

Pharmacology Chart Final

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Drug Class	Drug Name	The Common Adverse Effects	Dosage	Special Considerations
Autonomic Drugs	Atropine (McLendon & Preuss, 2023)	Dry mouth, urinary retention, blurred vision, constipation, tachycardia.	0.3- 1mg IV after every 3-5 minutes (Max 3mg).	May precipitate acute angle glaucoma and viscid plugs in patients with chronic lung disease. It may cause heart problems and respiratory depression.
	Epinephrine (Dalal & Dejan, 2023)	Hypertension, palpitations, tachycardia, headache, and anxiety.	0.3-0.5mg IM for anaphylaxis: 1mg IV in cardiac arrest.	Caution among patients to monitor for any vital signs during admission. It can cross the placenta and delay labor because it opposes oxytocin in the uterus. Use with caution with anaphylaxis-induced hypotension during pregnancy because it can cause uterine vasoconstriction, thus decreasing oxygen delivery to the fetus. Use with caution in hypertensive patients. Due to a decrease in organ functioning with the elderly, this drug should be titrated at a lower end of dosing when started.
	Propranolol (Shahrokhi & Gupta, 2023)	Bradycardia, fatigue, depression, hypertension, dizziness.	10-40mg Orally 2-3 times every day.	It is contraindicated in asthma and COPD. Could mask some signs of hypoglycemia among patients with diabetes. Monitoring blood pressure, heart rate, and respiratory rate routinely is important. During receiving this therapy during a thyroid storm, the patient will

				need to be put on continuous cardiac monitoring.
	Dopamine (Choi & Horner, 2023).	Tachycardia, nausea, arrhythmias, hypertension.	2-20 mcg/kg/min IV infusion.	Monitor blood pressure, renal output, and heart rate in shock and heart failure. Also, fluids and electrolytes must be monitored. CBC with diff, liver function test, BUN/Cr, and cardiovascular evaluation must be monitored. Patients taking bromocriptine should be tested for pregnancy every four weeks. Patients taking pramipexole and ropinirole must be monitored for skin reactions, creatinine levels (pramipexole only), and orthostatic hypotension.
Cardiovascular and Renal Drugs	Lisinopril (Lopez et al, 2023)	Angioedema, hypotension, cough, hypertension.	10-40mg orally once every day.	Discontinue immediately in case of angioedema. When pregnancy is confirmed, discontinue because this drug acts on the angiotensin system, which can cause death to a developing fetus. Precaution with patients with high-potassium diets because it might exacerbate hypotension and hyperkalemia. Monitoring liver function, serum potassium, blood pressure, and blood urea nitrogen/serum creatinine with

				patients up to three weeks after initiating this drug.
	Furosemide (Khan et al., 2023)	Hypokalemia, hypotension, ototoxicity, dehydration.	20-80mg orally once or twice every day.	Monitor electrolytes, renal functions, and blood pressure, and adjust dosage in case of actual impairment. Providers need to have fluid intake and output monitored and orthostatic hypotension.
	Atenolol (Rehman & Shah, 2019)	Bradycardia, cold extremities, depression and hypertension, fatigue.	25-100mg orally once every day.	Avoid any abrupt discontinuation. Monitor the patient's blood pressure and heart rate. Evaluating renal functioning before initiating treatment is crucial because any impaired glomerular function will lead to drug accumulation, and this drug is excreted through the kidneys. Random blood pressure monitoring with heart rate is recommended. If the patient has a history of obstructive airway disease, they should have regular pulmonary function tests; if the patient has diabetes, their blood glucose must be monitored.
	Hydrochlorothiazide (Herman & Bashir, 2023)	Hypokalemia, hypotension, hyperglycemia, and dehydration.	12.5-50mg orally once every day.	Monitor the electrolytes, especially potassium, magnesium, and sodium, and avoid them among patients with sulfa allergy. Monitor for dehydration and hypovolemia.

				Patients with gout need to be monitored for acute gout attacks. Blood pressure needs to be monitored regularly, and if the patient has an impaired glucose metabolism, their blood glucose needs to be monitored for hyperglycemia.
Drugs with a smooth muscle action	Albuterol (Vanderah, 2023)	Headache, nervousness, tachycardia, and tremor.	2.5mg-5mg inhalation after every four to six hours.	Always be cautious among patients with cardiovascular disorders and monitor their respiratory status. Monitor blood pressure, heart rate, peak flow, serum potassium, and glucose. And monitor for asthma symptoms.
	Ipratropium (Vanderah, 2023)	Dizziness, blurred vision, and cough. Dyspnea, xerostomia, sinusitis, tachycardia and headache,	Two inhalations up to 4 times every day.	Monitor for symptoms of anaphylaxis, and routine pulmonary function tests are needed to gauge response to therapy. Take caution with patients diagnosed with prostatic hypertrophy, bladder neck obstruction, and closed-angle glaucoma.
	Nitroglycerin (Twiner et al., 2022)	Tachycardia, dizziness, hypotension, and headache.	0.3-0.6 mg sublingually after every five minutes. Maintain a maximum of three dosages.	Avoid it among patients with phosphodiesterase inhibitors, such as the side nail, because of the higher risk of hypertension.
	Terbutaline (Vanderah, 2023)	Hyperglycemia, hypokalemia, anxiety, tremor, and palpitations.	2.5mg orally at least three times every day. Or 0.25mg SQ in	This medication is reserved for acute use among asthma patients and those in preterm labor.

			every 15 to 30 minutes.	Monitor for hyperglycemia and hypokalemia.
Drugs for the central nervous system (Vanderah, 2023)	Lorazepam	Sedation, confusion, respiratory depression, ataxia, dizziness.	1-2mg orally, 2 to three times every day.	The risk of dependence and tolerance, avoid abrupt discontinuation because of the withdrawal risk.
	Sertraline	Nausea, dizziness, weight gain, sexual dysfunction.	50-200mg orally once every day.	Monitor for serotonin syndrome and suicidal ideation among the younger patients. Avoid it with patients who have MAOIs.
	Gabapentin	Ataxia, peripheral edema, dizziness, and fatigue.	300-1200mg orally three times every day.	Adjust the dosages which are required among patients with renal impairment. It is commonly used among patients with seizures and neuropathic pain.
	Morphine	Respiratory depression, nausea, drowsiness and constipation.	2-10 mg IV after every 2 to 4 hours as required.	Higher potential of abuse. Monitor the patient's respiratory status, especially among those who are opioid inexperienced.
Drugs for gout and blood inflammation (Vanderah, 2023)	Aspirin	Renal impairment, tinnitus, GI bleeding, and ulceration.	81mg-325mg orally once every day.	Contraindicated in children (those with Reye syndrome), monitor for the signs of bleeding in the brain, stomach, and spinal cord.
	Warfarin	Bleeding, skin necrosis, GI distress, bruising.	Adjust based on INR, typically 2-10mg every day.	Requires regular monitoring of INR. Avoid changes in vitamin K intake in their diets. It can cause fatal bleeding.
	Colchicine	Vomiting, abdominal pain, diarrhea, nausea.	0.6mg orally once or twice every day.	Caution in renal and hepatic impairment. Avoid it among pregnant patients. It can cause unusual

				bleeding. Avoid it with patients who have active infections.
	Allopurinol	GI distress, hypersensitivity reactions, elevated liver enzymes, rash.	100-300mg orally once every day.	Monitor renal functions and avoid the risk of severe skin reactions whenever there is an acute gout flare. It may cause a life-threatening skin rash.
Endocrine Drugs (Vanderah, 2023)	Metformin	GI upset, vitamin B12 deficiency, and lactic acidosis.	500-2000mg orally every day in divided dosages.	Avoid among patients with renal impairment. Take it with meals to reduce the risk of GI effects, and always monitor for symptoms of acidosis.
	Levothyroxine	Tachycardia, insomnia, weight loss, palpitations.	25-200mcg orally once every day.	Take it on an empty stomach in the morning, monitor the TSH, and free the T4 levels. It can cause cardiac wall thickness, cardiac contractility, angina, and tachycardia.
	Insulin glargine	Hypoglycemia, injection site reactions, weight gain.	The dose is individualized, 0.2-0.5 units/kg daily.	Rotate the injection sites to prevent instances of lipodystrophy. Do not mix with other insulins.
	Prednisone	Hyperglycemia, osteoporosis, hypertension, mood swings, weight gain.	5-60mg orally once every day.	Taper the dosage gradually to minimize adrenal insufficiencies and monitor blood pressure and glucose levels. Also, monitor for any usual extreme tiredness.
Chemotherapy drugs	Cyclophosphamide (Vanderah, 2023)	Cystitis, hemorrhagic, bone marrow suppression, vomiting, alopecia and Nausea	2-4mg/kg/day orally or IV. Or 100-150mg/m ²	Patients should ensure adequate hydration as it prevents hemorrhagic cystitis. Monitor the

				blood count regularly.
	Apalutamide - An Antifungal used to treat Prostate Cancer (Vanderah, 2023)	Weakness, tiredness, muscle weakness, diarrhea, nausea, swelling in extremities.	60mg-240mg add water to dissolve tablets	May interact with Allegra and Prilosec. The patient's cardiac history needs to be thorough, and any brain injuries, thyroid problems, or osteoporosis needs to be reported.
	Methotrexate (Vanderah, 2023)	Mucositis, renal toxicity, myelosuppression, hepatotoxicity	15-30mg/m ² IV or oral weekly	Use it with leucovorin rescue for higher dosages, always monitor the liver and renal functions, and ensure adequate hydration.
	Ciprofloxacin - An Antimicrobial that is second-generation fluoroquinolones (Thai et al., 2023).	Prolonged QT interval, hyper or hypoglycemia, photosensitivity, nausea, and diarrhea.	200mg-750mg every 8 hours or every 12 hours.	Monitor patients for tendinitis, altered mental status, complete blood count, and renal and hepatic functioning. Significant interactions include patients using theophylline, tendon rupture, peripheral neuropathy, neuropsychiatric adverse events, and exacerbation of myasthenia gravis.
	Cisplatin (Vanderah, 2023)	Nephrotoxicity, nausea, electrolyte imbalance, vomiting, and ototoxicity	50-100mg/m ² IV after every 3-4 weeks	Ensure aggressive hydration and always monitor renal functions. Administer antiemetics for nausea
Toxicology	Naloxone (Vanderah, 2023)	Nausea, withdrawal symptoms, opioid, tachycardia, sweating, withdrawal symptoms.	0.4-2mg IV daily for 2-3 minutes as required. Nasal spray 4 mg	Repeat dosages could be needed for long-acting opioids. Continuously monitor for any form of respiratory distress.

	Activated Charcoal (Zellner et al., 2019)	Black stool, constipation, and the risk of aspiration.	10g-100g orally and via the NG tube.	Effective when administered within 1-2hrs of ingestion, ensuring the patient's airway is protected.
	Flumazenil (Vanderah, 2023)	Seizures, nausea, agitation, dizziness.	0.2mg IV may repeat after every 1 minute up to 1mg.	Always avoid alcohol when using because this drug increases the frequency of benzodiazepine tolerance and dependence; there is no antidote available, and the ideal usage is when an inexperienced benzodiazepine individual has overdosed.
	Atropine for poisoning (Vanderah, 2023)	Dry mouth, urinary retention, tachycardia, blurred vision.	1-2 mg IV after every 5-15 till the secretions decline.	Used as an antidote in cases of organophosphate poisoning and close monitoring of the patient's cardiac status.
Special Topic	Alteplase (Reed & Nicolas, 2023)	GI bleeding, hypertension, hemorrhage, bleeding intracranial.	0.9mg/kg iv 10% bolus and 90% infusion.	Monitor for any bleeding and avoid any invasive protocols at the time of administration.
	Heparin (Mayo Clinic, 2019)	Bleeding thrombocytopenia and osteoporosis.	5000 units SQ after every 8 to 12 hours for prophylaxis.	Monitor for the aPTT levels. The antidote is protamine sulfate.
	Vitamin K (NIH, 2021)	A flushing taste changes the injection.	Depending on the INR, 1-10mg IM/IV or oral.	Reverse impacts of warfarin. Avoid in patients who are known for hypersensitivity.
	Fomepizole (NIH, 2021)	Headache, nausea, metallic taste, dizziness.	The initial dose is 15mg/kg, then 10mg/kg after every 12 hours for ethylene glycol or methanol poisoning.	Use as an antidote whenever there is ethylene or methanol poisoning. It is known for inhibiting alcohol dehydrogenase, preventing the formation of toxic

				metabolites. Continuously monitor the patient for liver functions and ensure hydration; an alternative to this is ethanol infusion in case fomepizole is not available.
	Protamine sulfate (Applefield & Krishnan, 2020)	Flushing, anaphylaxis, bradycardia, and hypertension.	1mg neutralizes up to 100 units of heparin dosage adjusted at the right time from the last dose of heparin.	Used for reversal of heparin in cases of excessive bleeding. Administer the drug slowly for more than ten minutes to prevent any adverse impacts, such as cardiovascular diseases. Monitoring the aPTT after administration to ensure effectiveness in reversal.
	Naloxone (Jordan & Morrisonponce, 2023)	Agitation, sweating, tachycardia, vomiting, nausea, hypertension.	0.4-2mg IV/IM/SC after every 2-3 minutes as required up to 10mg. 4mg Nasal Spray.	It is used as an opioid antagonist in instances where there is an opioid overdose. It could induce withdrawal symptoms among patients who are opioid dependent. Rapid administration is vital in cases of respiratory depression. Consider a repeat dosage because of its short duration of action as compared to the other opioids.

References

Applefield, D., & Krishnan, S. (2020). *Protamine*.

<https://www.ncbi.nlm.nih.gov/books/NBK547753/>

Choi, J., & Horner, K. A. (2023, June 26). *Dopamine Agonists*.

<https://www.ncbi.nlm.nih.gov/books/NBK551686/>

Dalal, R., & Dejan G., (2023, May). *Epinephrine*.

<https://www.ncbi.nlm.nih.gov/sites/books/NBK482160/>

Herman, L. L., & Bashir, K. (2023, November 12). *Hydrochlorothiazide*.

<https://www.ncbi.nlm.nih.gov/books/NBK430766/>

Jordan, M. R., & Morrisonponce, D. (2023). *Naloxone*.

<https://www.ncbi.nlm.nih.gov/books/NBK441910/>

Khan, T. M., Patel, R., & Siddiqui, A. H. (2023). *Furosemide*.

<https://www.ncbi.nlm.nih.gov/books/NBK499921/>

Lopez, E. O., Parmar, M., & Terrell, J. M. (2023). *Lisinopril*.

<https://www.ncbi.nlm.nih.gov/books/NBK482230/>

Mayo Clinic. (2019). *Heparin*.

[https://www.mayoclinic.org/drugs-supplements/heparin-intravenous-route-subcutaneous
route/description/drg-20068726](https://www.mayoclinic.org/drugs-supplements/heparin-intravenous-route-subcutaneous-route/description/drg-20068726)

McLendon, K., & Preuss, C. V. (2023, June 23). *Atropine*.

<https://www.ncbi.nlm.nih.gov/books/NBK470551/>

National Institutes of Health. (2021). *Fomepizole Injection*.

[https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=911312e2-3a7c-4c97-88a8
b8d92cd12923](https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=911312e2-3a7c-4c97-88a8b8d92cd12923)

National Institutes of Health. (2021, March 29). *Office of Dietary Supplements - Vitamin K*.

<https://ods.od.nih.gov/factsheets/vitaminK-HealthProfessional/>

Reed, M., & Nicolas, D. (2023). *Alteplase*.

<https://www.ncbi.nlm.nih.gov/books/NBK499977/>

Rehman, B., & Shah, S. (2019). *Atenolol*.

<https://www.ncbi.nlm.nih.gov/books/NBK539844/i>

Shahrokhi, M., & Gupta, V. (2023, May 1). *Propranolol*.

<https://www.ncbi.nlm.nih.gov/books/NBK557801/>

Thai, T., Zito, P. M., & Salisbury, B. H. (2023, August 28). *Ciprofloxacin*.

<https://www.ncbi.nlm.nih.gov/books/NBK535454/>

Twiner, M. J., Hennessy, J., Wein, R., & Levy, P. D. (2022). Nitroglycerin.

<https://doi.org/10.2147/oaem.s340513>

Vanderah, T. W. (2023). *Basic and Clinical Pharmacology 16th Edition*. McGraw Hill Professional.

Zellner, T., Prasa, D., Färber, E., Hoffmann-Walbeck, P., Genser, D., & Eyer, F. (2019). The use of activated charcoal to treat intoxications.

<https://doi.org/10.3238/arztebl.2019.0311>