

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
Methotrexate	<p>Uses: Methotrexate is used to facilitate an abortion in the event of an ectopic pregnancy.</p> <p>MOA: Methotrexate works by stopping the growth of the fertilized egg before a rupture occurs.</p>	<p>The nurse should explain adverse side effects, such as nausea and vomiting; effects of therapy, such as increased abdominal pain; and the importance of communicating any physical changes to the health care team.</p>
Mifepristone	<p>Uses: Mifepristone is used to cause an abortion during the early part of pregnancy. It is used up to week 10 of pregnancy (up to 70 days after the first day of your last menstrual period).</p> <p>MOA: Mifepristone blocks a natural substance (progesterone) that is needed for your pregnancy to continue.</p>	<p>The nurse should instruct the patient to notify a health care professional immediately if weakness, nausea, vomiting, diarrhea, with or without abdominal pain, or fever more than 24 hr after taking mifepristone develops. This may indicate life-threatening sepsis. Inform the patient that vaginal bleeding and uterine cramping are likely to occur.</p>
Rhogam	<p>Uses: Administer to Rh-negative women who have been exposed to Rh-positive blood by doing the following:</p> <ol style="list-style-type: none"> 1. Delivering an Rh- positive infant 2. Aborting an Rh-positive fetus 3. Undergoing chorionic villus sampling, amniocentesis, or intraabdominal trauma while carrying an Rh-positive fetus 4. Receiving inadvertent transfusion of Rh-positive blood <p>MOA: The mechanism of action of Rho(D) immune globulin therapy is unclear. It is suggested that Rho immune globulin predominantly prevents the antibody response during incompatible pregnancy by accelerating the phagocytosis of RBC's and clearance from the circulation before the recognition by the immune system.</p>	<p>The nurse must go to the blood bank to get Rhogam with a copy of the patient's sticker. Rhogam numbers will be inspected by nursing and laboratory personnel in the blood bank. Check the patient's identification with two identifiers and explain the procedure and purpose of RhoGAM before administration. Nursing Considerations: Type and antibody screening of the mother's blood and cord blood type of the newborn must be performed to determine the need for the medication. The mother must be Rh-negative and negative for Rh antibodies. The newborn must be Rh-positive. If the fetal blood type after the termination of pregnancy is uncertain, the medication should be administered. The newborn may have a weakly positive antibody test if the woman received Rho(D) immune globulin during pregnancy. The drug is administered to the mother, not the infant. The deltoid muscle is recommended for IM administration.</p>

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Promethazine	<p>Uses: Promethazine is a sedating antihistamine that is used to treat allergies, nausea, and vomiting (including in pregnancy), and for short-term treatment of some sleep problems. Promethazine is a prescription medication used to treat allergic reactions and nausea.</p> <p>MOA: Promethazine belongs to a group of drugs called antihistamines. It blocks the effect of histamine, a chemical in the body that causes symptoms of allergic reactions.</p> <p>Promethazine, a phenothiazine derivative, blocks postsynaptic dopaminergic receptors in the brain and has a strong α-adrenergic blocking effect. It competitively binds to H1-receptors.</p>	<p>Nurses should be aware this drug is a CNS depressant and can cause respiratory depression. Respiratory and cardiac assessments should be completed prior to administration and monitored after the dose is given. Patients may also experience nightmares, delirium, and agitated behavior.</p>
Pyridoxine and Doxylamine	<p>Uses: Pyridoxine and Doxylamine can be used to treat nausea and vomiting during pregnancy.</p> <p>MOA: It works by blocking the action of certain natural substances in the body that may contribute to nausea and vomiting. Pyridoxine (vitamin B₆) is a vitamin. It is given because a lack of pyridoxine in the body may also be a factor in causing nausea and vomiting during pregnancy. Furthermore, doxylamine reduces nausea and vomiting by inhibiting histaminergic signaling to the vomiting center in the medulla.</p>	<p>Nurses should educate their patients that they should not breastfeed while taking doxylamine and pyridoxine. Nurses should educate their patients on the risk of adverse effects that can include dry mouth, nose, and throat persists, as well as drowsiness, headache, restlessness, dizziness, muscle pains or weakness, stomach pain, constipation, diarrhea, and a rash. More severe adverse effects include vision problems, blurred vision, dilated pupils, fast irregular heartbeat, shortness of breath, confusion, or seizures.</p>
Ondansetron	<p>Uses: Ondansetron can be used to reduce the symptoms of morning sickness during pregnancy including nausea and vomiting.</p> <p>MOA: Ondansetron is in a class</p>	<p>Observe for improvement in symptoms of nausea and vomiting. Nurses should monitor fluid and electrolytes and be mindful that an imbalance may occur in conjunction of use of ondansetron.</p>

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	<p>of medications called serotonin 5-HT₃ receptor antagonists. It works by blocking the action of serotonin, a natural substance that may cause nausea and vomiting.</p>	
<p>Betamethasone</p>	<p>Uses: A single course of betamethasone is recommended for pregnant women between 34 0/7 weeks and 36 6/7 weeks of gestation at risk of preterm birth within 7 days, and who have not received a previous course of antenatal corticosteroids. MOA: Betamethasone valerate binds to serum albumin and corticosteroid-binding globulin. The metabolism of betamethasone yields 6 metabolites. The metabolic processes include 6β hydroxylation, 11β-hydroxyl oxidation, and reduction of the C-20 carbonyl group followed by removal of the side chain.</p>	<p>Nurses should monitor and report signs of peptic ulcer, including heartburn, nausea, vomiting blood, tarry stools, and loss of appetite. Assess any muscle or joint pain. Report persistent or increased musculoskeletal pain to determine the presence of bone or joint pathology (aseptic necrosis, fracture).</p>
<p>Indomethacin</p>	<p>Uses: Indomethacin is often prescribed to pregnant women presenting with preterm labor or shortened cervix, which places them at risk for preterm labor and delivery. MOA: Indomethacin functions like most other NSAIDs. The effects of indomethacin occur because it inhibits the synthesis of prostaglandins. Prostaglandins are produced primarily by cyclooxygenase (COX) enzymes, and prostaglandins are critical mediators of inflammation, fever, and pain</p>	<p>Women who are more than 32 weeks pregnant should avoid taking indomethacin, given the potential for heart problems in the baby. Women with a history of ulcers, bleeding disorders, or kidney or liver disease should also avoid taking indomethacin.</p>
<p>Magnesium Sulfate</p>	<p>Uses: The uses of magnesium sulfate in obstetrics include prevention and treatment of seizures in women with</p>	<p>A cardiac monitor should be used on patients receiving magnesium sulfate intravenously. Staff should have an injectable form of calcium</p>

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	<p>preeclampsia or eclampsia and fetal neuroprotection before anticipated early preterm (less than 32 weeks of gestation) delivery.</p> <p>MOA: Magnesium sulfate (MgSO₄) can act as a smooth muscle relaxant, possibly by blocking calcium-mediated contraction, decreasing acetylcholine release from neuromuscular junctions, and reducing histamine-induced airway spasms.</p>	<p>gluconate available to reverse the paralyzing effects of magnesium sulfate. Blood pressure may drop if magnesium sulfate is administered too rapidly. Check blood pressure and pulse every 10-15 minutes during therapy.</p>
Terbutaline Sulfate	<p>Uses: Terbutaline Sulfate can delay delivery in preterm labor. This use is not recommended due to the severity of adverse effects.</p> <p>MOA: Terbutaline is in a class of drugs called betamimetics. They help prevent and slow contractions of the uterus.</p>	<p>The nurse should be aware that terbutaline has been associated with serious, sometimes fatal, adverse reactions in pregnant women including cardiac arrhythmias, myocardial ischemia, hypokalemia, and pulmonary edema.</p>
Glyburide	<p>Uses: Glyburide can be used for the management of gestational diabetes mellitus.</p> <p>MOA: Glyburide, along with others in its class of sulfonylureas, exerts its mechanism of action based on increasing insulin secretion from beta cells in the pancreas. Specifically, sulfonylureas bind to the SUR1 receptors in the membranes of the beta cells of potassium ATP-dependent channels.</p>	<p>Nurses should advise patients to notify health care professionals promptly if unusual weight gain, swelling of ankles, drowsiness, shortness of breath, muscle cramps, weakness, sore throat, rash, or unusual bleeding or bruising occurs.</p>
Insulin	<p>Uses: to help a pregnant woman keep her glucose levels under control</p> <p>MOA: Lowers blood sugar levels by stimulating peripheral glucose reuptake by fat and the skeletal muscle. It also inhibits hepatic glucose production.</p>	<p>Nurses should assess the patient for signs and symptoms of hypoglycemia, as well as obtain blood glucose levels as ordered to monitor insulin response.</p>
Hydralazine	<p><u>Uses: This is used to manage hypertension and to help a</u></p>	<p>Be aware that the drug is present in breast milk.</p>

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hydrochloride	<u>pregnant woman's cervix dilate.</u> <u>MOA: It should be noted that this drug exerts a direct vasodilation effect on vascular smooth muscle.</u>	Nursing staff should monitor ANA titer, CBC, and lupus erythematosus cell preparation before therapy and periodically as ordered during long-term treatment._
Labetalol	<u>Uses: Management of hypertension during pregnancy</u> <u>MOA: Selectively blocks alpha1 and beta2 receptors in vascular smooth muscle and beta1 receptors in the heart to reduce blood pressure and peripheral vascular resistance.</u>	Nurses should monitor blood glucose levels in diabetic patients because labetalol may conceal symptoms of hypoglycemia. Be aware that stopping labetalol tablets abruptly after long-term therapy could result in angina, MI, or ventricular arrhythmias.
Nifedipine	<u>Uses: To treat severe hypertension in pregnancy and preterm labor.</u> <u>MOA: May slow movement of calcium into myocardial and vascular smooth muscle cells by deforming calcium channels in cell membranes, inhibiting ion-controlled gating mechanisms, and disrupting calcium release from the sarcoplasmic reticulum.</u>	Be aware the capsule form of nifedipine should not be used to treat hypertension because its effects on blood pressure are unknown. Monitor fluid intake and output and daily weight._
Calcium gluconate	<u>Uses: To prevent or treat hypocalcemia due to rapid growth in pregnancy</u> <u>MOA: Increases levels of intracellular and extracellular calcium, which is needed to maintain homeostasis, especially in the nervous and musculoskeletal systems.</u>	The nurse should check intravenous sites regularly for infiltration because calcium causes necrosis. Monitor serum calcium levels in all patients, as ordered, and evaluate therapeutic response by assessing for Chvostek's and Trousseau's signs, which shouldn't appear._
Misoprostol	<u>Uses: Elective medical abortion, cervical ripening before a surgical abortion, evacuation of the uterus in cases of embryonic or fetal death, and induction of labor</u> <u>MOA: Uterotonic effects are caused by prostaglandin binding to smooth muscle cells in the uterine lining; this is responsible for its abortifacient properties, as well as its ability to promote labor and cervical ripening.</u>	Nurses need to advise patient to avoid alcohol and foods that may cause an increase in GI irritation. Inform the patient that vaginal bleeding and uterine cramping will probably occur. Bleeding or spotting occurs for an average of 9-16 days but may continue for more than 30 days.
Cervidil	<u>Uses: Initiation or continuation</u>	The nurse should monitor signs of

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	<p>of cervical ripening in patients at or near term in whom there is an obstetrical indication for the induction of labor. MOA: Produces contractions similar to those occurring during labor at term by stimulating the myometrium.</p>	<p>allergic reactions and anaphylaxis, including pulmonary symptoms or skin reactions. Be alert for signs of uterine rupture. Signs include increased bleeding, sudden abdominal pain, and changes in fetal heart rate.</p>
<p>Penicillin G</p>	<p>Uses: To prevent or treat the growth of group B streptococcus. MOA: Inhibits the final stage of bacterial cell wall synthesis by competitively binding to penicillin-binding proteins inside the cell wall.</p>	<p>Staff should obtain body tissue and fluid samples for culture and sensitivity tests as ordered before giving the first dose. Monitor patients for hypersensitivity reactions that may be severe.</p>
<p>Methylergonovine</p>	<p>Uses: To assist with involution and decrease hemorrhage. MOA: Acts directly on the smooth muscle of the uterus and induces a rapid and sustained tetanic uterotonic effect which shortens the third stage of labor and reduces blood loss.</p>	<p>Be aware this drug should not be administered I.V. routinely because of the possibility of inducing sudden hypertensive and cerebrovascular accidents. Caution should be exercised in the presence of impaired hepatic or renal function.</p>
<p>Nalbuphine (Nubain)</p>	<p>Uses: To treat mild to severe pain after childbirth MOA: Binds with and stimulates kappa and mu opiate receptors in the spinal cord and higher levels in the CNS.</p>	<p>Be mindful that excessive use of opioids may lead to abuse, addiction, misuse, overdose, and possibly death. Know that chronic maternal use of nalbuphine during pregnancy can result in NOWS, which may be life-threatening if not recognized and treated appropriately.</p>
<p>Naloxone--</p>	<p>Uses: To treat known or suspected opioid overdose MOA: Briefly and competitively antagonizes mu, kappa, and sigma receptors in the CNS, thus reversing analgesia, hypotension, respiratory depression, and sedation caused by most opioids.</p>	<p>Staff should anticipate that rapid reversal of opioid effects can cause diaphoresis, nausea, and vomiting in addition to serious adverse effects such as hypotension, pulmonary edema, seizures, and ventricular arrhythmias. Watch for opioid withdrawal symptoms, especially when giving naloxone to opioid-dependent patients.</p>
<p>Fentanyl</p>	<p>Uses: To treat obstetrical pain in women about to give birth.</p>	<p>Nurses need to know that the fentanyl transdermal system should</p>

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	MOA: Binds to opioid receptor sites in the CNS, altering the perception of and emotional response to pain by inhibiting ascending pain pathways.	be used only in patients already receiving opioid therapy and with demonstrated opioid tolerance and require at least a fentanyl dosage of 25 mcg/hour to manage their pain. Be aware that fentanyl should not be given to pregnant women during pregnancy and labor and while breastfeeding as the newborn may experience neonatal opioid withdrawal syndrome.
Ibuprofen	Uses: To relieve pain and inflammation_ MOA: Blocks activity of cyclooxygenase, the enzyme needed to synthesize prostaglandins, which mediate inflammatory response and cause local pain, swelling, and vasodilation.	Be aware that ibuprofen should not be used in pregnant women starting at 30 weeks gestation because premature closure of the ductus arteriosus may occur in the fetus. Be aware that NSAIDs should be avoided in patients with a recent MI because of risk of reinfarction increases with NSAID therapy.
acetaminophen	Uses: To relieve pain and fever. MOA: Inhibits the enzyme cyclooxygenase, blocking prostaglandin production and interfering with pain impulse generation in the peripheral nervous system.	Use acetaminophen cautiously in patients with hepatic impairments or active hepatic disease, alcoholism, chronic malnutrition, severe hypovolemia, or severe renal impairment. Monitor AST, ALT, bilirubin, and creatinine levels as ordered because acetaminophen can be hepatotoxic.
oxycodone	Uses: To treat moderate to severe pain. MOA: Alters perception of and emotional response to pain in the spinal cord to higher levels of CNS by blocking the release of inhibitory neurotransmitters, such as acetylcholine and gamma-aminobutyric acid.	Nurses should note that excessive use of opioids may lead to abuse, addiction, misuse, overdose, and possibly death. Know that chronic maternal use of oxycodone during pregnancy can result in NOWS, which may be life-threatening if not recognized and treated appropriately.
hydrocodone	Uses: To manage severe pain MOA: Binds to and activates opioid receptors at sites in the periaqueductal and periventricular gray matter, the ventromedial medulla, and the spinal cord to produce pain relief.	Nurses should know that hydrocodone should not be given to a patient with impaired consciousness, nor should the drug be administered on an as-needed basis. Be aware that hydrocodone increases the risk of abuse, addiction, and misuse.
ketorolac	Uses: Decreases postpartum	Be aware that NSAIDS have the

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	<p>pain, especially in women who have undergone a cesarean section.</p> <p>MOA: Ketorolac blocks cyclooxygenases (COX), which are enzymes that convert arachidonic acid into prostaglandins, prostacyclin, and thromboxane. The inhibition of these substances decreases pain, fever, and inflammation.</p>	<p>potential for causing fetal cardiovascular adverse reactions using ketorolac during pregnancy should be avoided.</p> <p>Ketorolac administration is contraindicated in labor because of its potential to impact fetal blood circulation and prevent uterine contractions, increasing the risk of uterine hemorrhage.</p>
Hepatitis B vaccine	<p>Uses: Recommended for pregnant people who are at risk for acquiring hepatitis B during pregnancy.</p> <p>MOA: The vaccine works by causing your body to produce its own antibodies against the disease.</p>	<p>This vaccination consists of a course of three injections over a three-month period.</p> <p>The nurse should use the deltoid muscle. This is the preferred injection site for adults.</p>
Erythromycin eye ointment	<p>Uses: To kill or weaken bacteria in the eye, particularly gonorrhea, to protect the infant from getting pink eye.</p> <p>MOA: Binds to and blocks the 50S subunit of bacterial ribosomes to inhibit protein synthesis, thereby stopping bacterial growth and replication.</p>	<p>Be sure to administer within one hour after delivery.</p> <p>Staff should assess eyes for drainage or crusting.</p>
Phytonadione	<p>Uses: To treat vitamin K deficiency and prevent hemorrhage.</p> <p>MOA: Functions as a cofactor required for the activity of vitamin K-dependent proteins, which include factors II, VII, IX, and X, in addition to protein C and protein S.</p>	<p>Be sure to monitor for hypersensitivity reactions, especially when administered IV.</p> <p>Monitor INR to assess the effectiveness and the need to administer another dose.</p>
Prenatal vitamins	<p>Uses: To aid in the prevention of neural tube defects</p> <p>MOA: Prenatal vitamins provide additional vitamins and minerals needed to help with the development of a fetus during pregnancy.</p>	<p>If taking the delayed-release form or extended-release capsules, swallow them whole. Do not crush or chew delayed-release or extended-release products. Patients should be advised to take with a full glass of water before eating.</p>
MMR vaccine	<p>Uses: MMR vaccine reduces the risk of being infected with</p>	<p>Nurses should monitor for seizures and anaphylaxis following the</p>

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	<p>rubella which has the potential to be passed to the unborn fetus resulting in Congenital Rubella Syndrome</p> <p>MOA: Vaccines trigger the body's immune system to produce antibodies without causing any disease. Memory cells 'remember' how to respond and so, in the event of later infection, the body can respond much more effectively to a particular infection.</p>	<p>administration of the vaccine. The administration of the first dose should be between 12 to 15 months of age, and the second dose between 18 months of age and school entry. Note that the interval between doses should not be shorter than 28 days.</p>
<p>Tetanus & reduced diphtheria toxoids/acellular pertussis vaccine</p>	<p>Uses: Vaccine given to the mother protects a newborn child from whooping cough. The child will build antibodies against whooping cough.</p> <p>MOA: The vaccine produces an active immune response to produce antibodies and antitoxins.</p>	<p>Before administration, the nurse needs to visually inspect the vaccine for particulate matter and/or discoloration.</p> <p>Just before use, shake the vial or manufacturer-filled syringe well. Do not use the vaccine if you cannot resuspend it after thorough agitation.</p>
<p>Lidocaine mucosal gel</p>	<p>Uses: Lidocaine mucosal gel is used to prevent and relieve pain during certain medical procedures</p> <p>MOA: Lidocaine stabilizes the neuronal membrane by inhibiting the ionic fluxes that are required for initiating conduction impulses, this affects local anesthetic action</p>	<p>Excessive dosage, or short intervals between doses, can result in high plasma levels and serious adverse effects.</p> <p>Lidocaine should be used with extreme caution in the presence of sepsis or severely traumatized mucosa in application since, under such conditions, there is the potential for rapid systemic absorption.</p>