

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| INHALATION AGENTS | DESCRIPTION | NURSING CONSIDERATIONS |
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| Forane (isoflurane) | <ul style="list-style-type: none"> Forane is of the hydrocarbon series released for general use. It is a non-flammable, non-explosive clear liquid. | <ul style="list-style-type: none"> An inhalation agent, which can be blown-off through ventilation of the lungs with oxygen. Although it is an isomer of Ethrane, its vapors have a strong odor, which may account for the respiratory irritation it can produce. Forane is a potent respiratory depressant but it does not produce cardiovascular instability, although it tends to cause mild sinus tachycardia. Forane provides rapid induction (1-2 minutes) and rapid emergence, with a low incidence of nausea or vomiting. Additionally, it does not stimulate excessive secretions, nor has there been evidence of renal or hepatic toxicity, owing to the minimal metabolism of the agent. Forane is an excellent choice for neurosurgical procedures. Postoperatively, emergence is rapid, but shivering may be seen with Forane, although to a lesser extent than with Ethrane. |
| Ultane (sevoflurane) | <ul style="list-style-type: none"> Ultane is a volatile liquid for inhalation, a nonflammable and nonexplosive liquid administered by vaporization, is a halogenated general inhalation anesthetic drug. | <ul style="list-style-type: none"> An inhalation agent, which can be blown-off through ventilation of the lungs with oxygen. Indicated for induction and maintenance of general anesthesia in adult and pediatric patients for inpatient and outpatient surgery. The low solubility of sevoflurane facilitates rapid elimination via the lungs. Sevoflurane may be associated with glycosuria and proteinuria when used for long procedures at low flow rates. |
| CENTRAL NERVOUS SYSTEM DRUGS <i>Narcotic /Analgesics</i> | DESCRIPTION | NURSING CONSIDERATIONS |
| Alfenta (alfentanil hydrochloride) | <ul style="list-style-type: none"> Binds with opiate receptors in the CNS altering both perception of and emotional response to pain through an unknown mechanism. | <ul style="list-style-type: none"> Dose = Adults & Children over 13 years: Give 0.3 mg slow every 6 Hrs Onset = 1 minute Peak 1.5-2 minutes Use with extreme caution in patients with increased intracranial pressure, head injury, |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| CENTRAL NERVOUS SYSTEM DRUGS <i>Narcotic /Analgesics (Cont.)</i> | DESCRIPTION | NURSING CONSIDERATIONS |
|--|---|---|
| Alfenta (alfentanil hydrochloride) (cont.) | • | <ul style="list-style-type: none"> asthma and other respiratory conditions; in supraventricular tachycardia, seizures, acute abdominal conditions, hepatic or renal disease, renal disease, hypothyroidism, Addison's disease urethral stricture and prostatic hyperplasia and on elderly or debilitated patients. |
| Demerol (meperidine HCL) | <ul style="list-style-type: none"> Binds with opiate receptors in the CNS. Alters both perception and emotional responses to pain through an unknown mechanism. | <ul style="list-style-type: none"> Reversal agent = naloxone (narcan). IV onset = 1 minute Peaks = 5-7 minutes Use with extreme caution in patients with increased intracranial pressure, head injury, asthma and other respiratory conditions; in supraventricular tachycardia, seizures, acute abdominal conditions, hepatic or renal disease, renal disease, hypothyroidism, Addison's disease urethral stricture and prostatic hyperplasia and on elderly or debilitated patients. |
| Diprivan (propofol) | <ul style="list-style-type: none"> Unknown. Rapidly acting IV sedative-hypnotic agent. Induction of general anesthesia. | <ul style="list-style-type: none"> Contraindicated in patients egg lecithin, soybean oil or when general anesthesia or sedation is contraindicated. Propofol can support the growth of microorganisms. Discard tubing and unused portions of drug after 12 hours. Drug should be administered by trained personnel that are not involved in the surgical or diagnostic procedure. |
| Inapsine (droperidol) | <ul style="list-style-type: none"> Unknown. Produces marked tranquilization sedation, and antiemetic effects while allowing for reflex alertness. Causes mild alpha-adrenergic blockade. | <ul style="list-style-type: none"> Preoperative Dose = Adults & children over 12 2.5 to 10 mg IM preoperatively. 1.5 mg per 9 to 11 kg (20 to 25 lb. of body wt) IV. Inapsine potentiates both narcotics and barbiturates, with an onset of 10 minutes and a duration of 2 to 4 hours, to a maximum of 12 hours, depending on the dosage and patient reaction. Inapsine possesses strong antiemetic and antipsychotic properties, and can be mixed with fentanyl, producing Innovar, or given separately with other narcotics. Inapsine can produce hypotension and tachycardia. Fluids and other measures to manage hypotension should be readily available. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| CENTRAL NERVOUS SYSTEM DRUGS <i>Narcotic /Analgesics (Cont.)</i> | DESCRIPTION | NURSING CONSIDERATIONS |
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| Morphine Sulfate | <ul style="list-style-type: none"> Binds with opiate receptors in the CNS altering both perception of and emotional responses to pain through an unknown mechanism. | <ul style="list-style-type: none"> IV onset = 5 minutes Peaks = 20 minutes Use with extreme caution in patients with increased intracranial pressure, head injury, asthma and other respiratory conditions; in supraventricular tachycardia, seizures, acute abdominal conditions, hepatic or renal disease, renal disease, hypothyroidism, Addison's disease urethral stricture and prostatic hyperplasia and on elderly or debilitated patients Reversal agent = naloxone (narcan) |
| Sublimaze (fentanyl citrate) | <ul style="list-style-type: none"> Binds with opiate receptors in the CNS altering both perception of and emotional response to pain through an unknown mechanism. | <ul style="list-style-type: none"> IV Onset = 1-2 minutes Peaks = 3-5 minutes Use with caution in patients with head injury, increased CSF pressure, COPD, decreased respiratory reserve, potentially compromised respirations, hepatic or renal disease and cardiac bradyarrhythmias. Also use with caution in elderly or debilitated patients. Rapid injection of sublimaze can result in a frozen chest syndrome, which can be reversed with a muscle relaxant such as Anectine. Reversal agent = naloxone (narcan) |
| Sufenta (sufentanil citrate) | <ul style="list-style-type: none"> Binds with opiate receptors in the CNS altering both perception of and emotional response to pain through an unknown mechanism. | <ul style="list-style-type: none"> Adjunct to general anesthesia. Administered with nitrous oxide & Oxygen or Oxygen and a muscle relaxant. Use with extreme caution in head injury; in pulmonary, hepatic, or renal disease, in decreased respiratory reserve, and in elderly or debilitated patients. Drug should be administered only by persons trained in the use of IV anesthetics. Reversal agent = naloxone (narcan). |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| CENTRAL NERVOUS SYSTEM DRUGS <i>Narcotic /Analgesics (Cont.)</i> | DESCRIPTION | NURSING CONSIDERATIONS |
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| Ultiva (remifentanil hydrochloride) | <ul style="list-style-type: none"> Binds with mu-opiate receptors throughout CNS, resulting in analgesia and anesthesia. | <ul style="list-style-type: none"> Used for Induction of anesthesia through intubation. Use cautiously in breast-feeding patients because fentanyl analogues are excreted in breast milk. Monitor vital signs and oxygenation continually throughout drug administration Do not use as a single agent in general anesthesia. Skeletal muscle rigidity may occur. Reversal agent = naloxone (narcant) |
| Versed (midazolam HCL) | <ul style="list-style-type: none"> Unknown. Thought to depress CNS at the limbic and subcortical levels of the brain by potentiating the effects of gamma-aminobutyric acid. | <ul style="list-style-type: none"> Healthy adults; 0.5 mg IV over a 2 minute period. Initial dose should not exceed 2.5 mg. Bolus administration is not recommended for conscious sedation. Some patients may respond to as little as 0.5 to 1 mg. Versed. Potent respiratory depressant. Excessive doses or development of hypoxia may lead to agitation, involuntary movement, hyperactivity and combativeness. Reversal agent = flumazenil (Romazicon). |
| NARCOTIC ANALGESICS Reversal Agents | DESCRIPTION | NURSING CONSIDERATIONS |
| Narcan (naloxone hydrochloride) | <ul style="list-style-type: none"> Unknown. Thought to displace previously administered narcotic analgesics from their receptors (competitive antagonism). Has no pharmacologic activity of its own. Known or suspected narcotic-induced respiratory depression, including that caused by pentazocine and propoxphene. | <ul style="list-style-type: none"> Dose = 0.4 to 2 mg IV, SC or IM repeated q 2 to 3 minutes, prn. Use cautiously in patients with cardiac irritability and opiate addiction. Abrupt reversal of opiate induces CNS depression may result in nausea, vomiting, diaphoresis, tachycardia, CNS excitement and increased blood pressure. Be prepared to administer continuous IV infusion. Duration of action of the narcotic may exceed that of naloxone and patients may relapse into respiratory depression. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| NARCOTIC ANALGESICS Reversal Agents DESCRIPTION | DESCRIPTION | NURSING CONSIDERATIONS |
|---|--|--|
| Romazicon (flumazenil) | <ul style="list-style-type: none"> • Benzodiazepine antagonist that competitively inhibits the actions of benzodiazepines on the gamma-aminobutyric acid-benzodiazepine receptor complex. • Complete or partial reversal of sedative effects of benzodiazepines after anesthesia or conscious sedation procedures. | <ul style="list-style-type: none"> • Dose = Initially for adults 0.2mg IV over 15 seconds. • Use cautiously in patients at high risk for seizures. • Use cautiously in patients who may be at risk for unrecognized benzodiazepine dependence such as ICU patients, head injury, psychiatric and alcohol dependent patients. • Monitor patients closely for re-sedation that may occur because duration of action is shorter than that of all benzodiazepines. |
| NEUROMUSCULAR BLOCKERS(Anesthesia Adjuncts) | DESCRIPTION | NURSING CONSIDERATIONS |
| Anectine (succinylcholine) | <ul style="list-style-type: none"> • Prolongs depolarization of the motor end plate. • Adjunct to anesthesia to induce skeletal muscle relaxation; • to facilitate intubation and assist with mechanical ventilation; • To lessen muscle contractions in pharmacologically or electrically induced seizures. | <ul style="list-style-type: none"> • Anectine (succinylcholine) is a rapid acting agent (within 1 minute) with a short duration of action (3 to 10 minutes) depending on the amount given • Contraindicated in patients with hypersensitivity to drug and in those with abnormally low plasma pseudocholinesterase, angle-closure glaucoma, malignant hyperthermia or penetrating eye Injuries • Succinylcholine should be used only by personnel skilled in airway management • Keep airway clear. Have emergency respiratory support equipment immediately available. • Frequently administered prior to intubation, and can be given either by bolus injection or continuous drip infusion when longer periods of muscle relaxation are required • Do not use reversal agents. <p>Use immediately after reconstitution Do not mix with alkaline solutions (thiopental sodium, sodium bicarbonate, or barbiturates).</p> |
| Curare (d-Tubocurarine; tubocurarine; dTc) | <ul style="list-style-type: none"> • Nondepolarizing neuromuscular blocking agent that prevents acetylcholine from binding to receptors on the motor end plate thus blocking depolarization • Adjunct to anesthesia to induce skeletal | <ul style="list-style-type: none"> • Contraindicated in patients with hypersensitivity and in those for whom histamine release is a hazard (asthmatic patients) • should be used only by personnel skilled in airway management • Keep airway clear. Have emergency respiratory support equipment immediately available |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| NEUROMUSCULAR BLOCKERS (Anesthesia Adjuncts) (cont.) | DESCRIPTION | NURSING CONSIDERATIONS |
|---|--|--|
| Curare (d-Tubocurarine; tubocurarine; dTc) (cont.) | <ul style="list-style-type: none"> • muscle relaxation; • to facilitate intubation and assist with mechanical ventilation; • to lessen muscle contractions in orthopedic manipulations. | <ul style="list-style-type: none"> • Interacts with some antibiotics including gentamycin, neomycin and polymyxin B sulfate. Use cautiously during surgical And postoperative period • Before attempting pharmacologic reversal with neostigmine some evidence of spontaneous recovery should be present. • Use only fresh solutions. |
| Norcuron (vecuronium bromide) | <ul style="list-style-type: none"> • Adjunct to anesthesia to induce skeletal muscle relaxation; • to facilitate intubation and assist during surgery with mechanical ventilation. | <ul style="list-style-type: none"> • Contraindicated in patients with hypersensitivity and in those for whom histamine release is a hazard (asthmatic patients). • Should be used only by personnel skilled in airway management. • Keep airway clear. Have emergency respiratory support equipment immediately available. • Before attempting pharmacologic reversal with neostigmine some evidence of spontaneous recovery should be present. • Interacts with some antibiotics including gentamycin, neomycin and polymyxin B sulfate. Use cautiously during surgical And postoperative period. • Store reconstituted solution in refrigerator. Discard after 24 hours. |
| Tracrium (atracurium besylate) | <ul style="list-style-type: none"> • Nondepolarizing neuromuscular blocking agent that prevents acetylcholine from binding to receptors on the motor end plate thus blocking depolarization • Adjunct to anesthesia to induce skeletal muscle relaxation during surgery or mechanical ventilation; | <ul style="list-style-type: none"> • Contraindicated in patients with hypersensitivity and in those for whom histamine release is a hazard (asthmatic patients). • should be used only by personnel skilled in airway management. • Keep airway clear. Have emergency respiratory support equipment immediately available. • Before attempting pharmacologic reversal with neostigmine some evidence of spontaneous recovery should be present. • Interacts with some antibiotics including gentamycin, neomycin and polymyxin B sulfate. Use cautiously during surgical And postoperative period. • It is not recommended to use L/R as solution for injection. |
| Zemuron (rocuronium) | <ul style="list-style-type: none"> • Nondepolarizing neuromuscular blocking agent that prevents acetylcholine from binding to receptors on the motor end plate thus blocking depolarizationAdjunct to | <ul style="list-style-type: none"> • Contraindicated in patients with hypersensitivity and in those for whom histamine release is a hazard (asthmatic patients). • Should be used only by personnel skilled in airway management. • Keep airway clear. Have emergency respiratory support equipment immediately |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| NEUROMUSCULAR BLOCKERS (Anesthesia Adjuncts) (cont.) | DESCRIPTION | NURSING CONSIDERATIONS |
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| Zemuron (rocuronium (cont.)) | anesthesia to induce skeletal muscle with relaxation; to facilitate intubation and assist mechanical ventilation. | <ul style="list-style-type: none"> • available. • Before attempting pharmacologic reversal with neostigmine some evidence of spontaneous recovery should be present. • Interacts with some antibiotics including gentamycin, neomycin and polymyxin B sulfate. Use cautiously during surgical And postoperative period. • Store reconstituted solution in refrigerator. Discard after 24 hours. |
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| NEUROMUSCULAR BLOCK REVERSAL <i>Cholinergics</i> | DESCRIPTION | NURSING CONSIDERATIONS |
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| Prostigmin (neostigmine methylsulfate) | <ul style="list-style-type: none"> • Inhibits the destruction of acetylcholine released from the parasympathetic and somatic efferent nerves. • Acetylcholine accumulates, promoting increased stimulation of the receptors • Antidote for nondepolarizing neuromuscular blocking agents. | <ul style="list-style-type: none"> • Use cautiously in patients with bronchial asthma, bradycardia, seizure disorders, recent coronary occlusion, vagotonia, hyperthyroidism, arrhythmias and peptic ulcer. • Monitor vital signs frequently especially respirations. • Have atropine injection available. • Observe closely for improvement in strength, vision and ptosis 45 to 60 minutes after each dose. • Contraindicated in patients with hypersensitivity to cholinergics or with peritonitis, mechanical obstruction of the intestine or urinary tract. |
| Reversol/Tensilon (edrophonium chloride) | <ul style="list-style-type: none"> • Inhibits the destruction of acetylcholine released from the parasympathetic and somatic efferent nerves. • Acetylcholine accumulates, promoting increased stimulation of the receptors. • As a curare antagonist (to reverse non-depolarizing neuromuscular blocking action). | <ul style="list-style-type: none"> • Contraindicated in patients with hypersensitivity to anticholinesterase agent and those with mechanical obstruction of the intestine or urinary tract. • This cholinergic has the most rapid onset but shortest duration. • Monitor vital signs frequently especially respirations. • Have atropine injection available. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| ANTI-CHOLINERGICS | DESCRIPTION | NURSING CONSIDERATIONS |
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| Atropine sulfate | <ul style="list-style-type: none"> Inhibits acetylcholine at the parasympathetic neuroeffector junction blocking vagal effects on the SA and AV nodes: this enhances conduction through the AV node and speeds heart rate. Preoperatively to diminish secretions and block cardiac vagal reflexes. | <ul style="list-style-type: none"> Use cautiously in patients with Down Syndrome because they may be more sensitive to the drug. IV administer via direct into a large vein or IV tubing over at least 1 minute Be aware that many adverse reactions vary with the dose Monitor patients for paradoxical initial bradycardia especially those receiving small doses (0.4 to 0.6 mg). This usually disappears within 2 minutes. Watch for tachycardia in cardiac patients because it may precipitate ventricular fibrillation. |
| Robinul (glycopyrrrolate) | <ul style="list-style-type: none"> Blockade of adverse cholinergic effects caused by anticholinesterase agents used to reverse neuromuscular blockade. Preoperatively to diminish secretions and block cardiac vagal reflexes. | <ul style="list-style-type: none"> Use cautiously in patients with autonomic neuropathy, hyperthyroidism, coronary artery disease, arrhythmias, heart failure, hypertension, hiatal hernia, hepatic or renal disease and ulcerative colitis. |
| ANTIMETICS | DESCRIPTION | NURSING CONSIDERATIONS |
| Reglan (metoclopramide hydrochloride) | <ul style="list-style-type: none"> Stimulates motility of the upper GI tract, also increases lower esophageal sphincter tone and blocks dopamine receptors at the chemoreceptor trigger zone. Prevention or reduction of nausea and vomiting. | <ul style="list-style-type: none"> Use cautiously in patients with history of depression, Parkinson's disease and hypertension. Give low doses (10 mg or less by direct injection over 1 to 2 minutes. Dilute doses larger than 10 mg in 50 ml of compatible diluent and infuse over at least 15 minutes. Know that drug is compatible with D₅W, 0.9% NaCl for injection and dextrose 5% in NaCl 0.45%. For prevention of postoperative nausea and vomiting in adults, give 10 to 20 mg near the end of the surgical procedure. Closely monitor blood pressure in patients receiving IV form of drug. |
| ANTIULCER DRUGS | DESCRIPTION | NURSING CONSIDERATIONS |
| Zantac (ranitidine hydrochloride) | <ul style="list-style-type: none"> Competitively inhibits the action of H₂ at receptor sites of the parietal cells decreasing gastric acid secretion. | <ul style="list-style-type: none"> Use cautiously in patients with hepatic dysfunction. Avoid using aluminum-bases needles or other equipment when mixing or administering drug. When administering by IV push, dilute to a total volume of 20 ml and inject over a period of 5 minutes. No dilution is necessary when administering IM To prepare IV injection, dilute 50 mg in 100 ml of compatible solution and infuse |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| ANTIULCER DRUGS (cont.) | DESCRIPTION | NURSING CONSIDERATIONS |
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| Zantac (ranitidine hydrochloride (cont.)) | | <p>over 15 to 20 minutes.</p> <ul style="list-style-type: none"> • Compatible solutions include 0.9% NaCl for injection, D₅W injection, 5% sodium bicarbonate injection or lactated Ringer's injection. • Do not add other drugs to the solution. If used with a primary IV fluid system, discontinue the primary solution during the infusion. |
| ADRENERGICS (<i>Sympathomemetics</i>) | DESCRIPTION | NURSING CONSIDERATIONS |
| Adrenalin (epinephrine) | <ul style="list-style-type: none"> • Stimulates alpha and beta-adrenergic receptors in the sympathetic nervous system. • Indicated for treatment of: <ul style="list-style-type: none"> • Bronchospasm, • hypersensitivity reaction, anaphylaxis • To prolong local anesthetic effect. • To restore cardiac rhythm in cardiac arrest. | <ul style="list-style-type: none"> • Use extreme caution in patients with long-standing bronchial asthma and emphysema who have developed degenerative heart disease. Use cautiously in elderly patients and in those with hyperthyroidism, CV disease, hypertension, psychoneurosis and diabetes • In Parkinson's disease drug increases rigidity and tremor. • Epinephrine is drug of choice in emergency treatment of acute anaphylactic reactions. • IV use D₅W, NaCl or lactated Ringers. • Avoid IM administration of parenteral suspension into buttocks. Gas gangrene may occur because epinephrine reduces oxygen tension of the tissues encouraging the growth of contaminating organisms. • |
| Neo-Synephrine (phenylephrine hydrochloride) | <ul style="list-style-type: none"> • Predominantly stimulates alpha-adrenergic receptors in the sympathetic nervous system. • Indicted for treatment of: <ul style="list-style-type: none"> • Hypotensive emergencies during spinal Anesthesia. • Prolongation of spinal anesthesia. • Vasoconstrictor for regional anesthesia. | <ul style="list-style-type: none"> • Use with extreme caution in patients with heart disease, hyperthyroidism, severe arteriosclerosis, bradycardia, partial heart block, myocardial disease or sulfite sensitivity and in elderly patients. • For direct IV injection dilute 10 mg with 9 ml sterile water for solution containing 1 mg/ml • IV infusions are usually 10 mg of drug to 500 ml of D₅W or 0.9% NaCl for injection. • Use a Central Venous Cath or large vein as in the antecubital fossa to minimize risk of extravagation. • Use a continuous infusion pump to regulate flow rate. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| ANTICOAGULANTS | DESCRIPTION | NURSING CONSIDERATIONS |
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| Coumadin (warfarin sodium) | <ul style="list-style-type: none"> • Inhibits vitamin K-dependent activation of clotting factors II, VII, IX and X. • Treatment of pulmonary embolism associated with deep vein thrombosis, MI, rheumatic heart disease with heart valve damage, prosthetic heart valves and chronic atrial fibrillation. | <ul style="list-style-type: none"> • Use cautiously in patients with diverticulitis, colitis, mild or moderate hypertension and mild or moderate hepatic or renal disease; with drainage tubes in any orifice; with regional or lumbar block anesthesia; or in any condition that increases risk of hemorrhage and in breast-feeding patients. • Pt and INR determinations are essential for proper control. • Maintain PT at one and one-half to two times normal. • Half-life of warfarin's anticoagulant effect is 36 to 44 hours. • Effect can be neutralized by vitamin K injections. |
| Heparin (heparin sodium) | <ul style="list-style-type: none"> • Accelerates formation of antithrombin III-thrombin complex and deactivates thrombin, preventing conversion of fibrinogen to fibrin. • Full-dose treatment IV therapy for DVT, MI and pulmonary embolism. • Fixed low-dose therapy for venous thrombus, pulmonary embolism arterial fibrillation with embolus and postoperative DVT and prevention of DVT. | <ul style="list-style-type: none"> • Use cautiously during menses; in patients with mild hepatic or renal disease, alcoholism, occupations with high risk of physical injury; immediately postpartum and in patients with history of allergies, asthma or GI ulcerations. • Check order and vial carefully. Heparin comes in various concentrations. • To treat heparin overdose use protamine sulfate, a heparin antagonist, as ordered. • Know that abrupt withdrawal may cause increased coagulability. |
| Lovenox (enoxaparin sodium) | <ul style="list-style-type: none"> • Low-molecular-weight heparin derivative that accelerates formation of antithrombin III-thrombin complex and deactivates thrombin, preventing conversion of fibrinogen to fibrin. Enoxaparin has a higher anti-factor Xa-to anti-factor IIa-activity ratio. • To prevent pulmonary embolism and deep vein thrombosis (DVT) after hip or knee replacement surgery. • Hip replacement patients may receive a dose of 40mg SC 12 hours preoperatively. • To prevent pulmonary embolism and DVT after abdominal surgery. | <ul style="list-style-type: none"> • Use with extreme caution in patients with history of heparin-induced thrombocytopenia, aneurysms, cerebrovascular hemorrhage, uncontrolled hypertension or threatened abortion. • Patients receiving low-molecular weight heparins or heparinoids who have epidural or spinal anesthesia or spinal puncture are at risk for developing epidural or spinal hematoma that can result in long-term paralysis. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| HEMOSTATIC AGENTS | DESCRIPTION | NURSING CONSIDERATIONS |
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| Avetine (Microfibrillar collagen) | <ul style="list-style-type: none"> Hemostatic agents reduce capillary bleeding and arrest blood flow, thereby assisting in blood clotting during surgery. | <ul style="list-style-type: none"> Avitine is applied directly to the bleeding area in dry-powdered form, but will adhere to wet gloves, instruments, or tissue surfaces. Handle with smooth, dry forceps. |
| Gelfoam (Absorbable gelatin sponge) | <ul style="list-style-type: none"> Hemostatic agents reduce capillary bleeding and arrest blood flow, thereby assisting in blood clotting during surgery. | <ul style="list-style-type: none"> Placed topically on the bleeding surface to absorb blood and reduce bleeding. Gelfoam is usually soaked in Topical thrombin for greater absorbency. Gelfoam does not have to be removed. |
| Surgicel (Oxidized cellulose) | <ul style="list-style-type: none"> Hemostatic agents reduce capillary bleeding and arrest blood flow, thereby assisting in blood clotting during surgery. | <ul style="list-style-type: none"> Placed topically on the bleeding surface to absorb blood and reduce bleeding. Oxidized cellulose should be removed after homeostasis has been accomplished. |
| Topical Thrombin | <ul style="list-style-type: none"> Hemostatic agents reduce capillary bleeding and arrest blood flow, thereby assisting in blood clotting during surgery. | <ul style="list-style-type: none"> Topical thrombin is reconstituted before use, and is generally used with Gelfoam for greater absorbency. Topical thrombin also comes in a spray form, which may be sprayed directly on area. |
| MISCELLANEOUS ANTAGONISTS AND ANTIDOTES | DESCRIPTION | NURSING CONSIDERATIONS |
| Amicar (aminocaproic acid) | <ul style="list-style-type: none"> Inhibits plasminogen activator substances and to a lesser degree blocks antiplasmin activity by inhibiting fibrinolysis. For excessive bleeding resulting from hyperfibrinolysis. | <ul style="list-style-type: none"> Use cautiously in patients with cardiac, hepatic or renal disease. Dilute solution with sterile water for injection, 0.9% NaCl for injection, D₅W or Ringers injection. Infuse slowly. |
| Protamine (protamine sulfate) | <ul style="list-style-type: none"> A heparin antagonist that forms a physiologically inert complex with heparin sodium. | <ul style="list-style-type: none"> Use cautiously after cardiac surgery. Calculate dosage carefully. One mg of protamine neutralized 90 to 115 units of heparin depending on salt (heparin calcium or heparin sodium) and source of heparin (beef or pork). Administer slowly by direct IV injection. Have emergency equipment available to treat shock. Know that risk of a hypersensitivity reaction is increased in patients with known hypersensitivity to fish, vasectomized or infertile males, or patients taking protamine-insulin products. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| ANTIDIABETIC DRUGS | DESCRIPTION | NURSING CONSIDERATIONS |
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| Insulins (See product literature) | <ul style="list-style-type: none"> • Increases glucose transport across muscle and fat cell membranes to reduce blood glucose level. • Promotes conversion of glucose to its storage form of glycogen; triggers amino acid uptake and conversion to protein in muscle cells and inhibits protein degradation; • Stimulates triglyceride formation and inhibits release of free fatty acids from adipose tissue; and • Stimulates lipoprotein lipase activity, which converts circulating lipoproteins to fatty acids. | <ul style="list-style-type: none"> • Dosage is always expressed in USP units. • Use only the syringes calibrated for the particular concentration of insulin administered (U-55 must be administered with a U-100 syringe because no syringes are made for this strength. • To mix insulin suspension, swirl vial gently or rotate between palms . Do not shake. • Know that regular insulin is used in patients with circulatory collapse, diabetic ketoacidosis or hyperkalemia. • Do not use intermediate or long acting insulins for coma or other emergency requiring rapid drug action. |
| ANTI-INFECTIVE DRUGS | DESCRIPTION | NURSING CONSIDERATIONS |
| Aminoglycosides | | |
| Garamycin (gentamycin sulfate) | <ul style="list-style-type: none"> • Inhibits protein synthesis by binding directly to the 30S ribosomal subunit. • Generally bactericidal. | <ul style="list-style-type: none"> • Use cautiously in neonates, infants, elderly patients, and patients with impaired renal function or neuromuscular disorders. • When giving IV dilute with 50 to 200 ml of D₅W or 0.9% NaCl injection and infuse over 30 minutes to 2 hours. After completing IV infusion, flush the line with 0.9% NaCl solution or D₅W. |
| Mycifradin (neomycin sulfate) | <ul style="list-style-type: none"> • Inhibits protein synthesis by binding directly to the 30S ribosomal subunit. • Generally bactericidal | <ul style="list-style-type: none"> • For preoperative disinfection. • Ototoxic and nephrotoxic properties of neomycin limit its usefulness • Drug is available in combination with polymyxin B as a urinary bladder irrigant |
| Nebcin (tobramycin sulfate) | <ul style="list-style-type: none"> • Inhibits protein synthesis by binding directly to the 30S ribosomal subunit. • Generally bactericidal. | <ul style="list-style-type: none"> • Use cautiously in elderly patients, and patients with impaired renal function or neuromuscular disorders. • When giving IV dilute with 50 to 100 ml of D₅W or 0.9% NaCl injection and infuse over 20 minutes to 60 minutes. After completing IV infusion, flush the line with 0.9% NaCl solution or D₅W. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| Cephalosporins | DESCRIPTION | NURSING CONSIDERATIONS |
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| Ancef/Kefzol (cefazolin sodium) | <ul style="list-style-type: none"> A first generation cephalosporin that inhibits cell-wall synthesis, promoting osmotic instability; usually bactericidal. | <ul style="list-style-type: none"> Reconstitute with sterile water, bacteriostatic water or 0.9% NaCl solution as follows: 2 ml to 500mg vial: 2.5 ml to 1 g vial. Shake well until dissolved. |
| Rocephin (ceftriaxone sodium) | <ul style="list-style-type: none"> A third generation cephalosporin that inhibits cell-wall syntheses promoting osmotic instability; usually bactericidal. | <ul style="list-style-type: none"> Use cautiously in patients with a history of sensitivity to penicillin and in breast-feeding women. Reconstitute with sterile water for injection, 0.9% NaCl injection D5W or D10W injection. IV dilutions are stable for 23 hours at room temperature. |
| Penicillins | DESCRIPTION | NURSING CONSIDERATIONS |
| Totacillin/Omnipen/Polycillin (ampicillin) | <ul style="list-style-type: none"> An aminopeccillin that inhibits cell-wall synthesis during microorganism multiplication; Bacteria resist ampicillin by producing penicillinases-enzymes that hydrolyze ampicillin. | <ul style="list-style-type: none"> Use cautiously in patients with other drug allergies, especially to cephalosporins or in those with mononucleosis (high risk of rash). Do not mix with solutions containing dextrose or fructose because these solutions promote rapid breakdown of ampicillin. Reconstitute with bacteriostatic water for injection. |
| Sulfonamides | DESCRIPTION | NURSING CONSIDERATIONS |
| Gantrisin (sulfisoxazole) | <ul style="list-style-type: none"> Inhibits formation of dihydrofolic acid from PABA, decreasing bacterial folic acid syntheses; Bacteriostatic. | <ul style="list-style-type: none"> Use cautiously in patients with impaired hepatic or renal function, severe allergy or bronchial asthma and G6PD deficiency. |
| Miscellaneous Anti-Effective | DESCRIPTION | NURSING CONSIDERATIONS |
| Aerosporin (polymyxin B sulfate) | <ul style="list-style-type: none"> Hinders bacterial cell-wall synthesis damaging the bacterial plasma membrane and making the cell more vulnerable to osmotic pressure . Bactericidal. | <ul style="list-style-type: none"> Use cautiously in those with impaired renal function or myasthenia gravis. |
| Azactam (aztreonam) | <ul style="list-style-type: none"> Inhibits bacterial cell-wall synthesis ultimately causing cell-wall destruction: Bactericidal. | <ul style="list-style-type: none"> Use cautiously in elderly patients and in those with impaired renal function Give IV infusions over 20 minutes to 1 hour. |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| Miscellaneous Anti-Effective(cont.) | DESCRIPTION | NURSING CONSIDERATIONS |
|--|---|--|
| Bacient/Baci-IM (bacitracin) | <ul style="list-style-type: none"> Hinders bacterial cell-wall synthesis damaging the bacterial plasma membrane and making the cell more vulnerable to osmotic pressure. | <ul style="list-style-type: none"> Use cautiously in patients with impaired hepatic or renal function, acute intermittent porphyria and G6PD deficiency and with other drugs that cause bone marrow suppression or blood disorders. |
| Chloromycetin Sodium Succinate (chloramphenicol sodium succinate) | <ul style="list-style-type: none"> Inhibits protein synthesis by binding directly to the 30S ribosomal subunit. Generally bactericidal. | <ul style="list-style-type: none"> Use cautiously in patients with impaired hepatic or renal function, acute intermittent porphyria and G6PD deficiency and with other drugs that cause bone marrow suppression or blood disorders. Reconstitute 1-g vial of power for injection with 10 ml of sterile water for injection. Concentration will be 100 mg/ml. Stable for 30 days at room temperature, but refrigeration recommended. |
| Cleocin Phosphate (clindamycin phosphate) | <ul style="list-style-type: none"> Inhibits protein synthesis by binding directly to the 30S ribosomal subunit. Indicated for sensitive aerobic and anaerobic organisms. | <ul style="list-style-type: none"> Know that drug does not penetrate blood-brain barrier For IV infusion, dilute each 300 mg in 50 ml solution and give no faster than 30 mg/minute (over 10 to 60 minutes). |
| Vancocin (vancomycin hydrochloride) | <ul style="list-style-type: none"> Hinders bacterial cell-wall synthesis damaging the bacterial plasma membrane and making the cell more vulnerable to osmotic pressure. Interferes with RNA synthesis. | <ul style="list-style-type: none"> Use cautiously in patients receiving other neurotoxic nephrotoxic or ototoxic drugs. For IV infusion dilute in 200 ml 0.9% NaCl injection or D5W and infuse over 60 to 90 minutes. Monitor patient carefully for “redneck” syndrome, which can occur if drug is infused too rapidly. (maculopapular rash on face, neck, trunk, and extremities; pruritus and hypotension associated with histamine release). If this reaction occurs, stop infusion and notify the doctor. |

| LOCAL ANESTHETICS | DESCRIPTION | NURSING CONSIDERATIONS |
|---|---|--|
| Bupivacaine, /Marcaine/Sensorcaine (bupivacaine hydrochloride) | <ul style="list-style-type: none"> Peripheral Nerve block 0.23% solution 5 ml (12.5 mg) 0.5% solution 5 ml (25 mg) | <ul style="list-style-type: none"> Contraindicated in children under 12 years. Should not be used for IV regional anesthesia (Bier Block). Use solutions with epinephrine cautiously in patients with CV disorders and in body areas with limited blood supply (ears, nose, fingers, toes). |

SURGICAL SERVICES INTRAOPERATIVE MEDICATIONS

| LOCAL ANESTHETICS (cont.) | DESCRIPTION | NURSING CONSIDERATIONS |
|--|--|---|
| Lidocaine/Xylocaine (lidocaine hydrochloride) | <ul style="list-style-type: none"> • Anesthesia other than spinal. • Dosages for adults: • Maximum single dose is 4.5 mg/kg or 300 mg.. • With epinephrine maximum dose is 7 mg/kg or 500 mg.. | <ul style="list-style-type: none"> • Contraindicated in patients with inflammation or infection in puncture region, septicemia, severe hypertension, and neurologic disorders. • Dose and interval are increased with epinephrine. • Use solutions with epinephrine cautiously in patients with CV disorders and in body areas with limited blood supply (ears, nose, fingers and toes). |

OPHTHALMOLOGY DRUGS

| TYPE OF AGENT | EXAMPLES | COMMENTS |
|--------------------|---|--|
| Miotic | <ul style="list-style-type: none"> • Miochol, • Pilocarpine HCL, • Miostat 0.01%, • Carbochol, D.F.P., • Floropryl | <ul style="list-style-type: none"> • Used to constrict the pupil and to reduce intraocular pressure. Used in cataract surgery to help prevent loss of vitreous humor. |
| Enzymatic | <ul style="list-style-type: none"> • Alpha Chymar, • Zolace, • Wydase. | <ul style="list-style-type: none"> • Used during cataract surgery to dissolve the zonule fibers that attach the Lens of the eye. |
| Topical Anesthetic | <ul style="list-style-type: none"> • Tetracaine HCl, • Ophtanie, • Lidocaine (1% or 2%) | <ul style="list-style-type: none"> • Applied to reduce pain sensation in and on the eye |
| Diagnostic | <ul style="list-style-type: none"> • Fluorescein. | <ul style="list-style-type: none"> • Used to stain the cornea to reveal under an ultraviolet light any interruptions in the normal surface of the cornea |

**SURGICAL SERVICES
INTRAOPERATIVE MEDICATIONS**

NOTES: