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| **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)
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| **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 |

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| **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
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| **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
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| **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
 |

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| **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
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| **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)
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| **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
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| **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
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| **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
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| **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
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| **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
 |