Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
Methotrexate	May exert immunosuppressive effects by inhibiting replication and function of T and possibly B lymphocytes. Methotrexate also slows rapidly growing cells, such as epithelial skin cells in psoriasis/ Treats active polyarticular juvenile idiopathic arthritis unresponsive to other therapy (Jones and Bartlett, 2021).	Monitor CBC, liver, and renal function tests before and after; administer subq into abdomen or thigh, increase fluid intake, use sunblock when exposed to sunlight (Jones and Bartlett, 2021).
Mifepristone	Mifepristone works by being an antagonist of glucocorticoid and progesterone receptors. At low doses, mifepristone works by being a selective antagonist of progesterone. It does so by binding to the intracellular progesterone receptor. / Used for medically induced abortions (Autry & Wadhwa, 2022).	Monitor for infection and bleeding, monitor for hypokalemia, watch for signs of hypoglycemia and hypotension
Rhogam	Prevention of Rh isoimmunization appears to be an immunologic blockade of Fc receptors (RcR) within the reticuloendothelial system (RES); other immunomodulatory effects are also possible. Intravenous infusion of anti-D into an Rh-positive recipient leads to antibody coating of the circulating erythrocytes, which are eventually cleared primarily by the spleen. Clearance of sensitized erythrocytes by the RES results in increased platelet counts and reduced bleeding / Manages Rh-negative pregnancies and immune thrombocytopenic purpura (Yoham & Casadesus, 2022).	Closely monitor patients for at least 8 hours to rule out evidence of intravascular hemolysis, monitor CBC and serum creatinine
Promethazine	Competes with histamine for H1 -receptor sites, thereby antagonizing many histamine effects and reducing allergy signs and symptoms.	Drug should not be used within two weeks of delivery due to potential inhibition of platelet aggregation in the newborn, monitor respiratory function because drug may cause

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	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. It also promotes sedation and relieves anxiety by blocking receptor sites in CNS, directly reducing stimuli to the brain. / Treats signs and symptoms of allergic response, nausea and vomiting, or promote nighttime sleep (Jones and Bartlett, 2021)	thickening of secretions and suppress cough reflex (Jones and Bartlett, 2021)
Pyridoxine and Doxylamine	It exerts its effects by competitively antagonizing the binding of free histamine at the H1-receptor binding sites. It antagonizes the effects of histamine in the uterus, GI tract, large blood vessels, and bronchial muscles. Doxylamine binds non-selectively to H1-receptors, both centrally and peripherally, contributing to the sedative effects that also make it an effective sleeping aid. / Treats nausea and vomiting of pregnancy (Brott & Reddivari, 2022).	Monitor kidney function, contraindication is concurrent use of MAOI, use with caution if concurrent with CNS depressant drugs (Brott & Reddivari, 2022).
Ondansetron	Blocks serotonin receptors centrally in the chemoreceptor trigger zone and peripherally at 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. / Prevents nausea and vomiting (Jones and Bartlett, 2021)	Monitor for arrhythmias, electrolyte imbalances, and signs of hypersensitivity (Jones and Bartlett, 2021).
Betamethasone	The anti-inflammatory effect of topical corticosteroids consists of vasoconstriction, inhibition of the release of phospholipase	Limit duration of treatment to 2-4 weeks, may cause immunosuppressive effects (Gabros et al., 2022)

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	A2, and a direct inhibitory effect on DNA and inflammatory transcription factors. Vasoconstriction of the blood vessels within the upper dermis decreases the number of inflammatory mediators being delivered to the region applied / Treat inflammation and pruritis (Gabros et al., 2022)	
Indomethacin	Blocks activity of cyclooxygenase, the enzyme needed to synthesize prostaglandins, which mediate inflammatory response and cause local vasodilation, pain, and swelling / To treat hemodynamically significant patent ductus arteriousius in premature infants weighing 1-3.9 lbs (Jones and Bartlett, 2021)	Shake suspension before administering, monitor blood pressure and CBC because of increased risk for bleeding, assess skin for rash, monitor weight, caution with sun exposure (Jones and Bartlett, 2021).
Magnesium Sulfate	Assists all enzymes involved in phosphate transfer reactions that use adenosine triphosphate (ATP). Magnesium is required for normal function of the ATPdependent sodium–potassium pump in muscle membranes. It may effectively treat digitalis glycoside–induced arrhythmias because correction of hypomagnesemia improves the sodium–potassium pump's ability to distribute potassium into intracellular spaces and because magnesium decreases calcium uptake and potassium outflow through myocardial cell membranes. / Treats mild magnesium deficiency or acute nephritis (Jones and Bartlett, 2021)	Monitor for signs of hypermagnesemia (bradycardia, dyspnea, hypotension, vomiting), frequently assess cardiac status, may cause fetal harm if administered continuously beyond 5-7 days to pregnant women causing hypocalcemia and bone abnormalities in developing fetus (Jones and Bartlett, 2021).
Terbutaline Sulfate	Stimulates beta2 -adrenergic receptors in the lungs, which is believed to increase production	Administer into lateral deltoid area for subq injection, monitor respiratory rate and oxygen

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	of cAMP. The increased cAMP level relaxes bronchial smooth muscles, thereby increasing bronchial airflow and relieving bronchospasm. / Prevents or reverses bronchospasm (Jones and Bartlett, 2021)	saturation, tremors could be a side effect (Jones and Bartlett, 2021).
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. / Used as adjunct to control glucose level in type 2 diabetes (Jones and Bartlett, 2021).	High fat foods lower bioavailability, monitor for hypoglycemia (could cause neonatal hypoglycemia), neonate may experience birth injury or respiratory distress at birth, patient should check with provider before breastfeeding, instruct to take first meal of the day (Jones and Bartlett, 2021).
Insulin	Acts via specific receptor to regulate metabolism of carbohydrates, protein, and fats. Acts on liver, skeletal muscle, and adipose tissue. / For glycemic control of diabetes (Kizior, 2021).	Obtain serum glucose level and Hgb A1c, assess for hypoglycemia, insulin needs may drop for 24-72 hours following delivery but then rises to prepregnancy levels, not distributed in breast milk (Kizior, 2021).
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 which minimizes orthostatic hypotension and increases cardiac output and cerebral blood flow, causes reflex autonomic response that increases cardiac output, ejection fraction, and heart rate, has a inotropic effect on the heart. / Manages severe essential hypertension (Jones and Bartlett, 2021).	Check with prescriber before breastfeeding, monitor CBC, give with food to increase bioavailability, monitor blood pressure and pulse rate, patient should be weighed daily, monitor for orthostatic hypotension (Jones and Bartlett, 2021).
Labetalol	Selectively blocks alpha1 and beta2 receptors in vascular smooth muscle and beta1 receptors in heart to reduce blood pressure and peripheral	Drug is present in breast milk, monitor blood pressure every 5 minutes for 30 minutes, monitor blood glucose if diabetic, if administered through IV stay supine

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	vascular resistance. / Manages hypertension (Jones and Bartlett, 2021).	for 3 hours (Jones and Bartlett, 2021).
Nifedipine	May slow movement of calcium into myocardial and vascular smooth-muscle cells by deforming calcium channels in cell membranes, inhibiting ioncontrolled gating mechanisms, and disrupting calcium release from sarcoplasmic reticulum. Decreasing intracellular calcium level inhibits smooth-muscle cell contraction and dilates arteries, which decreases myocardial oxygen demand, peripheral resistance, blood pressure, and afterload.. / Manages hypertension (Jones and Bartlett, 2021).	May cause fetal harm, drug is present in breast milk, frequently monitor heart rate and rhythm, monitor fluid intake and output and weight due to potential fluid retention (Jones and Bartlett, 2021).
Calcium gluconate	Increases levels of intracellular and extracellular calcium, which is needed to maintain homeostasis, especially in the nervous and musculoskeletal systems. Also plays a role in normal cardiac and renal function, respiration, coagulation, and cell membrane and capillary permeability. Helps regulate the release and storage of neurotransmitters and hormones. / To treat hypocalcemia or provide antacid effects (Jones and Bartlett, 2021).	Pregnancy may alter dosage needs for mother, present in breast milk, store at room temperature and protect from direct light, monitor serum calcium levels, (Jones and Bartlett, 2021).
Misoprostol	Reduces acid secretion from gastric parietal cells, stimulates bicarbonate production from gastric/duodenal mucosa; induces uterine contractions/ Prevents NSAID induced gastric ulcers, treats postpartum hemorrhage (Kizior, 2021).	Question for possibility of pregnancy before administering, avoid magnesium containing antacids, take after meals (Kizior, 2021).

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
Cervidil	Prostaglandin E2 causes contractions in the myometrium via direct stimulation. It binds to G protein-coupled receptors (GPCRs) EP1-4 that lead to a variety of downstream events depending on the EP subtype and cell-type-specific expression patterns. For example, EP receptors in the myometrium act via cell membrane calcium channels and intracellular cyclic 3'5'-adenosine monophosphate (cAMP) / Used for evacuation of uterine contents and labor induction (Xi & Gerriets, 2022).	Monitor for adverse effects like vomiting and pyrexia, monitor fetal status and uterine activity (Xi & Gerriets, 2022).
Penicillin G	Inhibits final stage of bacterial cell wall synthesis by competitively binding to penicillin-binding proteins inside the cell wall. Penicillin-binding proteins are responsible for various steps in bacterial cell wall synthesis. By binding to these proteins, penicillin leads to cell wall lysis. / Treats systemic infections (including syphilis) (Jones and Bartlett, 2021).	Obtain fluid samples for culture and sensitivity tests before administering, reconstitute for injection with D5W or NaCl, monitor for serum sodium level, inject IM deep into large muscle mass (Jones and Bartlett, 2021).
Methylergonovine	Increases tone, rate, amplitude of contraction of uterine smooth muscle / Manages uterine atony, hemorrhage and subinvolution of uterus following delivery of placenta; controls uterine hemorrhage following delivery of anterior shoulder in second stage of labor (Kizior, 2021).	Contraindicated during pregnancy, question history of bowel movements and GI obstruction, assess hydration status, encourage fluid intake (Kizior, 2021).
Nalbuphine (Nubain)	Binds with and stimulates kappa and mu opiate receptors in the spinal cord and higher levels in the CNS. In this way, nalbuphine alters the perception of and emotional response to pain. / As adjunct to balanced	May cause fetal harm (neonatal opioid withdrawal syndrome), avoid prolonged use during pregnancy, have naloxone available, monitor infant for excess sedation and respiratory depression (Jones and Bartlett, 2021).

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	anesthesia, for obstetrical analgesia during labor and delivery, and for preoperative and postoperative analgesia (Jones and Bartlett, 2021).	
Naloxone--	Briefly and competitively antagonizes mu, kappa, and sigma receptors in the CNS, thus reversing analgesia, hypotension, respiratory depression, and sedation caused by most opioids. Mu receptors are responsible for analgesia, euphoria, miosis, and respiratory depression. Kappa receptors are responsible for analgesia and sedation. Sigma receptors control dysphoria and other delusional states. / Treats opioid overdose or adjunct to treat hypotension in neonates caused by septic shock (Jones and Bartlett, 2021).	Drug crosses placental barrier and may precipitate withdrawal, monitor fetus for signs of distress, keep resuscitation equipment available (Jones and Bartlett, 2021).
Fentanyl	Binds to opioid receptor sites in the CNS, altering perception of and emotional response to pain by inhibiting ascending pain pathways. Fentanyl may alter neurotransmitter release from afferent nerves responsive to painful stimuli, and it causes respiratory depression by acting directly on respiratory centers in the brain stem. / Induces and maintains anesthesia (Jones and Bartlett, 2021).	May prolong labor, should not be used during labor and delivery, crosses placental barrier and may produce excessive sedation and respiratory depression in neonate, monitor respiratory status closely (Jones and Bartlett, 2021).
Ibuprofen	Blocks activity of cyclooxygenase, the enzyme needed to synthesize prostaglandins, which mediate inflammatory response and cause local pain, swelling, and vasodilation. By inhibiting prostaglandins, this NSAID reduces inflammatory symptoms and relieves pain. / Relieves mild to moderate pain	Present in breast milk, increases risk of premature closure of the fetal ductus arterisus if given during the third trimester of pregnancy, should be avoided in pregnant women starting at 30 weeks of gestation onward (Jones and Bartlett, 2021).

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	or treat patent ductus arteriosus; migraine related symptoms (Jones and Bartlett, 2021).	
acetaminophen	Inhibits the enzyme cyclooxygenase, blocking prostaglandin production and interfering with pain impulse generation in the peripheral nervous system. Acetaminophen also acts directly on temperature-regulating center in the hypothalamus by inhibiting synthesis of prostaglandin E2. / Relieves mild to moderate pain, reduces fever (Jones and Bartlett, 2021).	Use during pregnancy may increase risk of ADHD after birth, monitor renal function, may reduce fertility (Jones and Bartlett, 2021).
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. / Relieves moderate to severe pain (Jones and Bartlett, 2021).	Avoid prolonged use during pregnancy, not recommended immediately before or during labor, may alter length of time of labor, may produce respiratory depression in neonate, assess pain regularly (Jones and Bartlett, 2021).
hydrocodone	Binds to and activates opioid receptors at sites in the periaquaductal and periventricular gray matter, the ventromedial medulla, and the spinal cord to produce pain relief. / Manages severe pain (Jones and Bartlett, 2021).	Bronchial asthma is a contraindication, prolonged use during pregnancy should be avoided (neonatal opioid withdrawal syndrome), may alter length of time of labor, may produce respiratory depression in newborn through placental barrier, naloxone should be available (Jones and Bartlett, 2021).
ketorolac	Blocks cyclooxygenase, an enzyme needed to synthesize prostaglandins. Prostaglandins mediate inflammatory response and cause local vasodilation, pain, and swelling. They also promote pain transmission from periphery to spinal cord. By blocking cyclooxygenase and inhibiting prostaglandins, this	Increases risk of premature closure of the fetal ductus arterisus if given during the third trimester of pregnancy, should be avoided in pregnant women starting at 30 weeks of gestation onward, contraindicated during labor and delivery, may affect fetal circulation and inhibit uterine contractions, monitor liver enzymes, may affect

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
	NSAID reduces inflammation and relieves pain. / Treats moderate to severe pain (Jones and Bartlett, 2021).	fertility by delaying or preventing rupture of ovarian follicles (Jones and Bartlett, 2021).
Hepatitis B vaccine	The vaccine is a non-infectious subunit of the virus, which leads to an active immunity. Antibodies produced by vaccination target the outer protein coat or surface antigen. This leads to protection against all genotypes (A through H) of the virus and gives a broad immunity. / Immunization of hepatitis B (Hodgens & Marathi, 2022).	Vaccine is not contraindicated for pregnancy or lactation, vaccine contains noninfectious surface antigen which poses no risk of transmission to the fetus (Hodgens & Marathi, 2022).
Erythromycin eye ointment	Penetrates bacterial cell membranes, reversibly binds to bacterial ribosomes,inhibiting RNA-dependent protein synthesis. / Treats blepharitis, conjunctivitis, keratitis, chlamydial trachoma (Kizior, 2021).	Report itching, burning, and inflammation; may increase hepatic enzymes in pregnant women(Kizior, 2021).
Phytonadione	It functions as a cofactor required for the activity of vitamin K-dependent (VKD) proteins, which include factors II (prothrombin), VII, IX, and X, in addition to protein C and protein S. In vitamin K deficiency, phytonadione therapy replenishes stores. Vitamin K is absorbed in the intestinal tract similarly to the way that most dietary lipids are absorbed by uptake into micelles composed of bile salts. They are absorbed into intestinal enterocytes into the lymphatic system and reach venous circulation by way of the thoracic duct. / Treats vitamin K deficiency and hemorrhage (Ingold & Sergeant, 2022).	Monitor INR to assess for effectiveness and for the need to administer another dose, mineral oil reduces oral absorption, contraindicated in hereditary hypoprothrombinemia and heparin over-anticoagulation (Ingold & Sergeant, 2022).

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations
Prenatal vitamins	Promotes DNA synthesis / Reduces risk of neural tube defects in a developing fetus (Merrell & McMurry, 2022).	Monitor for folate deficiency, sexually active women of reproductive age who are not using contraception are encouraged to use anti-epilepsy drugs only to treat epilepsy (Merrell & McMurry, 2022).
MMR vaccine	The MMR vaccine stimulates the immune system to protect against measles, mumps, and rubella. This vaccine is live attenuated and thus is a harmless, less virulent version of the infectious agents from which it provides protection. Since the MMR vaccine is live attenuated, it has excellent efficacy but requires more than one dose to achieve this immunity. / Used for routine immunization of measles, mumps, and rubella (Bailey & Sapra, 2022).	Pregnancy should be discouraged within 28 days of vaccination due to the risk of congenital rubella, monitor for seizures and anaphylaxis following administration (Bailey & Sapra, 2022).
Tetanus & reduced diptheria toxoids/acellular pertussis vaccine	The vaccine produces an active immune response of the body by developing antibodies and antitoxins against the toxoids and acellular pertussis antigens. / Used for immunization of diphtheria, tetanus, and pertussis in infants and young children (Ogden et al., 2022).	Should defer any vaccines with pertussis components in infants or children with suspected or evolving neurological disease including seizures; monitor for pain, swelling, edema, and hemorrhage (Ogden et al., 2022).
Lidocaine mucosal gel	Inhibits conduction of nerve impulses, causing temporary loss of feeling and sensation/ Local anesthetic for childbirth and procedures (Kizior, 2021).	Monitor vitals and electrolytes, monitor ECG, protective measures may need to be put in place until anesthetic wears off (Kizior, 2021).

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations

References:

Autry BM, Wadhwa R. Mifepristone. [Updated 2022 May 8]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557612/

Bailey A, Sapra A. MMR Vaccine. [Updated 2022 Jun 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK554450/

Brott NR, Reddivari AKR. Doxylamine. [Updated 2022 Jun 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK551646/

Gabros S, Nessel TA, Zito PM. Topical Corticosteroids. [Updated 2022 Jul 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK532940/

Hodgens A, Marathi R. Hepatitis B Vaccine. [Updated 2022 Jan 18]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK554400/

Ingold CJ, Sergent SR. Phytonadione (Vitamin K1) [Updated 2022 Jun 12]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557622/

Medications Commonly used in Maternal Newborn

Medication	Mechanism of Action/Use	Nursing considerations

Jones & Bartlett Learning. (2020). 2021 Nurse's Drug Handbook (19 th ed.). Jones & Bartlett Learning

Kizior, R. J. (2021). Saunders Nursing Drug Handbook 2021. Elsevier.

Merrell BJ, McMurry JP. Folic Acid. [Updated 2022 Apr 30]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK554487/

Ogden SA, Ludlow JT, Alsayouri K. Diphtheria Tetanus Pertussis (DTaP) Vaccine. [Updated 2022 Jan 3]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK545173/

Xi M, Gerriets V. Prostaglandin E2 (Dinoprostone) [Updated 2022 Jun 11]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK545279/

Yoham AL, Casadesus D. Rho(D) Immune Globulin. [Updated 2022 May 23]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2022 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK557884/