

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
Methotrexate	It may exert immunosuppressive effects by inhibiting the replication and function of T and possibly B lymphocytes. It also slows rapidly growing cells, such as epithelial skin cells in psoriasis.	Follow facility policy for preparing and handling drugs; parenteral form poses a risk of carcinogenicity, mutagenicity, and teratogenicity. Avoid skin contact.  Expect renal impairment to alter drug elimination severely.
Mifepristone	The anti-progestational activity of mifepristone results from competitive interaction with progesterone at progesterone-receptor sites. The termination of pregnancy results.  Cortisol receptor blockers treat Cushing's syndrome and terminate pregnancies up to 70 days gestation.	Notify health care professionals immediately if the patient develops weakness, nausea, vomiting, diarrhea, with or without abdominal pain, or fever more than 24 hours after taking mifepristone.
Rhogam	Releases antibody-specific globulins to produce an antibody-antigen reaction that results in bacterial lysis and facilitates bacterial phagocytosis.  In Kawasaki disease and bacterial infections with B-cell chronic lymphocytic leukemia, immune globulin neutralizes bacterial and viral toxins that harm immune and inflammatory responses.	Before giving immune globulin, monitor the patient's fluid volume and BUN and serum creatinine levels, as ordered, to determine the risk for acute renal failure.
Promethazine	Competes with histamine for H1-receptor sites, thereby antagonizing many histamine effects and reducing allergy signs and symptoms. Promethazine also prevents motion sickness, nausea, and vertigo by acting centrally on medullary chemoreceptive trigger zone and by decreasing vestibular stimulation and labyrinthine function in the inner ear.	Avoid inadvertent intra-arterial injection of promethazine because it can cause arteriospasm. Avoid injecting drugs under the skin; severe tissue damage and gangrene may develop from impaired circulation. Monitor respiratory function because the drug may suppress the cough reflex and cause thickening bronchial secretions, aggravating conditions such as asthma and COPD.
Pyridoxine and Doxylamine	A vitamin used to correct vitamin B6 deficiency and to treat nausea during pregnancy.	Do not breastfeed while taking doxylamine and pyridoxine.
Ondansetron	Blocks serotonin receptors centrally in the chemoreceptor trigger zone and peripherally at	Be aware that oral disintegrating tablets may contain aspartame, which is metabolized to

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	<p>vagal nerve terminals in the intestine. This action reduces nausea and vomiting by preventing serotonin release in the small intestine and by blocking signals to the CNS</p>	<p>phenylalanine and must be avoided in patients with phenylketonuria.</p> <p>Monitor patient closely for signs and symptoms of hypersensitivity to ondansetron because hypersensitivity reactions.</p>
<p><b>Betamethasone</b></p>	<p>Corticosteroids like betamethasone can act through nongenomic and genomic pathways The genomic pathway is slower and occurs when glucocorticoids activate glucocorticoid receptors and initiate downstream effects that promote transcription of anti-inflammatory genes including phosphoenolpyruvate carboxykinase, IL-1-receptor antagonist, and tyrosine amino transferase.</p>	<p>Give daily dose before 9 AM to mimic normal peak corticosteroid blood levels.</p> <p>Increase dosage when patient is subject to stress.</p> <p>Taper doses when discontinuing high-dose or long-term therapy.</p> <p>Do not give live virus vaccines with immunosuppressive doses of corticosteroids.</p>
<p><b>Indomethacin</b></p>	<p>Blocks activity of cyclooxygenase, the enzyme needed to synthesize prostaglandins, which mediate inflammatory response and cause local vasodilation, pain, and swelling. By blocking cyclooxygenase and inhibiting prostaglandins. This NSAID reduces inflammatory symptoms and helps relieve pain.</p>	<p>Monitor patient closely for thrombotic events, including MI and stroke, because NSAIDs increased risk.</p> <p>Monitor liver enzymes, BUN, and CBC.</p>
<p><b>Magnesium Sulfate</b></p>	<p>Assists all enzymes involved in phosphate transfer reactions that use adenosine triphosphate (ATP). Magnesium is required for normal functions of the ATP-dependent sodium potassium pump in muscle membranes.</p> <p>As an anticonvulsant, magnesium depresses the CNS and blocks peripheral neuromuscular impulse transmission by decreasing available acetylcholine.</p>	<p>Observe for and report early evidence of hypermagnesemia: bradycardia, depressed deep tendon reflexes, diplopia, dyspnea, flushing, hypotension, nausea, slurred speech, vomiting, and weakness.</p>
<p><b>Terbutaline Sulfate</b></p>	<p>Stimulates beta-2 adrenergic receptors in the lungs, which is believed to increase production of cAMP. The increased cAMP</p>	<p>Monitor patient's heart rate and rhythm and blood pressure and assess for chest pain.</p>

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	level relaxes bronchial smooth muscles, thereby increasing bronchial airflow and relieving bronchospasm.	For subcutaneous use, inject into lateral deltoid area.
Glyburide	Stimulates insulin release from beta cells in the pancreas. Glyburide also increases peripheral tissue sensitivity to insulin either by enhancing insulin binding to cellular receptors or by increasing the number of insulin receptors.	Expect a higher risk of hypoglycemia when giving drug to a debilitated or malnourished patient or one with adrenal, hepatic, pituitary, or renal insufficiency.  Know that when patient switches from insulin to glyburide, check blood glucose level three times daily before meals.
Insulin	Lowers blood glucose levels by stimulating peripheral glucose uptake by fat and skeletal muscle, and by inhibiting hepatic glucose production. Also enhances protein synthesis, inhibits lipolysis in adipocytes, and inhibits proteolysis.	Monitor patient closely for signs and symptoms of hypoglycemia, which could become severe, causing seizures or even death.
Hydralazine hydrochloride	Exerts a direct vasodilating effect on vascular smooth muscle.  Interferes with calcium movement in vascular smooth muscle by altering cellular calcium metabolism.  Dilates arteries, not veins, which minimizes orthostatic hypotension and increase cardiac output and cerebral blood flow.  Causes reflex autonomic response that increases, cardiac output, heart rate, and left ventricular ejection fraction.	Expect to discontinue drug immediately if patient has lupus-like symptoms, such as arthralgia, fever, myalgia, pharyngitis, and splenomegaly.  Monitor ANA titer, CBC, and lupus erythematosus cell preparation before therapy a periodically as ordered during long-term treatment.
Labetalol	Selectively blocks alpha-1 and beta-2 receptors in vascular smooth muscle and beta-1 receptors in heart to reduce blood pressure and peripheral vascular resistance. Potent beta blockade prevents reflex tachycardiac, which commonly occurs when alpha blockers reduce cardiac output, resting heart rate, or stroke volume.	Be aware that labetalol masks common signs of shock.  Keep patient in supine position for 3 hours after I.V. administration.

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Nifedipine	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 sarcoplasmic reticulum.	Be aware that patients with galactose intolerance should not take nifedipine because the drug contains lactose.  Know that when starting and stopping nifedipine therapy, taper it, as prescribed, over 7 to 14 days.
Calcium gluconate	Increases levels of intracellular and extracellular calcium, which is needed to maintain homeostasis, especially in the nervous and musculoskeletal systems.	Keep patient in a recumbent position for 30 minutes after parenteral administration prevent dizziness from hypotension.
Misoprostol	Misoprostol binds to smooth muscle cells in the uterine lining to increase the strength and frequency of contractions as well as degrade collagen and reduce cervical tone	Advise patient to avoid alcohol and foods that many cause an increase in GI irritation.
Cervidil	Dinoprostone administered intravaginally stimulates the myometrium of the gravid uterus to contract in a manner that is like the contractions seen in the term uterus during labor, resulting in the evacuation of the products of conception from the uterus.	Carefully monitor uterine activity, fetal status and the progression of cervical dilatation and effacement.
Penicillin G	Inhibits final stage of bacterial cell wall synthesis by competitively binding to penicillin-binding proteins inside cell wall.	Give penicillin G benzathine and penicillin G procaine only by deep I.M. injection; I.V. injection may be fatal, and intra-arterial injection may cause extensive organ and tissue necrosis.
Methylergonovine	Methylergometrine acts directly on the smooth muscle of the uterus and increases the tone, rate, and amplitude of rhythmic contractions through binding and the resultant antagonism of the dopamine D1 receptor. Thus, it induces a rapid and sustained tetanic uterotonic effect which shortens the third stage of labor and reduces blood loss.	Mothers should not breast-feed during treatment with Methergine.
Nalbuphine (Nubain)	Interact with an opiate receptor site in the CNS (probably in or associated with the limbic system). The opiate antagonistic	Use nalbuphine cautiously in patients taking other drugs that can cause respiratory depression.

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	effect may result from competitive inhibition at the opiate receptor, but may also be a result of other mechanisms	Keep resuscitation equipment and naloxone readily available to reverse nalbuphine's effects, if needed.
Naloxone--	Naloxone antagonizes the action of opioids, reversing their effects. If a patient has not taken opioids, naloxone does not have a significant effect on patients.	Keep resuscitation equipment readily available during naloxone administration.  Administer parenteral Narcan brand by I.V. route whenever possible.
Fentanyl	Fentanyl binds to opioid receptors, especially the mu opioid receptor, which are coupled to G-proteins. Activation of opioid receptors causes GTP to be exchanged for GDP on the G-proteins which in turn down regulates adenylate cyclase, reducing concentrations of cAMP. Reduced cAMP decreases cAMP dependent influx of calcium ions into the cell.	Know that fentanyl transdermal system should 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.
Ibuprofen	Ibuprofen is considered an NSAID and thus it is a non-selective inhibitor of cyclooxygenase, which is an enzyme involved in prostaglandin (mediators of pain and fever) and thromboxane (stimulators of blood clotting) synthesis via the arachidonic acid pathway.	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.  Avoided in patients with a recent MI because risk of reinfarction increase with NSAID therapy.
acetaminophen	Inhibits the enzyme cyclooxygenase, blocking prostaglandin production and interfering with pain impulse generation in the peripheral nervous system.	Cautiously in patients with hepatic impairment or active hepatic disease, alcoholism, chronic malnutrition, severe hypovolemia, or severe renal impairment.
oxycodone	Alters perception of and emotional response to pain at spinal cord and higher levels of CNS by blocking release of inhibitory neurotransmitters, such as acetylcholine and gamma-aminobutyric acid.	Be aware that excessive use of opioids like oxycodone 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	Hydrocodone binds to the mu	Be aware that hydrocodone increases

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	<p>opioid receptor (MOR) with the highest affinity followed by the delta opioid receptors (DOR). Hydrocodone's agonist effect at the MOR is considered to contribute the most to its analgesic effects.</p>	<p>the risk of abuse, addiction, and misuse.</p> <p>Should not be given to a patient with impaired consciousness, nor should the drug be administered on an as-needed basis.</p>
ketorolac	<p>Ketorolac inhibits key pathways in prostaglandin synthesis which is crucial to its mechanism of action. Although ketorolac is non-selective and inhibits both COX-1 and COX-2 enzymes, its clinical efficacy is derived from its COX-2 inhibition. The COX-2 enzyme is inducible and is responsible for converting arachidonic acid to prostaglandins that mediate inflammation and pain.</p>	<p>Monitor liver enzymes, as ordered.</p> <p>Monitor patients with a history of peripheral edema, heart failure, or hypertension for adequate fluid balance because drug can promote fluid retention.</p>
Hepatitis B vaccine	<p>ENGERIXR-B induces specific humoral antibodies against HBsAg (anti-HBs antibodies). It is generally accepted that an anti-HBs titer greater than 10 IU/L correlates with protection against hepatitis B virus infection. More than 90% of healthy adults, children and neonates developed protective anti-HBs titers one month after completing a primary vaccination schedule of hepatitis B vaccine.</p>	<p>Administering the vaccine, and monitoring for adverse reactions, as well as providing education about vaccine side effects and how to manage them.</p>
Erythromycin eye ointment	<p>Binds with the 50s ribosomal subunit of the 70s ribosome in many types of aerobic, anaerobic, gram-negative and gram positive.</p>	<p>Use cautiously in patients with impaired hepatic function because drug is metabolized in the liver.</p>
Phytonadione	<p>Vitamin K is a cofactor of gamma-carboxylase. Gamma carboxylase attaches carboxylic acid functional groups to glutamate, allowing precursors of factors II, VII, IX, and X to bind calcium ions. Binding of calcium ions converts these clotting factors to their active form, which are then secreted from hepatocytes into the blood, restoring normal clotting</p>	<p>All newborns, whether breastfed or formula fed, receive a one-time intramuscular shot of vitamin K within 6 hours after birth.</p>

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Prenatal vitamins	<p>function.</p> <p>Used: Prenatal supplements give the extra vitamins and minerals needed before and as a pregnancy starts. These types of supplements have different amounts and types of vitamins, minerals, and other additives such as omega-3 fatty acids.</p>	<p>Administer orally.</p> <p>Monitor patient for hypersensitivity reactions, especially if drug previously taken.</p>
MMR vaccine	<p>To protect against measles, mumps, and rubella.</p>	<p>Administering the vaccine, and monitoring for adverse reactions, as well as providing education about vaccine side effects and how to manage them.</p>
Tetanus & reduced diphtheria toxoids/acellular pertussis vaccine	<p>Diphtheria, tetanus, and acellular pertussis vaccine (also known as DTaP) is a combination immunizing agent given by injection to protect against infections caused by diphtheria, tetanus (lockjaw), and pertussis (whooping cough).</p>	<p>Administering the vaccine, and monitoring for adverse reactions, as well as providing education about vaccine side effects and how to manage them.</p>
Lidocaine mucosal gel	<p>Lidocaine is used to temporarily numb and relieve pain from minor burns (including sunburn), skin abrasions, insect bites, and other painful conditions affecting mucous membranes.</p>	<p>Reduce dosage with hepatic or renal failure.</p>



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