|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Nicotinic Agonist**  **Prototypes:** Nicotine patch | | **Therapeutic Effects:**   * Used for nicotine addiction by slowly reducing dose and avoiding withdrawal effects | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * Hazardous drug; use safe handling and disposal precautions * Check for allergy to adhesives * Use cautiously in patients with recent myocardial infarction, serious arrhythmias, coronary artery disease, severe or worsening angina, hypertension, vasospastic diseases, or peripheral vascular disease * Patients taking monoamine oxidase inhibitors (MAOIs) require lower dosage * Can cause fetal harm | * aid smoking cessation * relief of nicotine withdrawal | | * rash at site of application * irregular heart rate/palpitations * nicotine overdose (see nursing considerations) | * Discontinue use and call provider if:   + Allergic reaction such as difficulty breathing or rash   + Irregular heartbeat or palpitations   + Symptoms of nicotine overdose such as nausea, vomiting, dizziness, weakness, and rapid heartbeat * ensure client is not smoking while on patch (risk for nicotine overdose) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Muscarinic Agonist**  **Prototypes:** pilocarpine | | **Therapeutic Effects:**   * Controls intraocular pressure in glaucoma | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * Remove contact lens before administration * Apply light finger pressure on lacrimal sac for 2 minutes after instilling to minimize systemic absorption | * management of intraocular pressure in glaucoma | | * caution client with night driving as medication can decrease visual acuity | * apply pressure on lacrimal sac after instilling   Lacrimal Sac by OpenStax Microbiology is licensed under [CC BY 2.0](https://creativecommons.org/licenses/by/2.0/)Diagram  Description automatically generated |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Muscarinic Antagonist**  **Prototypes: Atropine** | | **Therapeutic Effects:**   * dose dependent – reduce secretions, increase HR, decrease GI motility | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * Can be administered IM and IV * Use with caution in older adults | * Symptomatic bradycardia * Inhibition of salivation and secretions * Preoperative/preanesthetic medication to inhibit salivation and secretions. | | * arrythmias * CNS: anxiety, dizziness, vertigo * constipation * urinary retention | * Monitor for overdose: urine retention, abnormal heartbeat, dizziness, passing out, difficulty breathing, weakness, or tremors |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Alpha-1 Agonist**  **Prototypes: Phenylephrine and Pseudoephedrine** | | **Therapeutic Effects:**   * hypotension, shock, nasal congestion, decrease secretions | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * PO or IV * Contraindicated with MAOIs * Use cautiously in patients with glaucoma, hypertension, or enlarged prostate | * Hypotension/shock: Treatment of hypotension, vascular failure in shock. * Hypotension during anesthesia: As a vasoconstrictor in regional analgesia. * Nasal congestion: As a decongestant. | | * hypertension * urinary retention * anxiety, dizziness * dyspnea | * Monitor blood pressure (or mean arterial pressure), heart rate; cardiac output (as appropriate), intravascular volume status, pulmonary capillary wedge pressure (as appropriate); * monitor infusion site closely |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Alpha-1 Antagonist**  **Prototypes: Tamsulosin** | | **Therapeutic Effects:**   * Relaxes smooth muscle in bladder/prostate to improve urine flow | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * PO * should be administered ~30 minutes following the same meal each day. * avoid using with other alpha-blockers | * Benign prostatic hyperplasia: Treatment of signs and symptoms of benign prostatic hyperplasia (BPH) * Off-label use in chronic prostatitis/chronic pelvic pain syndrome in males; lower urinary tract symptoms in males; ureteral calculi expulsion; ureteral stent-related urinary symptoms. | | * orthostatic hypotension * ejaculation failure * infection * dizziness * headache * rhinitis | * Monitor blood pressure, especially after first dose * Advise client to change positions slowly |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Alpha-2 Agonist**  **Prototypes: Clonidine** | | **Therapeutic Effects:**   * treat hypertension, or ADHD | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * PO (immediate-release and slow-release), transdermal * dosage is usually adjusted to clients BP and tolerance | * Treatment of attention-deficit/ hyperactivity disorder (monotherapy or as adjunctive therapy) * Hypertension (immediate-release tablet and transdermal patch) * Vasomotor symptoms associated with menopause | | * hypotension * bradycardia * sedation * rebound hypertension if stopped abruptly | * Monitor blood pressure and pulse rate frequently * Never stop medication abruptly |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Beta-1 Agonist**  **Prototypes: Dobutamine** | | **Therapeutic Effects:**   * Increases heart rate, force of heart contraction, and speed of conduction between SA to AV nodes | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * IV only * Must be administered with infusion device * Following IV administration, the onset of action of dobutamine occurs within 2 minutes. Peak plasma concentrations of the drug and peak effects occur within 10 minutes after initiation of an IV infusion. * Continuously monitor ECG, blood pressure, cardiac output, and urine output during therapy | * treat cardiogenic shock and severe heart failure to increase contractility and cardiac output | | * marked increase in heart rate and blood pressure * headache * nausea * dyspnea | * Report all adverse reactions promptly, especially labored breathing, angina, palpitations, and dizziness * monitor vital signs closely (client must be on continuous ECG monitoring) |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Beta-1 Antagonist**  **Prototypes: Metoprolol** | | **Therapeutic Effects:**   * Selective beta-1 blocker * Decreases blood pressure or controls rapid heart rate | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * IV and PO * always assess apical HR prior to administration | * Angina: Long-term treatment of angina pectoris. * Heart failure with reduced ejection fraction (ER oral formulation): Treatment of stable, symptomatic heart failure * Hypertension: Management of hypertension. * Myocardial infarction: Treatment of hemodynamically stable acute myocardial infarction to reduce cardiovascular mortality | | * bradycardia * hypotension * worsening heart failure * CNS: fatigue, dizziness, depression, insomnia, nightmares * GI upset * GU: erectile dysfunction * Respiratory: dyspnea and wheezing | * Always assess apical HR and if less than 60, do not administer and call the prescriber unless other parameters are provided * Monitor blood sugar in diabetic patients because drug can mask symptoms of hypoglycemia |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Beta-2 Agonist**  **Prototypes: Albuterol** | | **Therapeutic Effects:**   * bronchodilation | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * oral inhalation * can be given IV and PO * wait at least 2 minutes between inhalations | * bronchodilation in asthma or COPD * Off-label: treatment of hyperkalemia | | * Hypersensitivity * Can cause paradoxical bronchospasm * Report significantly increased heart rate and blood pressure, which may require the drug to be discontinued | * If more than 1 inhalation is ordered, wait at least 2 minutes between inhalations * Use spacer device to improve drug delivery, if appropriate |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Beta-2 Antagonist**  **Prototypes: Propranolol** | | **Therapeutic Effects:**   * Decrease blood pressure and heart rate * Prevent migraines * Manage tremors | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * Give immediate release formulations on an empty stomach * Do not crush ER formulations * Contraindicated in patients with asthma, COPD, or bradycardia * Use cautiously in patients who have diabetes mellitus because drug masks some symptoms of hypoglycemia * Use with caution in patients with impaired hepatic or renal function * During IV administration, monitor blood pressure, ECG, and heart rate frequently | * Angina, chronic stable: To decrease angina frequency and increase exercise tolerance in patients with angina pectoris. * Cardiac arrhythmias: Control of supraventricular arrhythmias (eg, atrial fibrillation and flutter, atrioventricular nodal reentrant tachycardia) and ventricular tachycardias * Essential tremor: Management of familial or hereditary essential tremor. * Hypertension: Management of hypertension. * Migraine headache prophylaxis * Myocardial infarction, early treatment and secondary prevention. | | * Bronchoconstriction * Hypotension * Bradycardia * Worsening heart failure * Other adverse effects similar to metoprolol | * Check BP and apical pulse before giving drug; withhold and notify prescriber if apical pulse is less than 60 or systolic blood pressure is less than 100 unless other parameters are provided * Monitor BP, HR frequently * Abrupt withdrawal of drug may cause exacerbation of angina or myocardial infarction. To discontinue drug, gradually reduce dosage over 1 to 2 weeks |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Catecholamine**  **Prototypes: Epinephrine and Norepinephrine** | | **Therapeutic Effects:**   * treatment of anaphylaxis * cardiac resuscitation | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * IV, IM, SC * Discard IV solution if discolored * Contraindicated for use in fingers, toes, ears, nose, or genitalia when used with local anesthetic | * Reversal of severe allergic reaction, bronchodilation, increased blood pressure, cardiac resuscitation, or control of superficial bleeding | | * hypertension * tachycardia | * Monitor vitals (blood pressure, heart rate, respiratory rate), cardiovascular and respiratory systems closely when administering IV * If administering IV, monitor IV site for extravasation |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **ANS Medications** | | | | |
| **Class: Catecholamine**  **Prototypes: Dopamine** | | **Therapeutic Effects:**   * increase CO and BP | | |
| **Administration** | **Indications** | | **Side Effects** | **Nursing Considerations** |
| * IV * Must be administered via IV pump | * Hypotension or shock: Treatment of severe hypotension or shock (eg, septic shock and other vasodilatory shock states, cardiogenic shock, decompensated heart failure, post–cardiac arrest) that persists during and after adequate fluid volume replacement. * Increased blood flow to kidneys causing increased urine output * Increased cardiac output and elevated blood pressure | | * Hypotension * Tachycardia * Palpitations * Dyspnea * Decreased blood flow to extremities * If urine flow decreases without hypotension, notify prescriber because dosage may need to be reduced | * During infusion, frequently monitor ECG, blood pressure, cardiac output, pulse rate, urine output, and color and temperature of limbs * Check urine output often |