: SIM-OB Pt. Initials: N/A Date: 09/27-28/2022

Newborn Medication Worksheet – Current Medications & PRN for Last 24 Hours

Allergies: _____

Promethazine	Pheno-thiazine	To treat anaphylaxis, and N/V		Y N		Dry mouth, dizziness, drowsiness	1. Increased risk for falling; call before getting up. Monitor patient for arrhythmias. 2. Notify HCP if unusual muscle movements occur; may also cause photosensitivity. 3. Has an anti-cholinergic effect monitor urine output. 4. Report any overactive reflexes and loss of coordination; indicative of overdose.
Calcium Gluconate	Minerals and electrolytes	Low calcium/Mg. sulfate antidote		Y N		Constipation, slow heartbeat, dizziness	1. Report signs of an allergic reaction to HCP. 2. Complete cardiac assessments to assess for abnormal heartbeat. Place on heart monitor. 3. Let HCP know if you are taking ceftriaxone or digoxin. It can worsen cardiac conduction. 4. Asses for renal impairment.

Primary IV Fluid and Infusion Rate (ml/hr)	Circle IVF Type	Rationale for IVF	Lab Values to Assess Related to IVF	Contraindications/Complications
	Isotonic/ Hypotonic/ Hypertonic			

Generic Name	Pharmacologic Classification	Therapeutic Reason	Dose, Route & Schedule	Correct Dose? If not, what is correct dose?	IVP – List solution to dilute and rate to push. IVPB – List mL/hr and time to give	Adverse Effects	Appropriate Nursing Assessment, Teaching, Intervention (Precautions/Contraindications, Etc.)
Phytonadione	Anticoagulant reversal agents	Treats bleeding conditions		Y N		Changes sense of taste, sweating, dizziness	1. Monitor for yellowing of the eyes; indicative of liver problems. 2. Assess cardiac function for weak, but rapid pulse. 3. Protect from light agent is rapidly degraded 4. Push the medication slowly as it can cause fatal anaphylaxis.

Student Name: Juan Anthony Hernandez **Unit:** SIM-OB **Pt. Initials:** N/A **Date:** 09/27-28/2022

Maternal Medication Worksheet – Current Medications & PRN for Last 24 Hours

Allergies: _____

Erythromycin Ophthalmic Ointment	Ophthalmic anti-infectives	Treats bacterial infections in the eyes		Y N		Eye redness, mild eye irritation	1. Notify HCP of any signs of infection. 2. Make sure to not touch tip of tube to eye. 3. Use medication for full prescribed length of time. 4. Store at room temperature away from heat and moisture.
Engerix B (HEP B)	Vaccines	Immunizes against hepatitis B		Y N		Irritation at the site, headache, nausea	1. Monitor for redness/pain/swelling may occur at injection site. Bathe patient before injection. 2. Booster shots are needed for full protection 3. May cause sore throat and tiredness 4. Do not get this vaccine if you have a yeast hypersensitivity.
Hepatitis B Immune Globulin (HBIG)	Immune globulins	Protects against hepatitis B		Y N		Nausea, vomiting, upset stomach	1. Contraindications for patients with thrombocytopenia or coagulation disorders. 2. Report chest pain; indicative of fluid buildup around the lungs. Pulmonary assessment. 3. Report sudden numbness or weakness; indicative of a blood clot or stroke. 4. Monitor labs (AST, ALT, CBC, CMP)
				Y N			1. 2. 3. 4.