Hypertension

Generic Drug	Side Effects, BBW, Clinical Pearls, Administration considerations
Thiazide and thiazide-like Diuretics	
- Chlorthalidone - Hydro-chlorothiazide - Indapamide - Metolazone	• Fluid and electrolytes imbalance • Sulfa allergy • **Hypokalemia, hypomagnesemia, hyponatremia, hypercalcemia,hyperuricemia, elevated lipids (LDL, TG), hyperglycemia, dizziness** • Take early in the day to avoid nocturia • Increase dofetilide concentration leading to increased risk of QTc prolongation *<u>Note</u>: Thiazides decrease Lithium clearance → increase toxicity*
Calcium Channel Blockers: Dihydropyridine (DHP)	
Amlodipine Felodipine Nifedipine Nisoldipine	• **Peripheral edema, dizziness, fatigue**, flushing, headache, palpitations, tachycardia, gingival hyperplasia • Hypotension • Caution in severe hepatic impairment and heart failure • **Do not use Nifedipine IR in chronic hypertension or for acute BP reduction → risk of profound hypotension, MI and or death** • **Contraindication** o Felodipine and nisoldipine use with itraconazole *<u>Note</u>: All CCB (DHP and non-DHPs) are major substrates for CYP 3A4 (3A4 inducer will decrease conc of CCBs and 3A4 inhibitors will increase conc of CCBs)*
Calcium Channel Blockers: Non-Dihydropyridine (non-DHP)	
Diltiazem Verapamil	• **Edema, headache, dizziness, <u>constipation</u> (more with verapamil), gingival hyperplasia** • Bradycardia, AV block, hypotension, heart failure • **Contraindications** o Heart Failure o Acute MI and pulmonary congestion • Diltiazem IR is indicated for angina *<u>Note</u>: Non-DHPs are Cyp 3A4 and P-gp substrates (3A4 and/or P-gp inducers will decrease conc of non-DHPs; 3A4 and/or P-gp inhibitor will increase conc of non-DHPs)*
Angiotensin-converting Enzyme Inhibitors (ACE Inhibitors)	
Benazepril Captopril Enalapril Fosinopril Lisinopril Quinapril Ramipril	• **Cough,** dizziness, headache, hyperkalemia, angioedema, rash • Caution in severe renal impairment • **Contraindications** o History of angioedema o Use with aliskiren in patients with diabetes o Use within 36 hours of a neprilysin inhibitor (sacubitril) o Bilateral renal artery stenosis *Note: ACE inhibitor can decrease Lithium clearance → increase toxicity*
Angiotensin Receptor Blockers (ARB)	
Azilsartan Candesartan Irbesartan Losartan Olmesartan Telmisartan Valsartan	• Same as above except less cough, less angioedema and no wash out period between ARB and neprilysin inhibitor *<u>Note</u>:* • *ARB can decrease Lithium clearance → increase toxicity* • *Aliskiren + ACE or ARB is contraindicated*

Potassium sparing diuretics	
Amiloride or Triamterene + HCTZ	● **Hyperkalemia**, dehydration, hyponatremia, dizziness ● Contraindications ○ Hyperkalemia, anuria, renal impairment ● Caution ○ Co-administration with other agents that increase K (ACEi/ARB) or K supplements For Spironolactone and Eplerenone, see "Aldosterone Antagonists"
Beta Blockers: Cardioselective	
Atenolol Bisoprolol Metoprolol tartrate Metoprolol succinate extended release	● **Decreased HR, hypotension, fatigue, dizziness, depression**, nausea, sexual dysfunction ● Cautions ○ May mask signs and symptoms of hypoglycemia in patients with diabetes ○ May mask signs of hyperthyroidism ○ Use caution with bronchospastic diseases: asthma, COPD ○ May exacerbate depression ○ Caution in pheochromocytoma, peripheral vascular disease (may worsen symptoms) and heart failure (may initially worsen HF symptoms) ● **BBW: Do not discontinue abruptly** ○ Gradually taper dose over 1 - 2 weeks to avoid acute tachycardia, hypertension, and/or ischemia *Note:* ○ Cardioselective agents becomes less selective at higher doses
Beta Blockers: Cardioselective and vasodilatory	
Nebivolol	Same as cardioselective plus: ● Metabolic effects (↑TGs and ↓HDL) ● Causes vasodilation through nitric oxide release- less risk of orthostatic hypotension vs combined agents
Beta Blockers: noncardioselective	
Nadolol Pindolol Propranolol	Same as cardioselective plus: ● **Propranolol**: highly lipid soluble: **more CNS effects, more metabolic effects** ● **Avoid in reactive airway disease**
Beta Blockers: combined alpha (vasodilation)- and beta- receptor	
Carvedilol Labetalol	Same as cardioselective plus: ● More orthostatic hypotension, metabolic effects ● Warning: intraoperative floppy iris syndrome *Notes* ● Carvedilol should be taken with food to decrease the absorption rate and risk of orthostatic hypotension
Direct Renin Inhibitor	
Aliskiren	● Diarrhea ● Cautions ○ Angioedema: D/C immediately and do not re-administer ○ Hyperkalemia, hypotension ○ Renal impairment ○ Avoid in renal artery stenosis ● Contraindicated with ACE inhibitors or ARBs *Note: Aliskiren can decrease the level of furosemide*

Centrally Acting Alpha- 2 Adrenergic Agonist	
Clonidine Methyldopa	● **Dry mouth, somnolence, headache, fatigue, dizziness, constipation, ↓HR, hypotension**, depression, behavioral changes, sexual dysfunction ● Clonidine patch: skin rash, pruritus, erythema, contact dermatitis ● Methyldopa: drug induced lupus erythematous, edema or weight gain, drug induced fever, ↑prolactin levels ● Warnings ○ Do not D/C abruptly (rebound hypertension); taper over 2 - 4 days *Notes: Clonidine patch is applied weekly and removed before MRI (patch may contain conducting metal)*
Direct Vasodilators	
Hydralazine	● Headache, hypotension, edema, reflex tachycardia, palpitations, hematologic effects, peripheral neuritis, acute myocardial infarction ● Drug induced lupus erythematous especially at higher doses ● Contraindications • Mitral valvular rheumatic heart failure, coronary artery disease
Minoxidil	● Fluid retention, tachycardia, hair growth ● BBW ○ Potent antihypertensive: can cause pericardial effusion and angina exacerbations ○ Always use with a beta-blocker and a loop diuretic
Alpha Blockers	
Doxazosin Prazosin Terazosin	● Dizziness, fatigue, headache, edema ● Warnings ○ **Orthostatic hypotension and syncope** (predominant after the first dose, with dose increases and when used with other antihypertensive or PDE-5 inhibitors) ○ Intraoperative floppy Iris syndrome ○ Priapism ○ Doxazosin: avoid in severe hepatic impairment, use caution with strong 3A4 inhibitors

Hyperlipidemia

Statins	
Atorvastatin Fluvastatin Lovastatin Pitavastatin Pravastatin Rosuvastatin Simvastatin	● **Myalgia, arthralgia, myopathy,** diarrhea, memory loss/confusion, hepatotoxicity ● Warnings ○ Skeletal muscle effects (myopathy, rhabdomyolysis): ↑ risk with higher concentrations are used with cyclosporine and strong CYP3A4 inhibitors, concomitant use of fibrates or niacin, age ≥ 65, uncontrolled hypothyroidism and renal impairment ○ Increase in HbA1c and fasting blood glucose ○ Hepatotoxicity ● Contraindications ○ Active liver disease ○ Avoid concurrent gemfibrozil ○ Pregnancy/lactation ● Specific drug/drug interactions ● Avoid large quantities (> 1 quart daily) of grapefruit juice (atorvastatin, lovastatin, simvastatin) ● Cyclosporine (avoid lova, simva, atorva, pitva, max 20 mg with prava/fluva, max 5 mg rosuva) ● Azole antifungals (caution with statins, avoid lova/simva) ● HIV agents (caution with statins) ● Warfarin (several agents can prolong INR, most notability simvastatin/lovastatin) ● Do not start simvastatin 80 mg due to risk of myopathy

		○ Simvastatin/lovastatin: • Do not exceed 10 mg simvastatin (20 mg lovastatin) daily with diltiazem, verapamil or dronedarone • Do not exceed 20 mg simvastatin (40 mg lovastatin) daily with amiodarone, amlodipine, ranolazine *Notes:* ● *Cognitive impairment (memory loss, confusion, memory impairment) associated with statin use are generally not considered serious and are reversible upon statin discontinuation, with variable times to symptom onset (1 day to years) and symptom resolution (median of 3 weeks)* ● *New onset diabetes is rare but can occur. The benefit of the statin therapy outweighs the risk, continue statin therapy.*
Bile Acid Sequestrants		
Cholestyramine Colesevelam Colestipol	Dosing 4 grams QD 3.75 grams QD 2-5 gram BID	● **Constipation, abdominal pain, cramping, gas, bloating ↑TG,** dyspepsia, nausea, esophageal obstruction, ↑LFTs ● Warnings: ○ Cholestyramine light and Colesevelam granules contain phenylalanine and should not be used in patients with PKU ○ Avoid when TG > 300mg/dL ● Contraindications ○ Cholestyramine: complete biliary obstruction ○ Colesevelam: bowel obstruction, TG>500 mg/dL, history of hypertriglyceridemia-induced pancreatitis *Note: Colesevelam has fewer interactions. Consider dosing other drugs 1 to 4 hours before and 4 to 6 hours after bile acid sequestrants*
Fibrates		
Fenofibrate Gemfibrozil	Dosing 145 mg QD 600 mg BID	● **Dyspepsia,** abdominal pain, ↑LFTs, ↑CPK, URTIs ● Warnings ○ **Myopathy: ↑ when administered with statin particularly in the elderly**, diabetes, renal failure or hypothyroidism ○ Reversible ↑ SCr (>2 mg/dL) ● Contraindications ○ Severe liver disease including primary biliary cirrhosis ○ CrCl <30 ○ Gallbladder disease
Ezetimibe		
Ezetimibe	Dosing 10 mg QD	● **GI upset,** ↑LFTs, ↑CPK ● Warnings: ○ Higher risk of elevated hepatic transaminase and myopathy when used with statin therapy ○ Use caution in patients with several renal impairment (CrCl <30 mL/min/1.73m2) ● Contraindicated ○ Active liver disease, pregnancy and breastfeeding

Fish Oils		
Fish oil-icosapent ethyl (Vascepa®) omega-3 acid ethyl esters (Lovaza®)	Dosing 0.5-2 grams BID	● **Eructation (burping), dyspepsia,** taste perversion, arthralgias, vomiting, flatulence ● Targets TG, can raise LDL slightly ● Caution ○ Hypersensitivity to fish and/or shellfish ○ Possible recurrence of symptomatic atrial fibrillation or flutter in patient with paroxysmal or persistent AFib within the first month or initiating therapy *Note: Lovaza® FDA approved for TG lowering when TG ≥ 500 mg/dL; Vascepa® FDA approved for CV event reduction when TG > 150 mg/dL; stop prior to elective surgery: increased bleeding risk*
Proprotein Convertase Subtilisin Kexin Type 9 Inhibitors (PCSK9)		
Alirocumab (Praluent®) Evolocumab (Repatha®)	Dosing 75-150 mg every 2 weeks 140 mg every 2 weeks	● **Injection site reactions,** influenza symptoms, URTIs, increased LFTs ● Hypersensitivity reactions can occur
Adenosine Triphosphate-citrate Lyase (ACL) inhibitor		
Bempedoic acid (Nexletol®)	Dosing 180 mg once daily	● **Gout,** atrial fibrillation, anemia, ↑LFTs, muscle pain, increase creatinine, upper respiratory tract infections, tendon rupture ● Warnings ○ Increased serum uric acid has occurred, usually within the first 4 weeks of treatment, and persisted throughout treatment ○ Tendon rupture and injury has occurred within weeks to months of treatment initiation, increased risk in patients > 60 years of age, those taking corticosteroids or fluroquinolone drugs, and patients with renal failure.
Small interfering ribonucleic acid agent (siRNA)		
Inclisiran (Leqvio®)	Dosing 284 mg X1, in 3 months, then every 6 months	● **Injection site reactions,** arthralgias, urinary tract infections, diarrhea ● Hypersensitivity reactions and immunogenicity can occur ● Given by a healthcare professional in office

Summary of statin therapy intensity		
High-intensity Statin Therapy	**Moderate-Intensity Statin Therapy**	**Low-Intensity Statin Therapy**
Daily dose lowers LDL–C on average, by approximately ≥50%	Daily dose lowers LDL–C on average, by approximately 30% to <50%	Daily dose lowers LDL–C on average, by <30%
Atorvastatin (40†)–80 mg **Rosuvastatin 20** *(40)* **mg**	**Atorvastatin 10** *(20)* **mg** **Rosuvastatin** (*5*) **10 mg** **Simvastatin 20–40 mg‡** **Pravastatin 40** *(80)* **mg** **Lovastatin 40 mg** *Fluvastatin XL 80 mg* **Fluvastatin 40 mg bid** *Pitavastatin 2–4 mg*	*Simvastatin 10 mg* **Pravastatin 10–20 mg** **Lovastatin 20 mg** *Fluvastatin 20–40 mg* *Pitavastatin 1 mg*
**Specific statins and doses are noted in bold that were evaluated in RCTs. All of these RCTs demonstrated a reduction in major cardiovascular events. Statins and doses that are approved by the U.S. FDA but were not tested in the RCTs reviewed are listed in *italics*.*Individual responses to statin therapy varied in the RCTs and should be expected to vary in clinical practice. There might be a biologic basis for a less-than-average response. †Evidence from 1 RCT only: down-titration if unable to tolerate atorvastatin 80 mg in IDEAL. ‡Although simvastatin 80 mg was evaluated in RCTs, initiation of simvastatin 80 mg or titration to 80 mg is not recommended by the FDA due to the increased risk of myopathy, including rhabdomyolysis.		

Heart Failure

Diuretics			
Drug Name	**Starting Dose**	**Target dose**	**Side Effects, BBW, Clinical Pearls, Administration considerations**
Loop Furosemide Bumetanide Torsemide Ethacrynic Acid	 20-80 mg QD 0.5-2 mg QD 5-20 mg QD 25 mg QD	NA	● **↓ (K, Na, Mg, Cl, Ca), hyperglycemia, ↑(HCO3, UA, TG, cholesterol,) orthostatic hypotension, photosensitivity, ototoxicity** (IV infusion of high doses) ● Caution in sulfa allergy (except ethacrynic acid) ● Contraindication: Anuria ● BBW: profound diuresis → electrolyte depletion
Thiazides Metolazone HCTZ	 2.5 mg QD 12.5 mg QD	NA	● **Same as above**
ACE Inhibitors			
Captopril Enalapril Fosinopril Lisinopril Quinapril Ramipril	6.25 mg TID 2.5 mg BID 5 mg QD 2.5 mg QD 5 mg BID 1.25 mg QD	50 mg TID 10 mg BID 40 mg QD 40 mg QD 20 mg BID 10 mg QD	● **Cough,** dizziness, headache, hypotension ● Caution for angioedema, hyperkalemia, hypotension, renal impairment ● Contraindicated ○ History of angioedema ○ Use with aliskiren patient in patients with diabetes ○ Use within 36 hours of a neprilysin inhibitor (sacubitril) ○ Bilateral renal artery stenosis
ARBs			
Candesartan Losartan Valsartan	4 mg QD 25 mg QD 20 mg BID	32 mg QD 150 mg QD 160 mg BID	**Same as above except less cough and angioedema** (also do not need to do a 36 hour washout when switching to sacubitril)
Angiotensin Receptor and Neprilysin Inhibitor			
Sacubitril/Valsartan (Entresto®)	24/26 mg BID	97/103 mg BID	● **Similar to ARB adverse effects** ● **Warning** ○ Angioedema (contraindicated), renal impairment, hyperkalemia, hypotension
Beta Blockers			
Bisoprolol Metoprolol succinate Carvedilol	1.25 mg QD 12.5 mg QD 3.125 mg BID	10 mg QD 200 mg QD 25 mg BID (50 mg BID if >85 kg)	● ↓HR, hypotension, fatigue, dizziness, depression, weight gain, edema (carvedilol) ● Caution ○ Masks hypoglycemia symptoms ○ Intraoperative floppy Iris (carvedilol) ● Contraindication ○ Severe bradycardia, 2nd or 3rd degree heart block or sick sinus syndrome ● BBW: Do not D/C abruptly, taper over 1 - 2 weeks
Aldosterone Receptor Antagonists			
Eplerenone Spironolactone	25 mg QD 12.5 mg QD	50 mg QD 25 mg QD	● Hyperkalemia, hyponatremia, dizziness, hyperchloremic metabolic acidosis ● Eplerenone: Hypertriglyceridemia ● Spironolactone: gynecomastia, breast tenderness, impotence ● Contraindications ○ Anuria, hyperkalemia & use with another aldosterone antagonist ○ CrCl <30 mL/min ○ **Eplerenone**: Contraindications co-administration of strong 3A4 inhibitors (clarithromycin, itraconazole, ketoconazole, nefazodone, nelfinavir, ritonavir, troleandomycin)

Hydralazine/Nitrates			
Hydralazine + isosorbide dinitrate	20/37.5 mg TID	40/75 mg TID	● Headache, reflex tachycardia, palpitations, fluid retention ● Drug induced lupus erythematosus ● Contraindication: Use with PD5 inhibitors
Sodium-glucose cotransporter 2 (SGLT2) inhibitors			
Empagliflozin (Jardiance®) Dapagliflozin (Farxiga®) Sotagliflozin (Inpefa®)	10 mg QD 10 mg QD 200-400 mg QD	NA	● **Genitourinary infection, genitourinary fungal injection,** hypotension, increased thirst and urination, hyperkalemia, bone loss, renal dysfunction, lower limb amputation ● **Warnings** ○ Renal effects: acute kidney injury has been reported ○ Serious urinary injections have occurred, including urosepsis and pyelonephritis ○ Euglycemic ketoacidosis is a rare but serious side effect that can occur in patients with Type 1 or Type 2 diabetes ○ Hypovolemia has been observed, especially in those on diuretic therapy, which may lead to hypotension ● Contraindications ○ Severe renal impairment (eGFR <20-30 mL/min/1.73 m2), end stage renal disease or dialysis

Other agents to reduce symptoms or hospitalizations			
Digoxin	0.125 mg every other day	NA	● Most common side effects: Dizziness, mental disturbances, headache, NVD ● Cardiac Side Effects: AV block, sinus bradycardia, ventricular arrhythmias ● Extracardiac Side Effects ○ CNS: visual disturbances, fatigue, weakness, dizziness, confusion, delirium, psychosis ○ GI: anorexia, N/V, abdominal pain ● Warnings: ○ Avoid with 2nd/3rd degree heart block (unless have functioning artificial pacemaker), incomplete AV block (may progress to complete block with digoxin), those with an accessory bypass tract (Wolff-Parkinson-White) or pre-excitation syndrome ● Contraindicated in ventricular fibrillation ● Toxicity ○ Symptoms: anorexia, N/V, loss of appetite, visual changes, and bradycardia ○ Usually seen with digoxin levels >2 ng/mL, although symptoms may occur at lower levels *Note: Patients at increased risk for digoxin toxicity include those with low body weight, advanced age, renal impairment, hypokalemia, hypercalcemia, or hypomagnesemia. Should only be considered for use in HFrEF when symptoms remain despite guideline-directed medical therapy.*
Ivabradine (Corlanor®)	5 mg BID	7.5 mg BID	● Bradycardia, hypertension, atrial fibrillation, luminous phenomena ● Warnings ○ ↓HR and bradycardia ○ ↑risk of QT prolongation and ventricular arrhythmias ○ Not recommended in 2nd degree AV block unless have a functioning pacemaker ● Contraindications ○ Acute decompensated HF, BP <90/50 ○ Increases the risk of atrial fibrillation; D/C if atrial fibrillation develops ○ Sick sinus syndrome, sinoatrial block or 3rd degree AV block ○ Resting HR <60 or pacemaker dependence ○ Severe hepatic impairment

			○ Combination with CYP3A4 inhibitors *Note: Adjust dose based on heart rate*
Vericiguat (Verquvo®)	2.5 mg daily	10 mg daily	● Hypotension ● Anemia ● Do not use of PDE-5 inhibitors due to the risk of hypotension

Atrial Fibrillation

Anticoagulants (see chart below for target specific agents)		
Warfarin	• No need for a loading dose in geriatrics • Lower maintenance doses (< 5 mg daily) for elderly, malnourished, taking drugs that can increase warfarin levels, liver disease, heart failure, or have higher risk of bleeding • Bleeding, skin necrosis, purple toe syndrome • Warnings ○ Tissue necrosis/gangrene ○ Heparin induced thrombocytopenia ○ Hemorrhagic tendencies, uncontrolled HTN, noncompliance, active bleeding ○ Bacterial endocarditis • BBW: Major or fatal bleeding	• Major drug interactions: • **2C9 Inducers** • Carbamazepine Phenobarbital • Phenytoin Rifampin • **2C9 Inhibitors:** • Amiodarone Fluconazole • Fluoxetine Metronidazole • Ritonavir Trimethoprim/sulfamethoxazole • **3A4 inducers** • St. John's wort Phenobarbital • Phenytoin Rifampin • **3A4 inhibitors** • Clarithromycin Diltiazem • Erythromycin Itraconazole • Ketoconazole Ritonavir • Verapamil

Antiarrhythmics	
Dosing	**Side Effects, BBW, Clinical Pearls, Administration considerations**
Amiodarone	
200-400 mg QD	• Tremors, ataxia, neuropathy, corneal deposits, thyroid dysfunction, pulmonary fibrosis, bradycardia, hypotension, QT prolongation, hepatotoxicity, blue-gray skin discoloration • Significant monitoring is required including CMP, TSH, PFT, chest X-ray, EKG, eye exam • Select interactions: Inhibits 2C9, 2D6, 3A4 ○ Decrease digoxin dose by ½ ○ Warfarin dose needs to be decreased ~50% ○ Increases the concentration of statins
Dofetilide (Tikosyn®)	
500-125 mg BID	• QT prolongation, electrolyte disturbances, headache, dizziness, chest pain • Dose reductions are needed in patients with reduced renal function and prolonged QT interval • Initiate in a hospital with EKG monitoring for at least 3 days • Select interactions: Substrate for 3A4 ○ Caution with QT prolongation medications ○ Contraindicated with verapamil, thiazides, trimethoprim, itraconazole, megestrol, prochlorperazine, and ketoconazole

Dronedarone (Multaq®)	
400 mg BID	● QT prolongation, increased serum creatinine, bradycardia, diarrhea ● Contraindicated in permanent atrial fibrillation ● Contraindicated in symptomatic heart failure ● Select interactions: Substrate for 3A4 ○ Caution with QT prolongation medications ○ Contraindicated with ketoconazole, itraconazole, voriconazole, cyclosporine, telithromycin, clarithromycin, nefazodone, and ritonavir
Flecainide/Propafenone	
Flecainide: 50-150 mg BID Propafenone: 225-425 mg BID	● QT prolongation, hypotension, ventricular tachycardia, heart failure ● Contraindicated in patients with heart failure, significant coronary artery disease, or HTN with left ventricular hypertrophy ● Pill-in-pocket approach can be used in select patients to minimize medication exposure
Sotalol AF	
80-160 mg BID	● QT prolongation, electrolyte disturbances, beta-blocker adverse effects ● Black box warning related to proarrhythmic effects ● Dose reductions are needed in patients with reduced renal function and prolonged QT interval ● Initiate in a hospital with EKG monitoring for at least 3 days ● Caution with QT prolongation medications ● Dispense as sotalol AF for atrial fibrillation with medication guide

Anticoagulant Dosing Based on Specific Indication					
		Apixaban (Eliquis®)	**Dabigatran (Pradaxa®)**	**Rivaroxaban (Xarelto®)**	**Edoxaban (Savaysa®)**
Available tablet strengths		**2.5, 5, 10 mg**	**75, 110, 150 mg**	**2.5, 10, 15, 20 mg**	**30, 60 mg**
Non-valvular Atrial Fibrillation	Standard	5 mg PO BID	150 mg PO BID If CrCl 15-30mL/min decrease dose to 75mg PO BID	20 mg PO Daily	CrCl >50 mL/min to ≤ 95 mL/min: 60 mg PO daily
	Dose Adjust.	2.5 mg PO BID if ≥ 2 criteria met: • age ≥80 yrs • TBW ≤ 60 kg • Scr ≥ 1.5 mg/dL	CrCl 15-30 mL/min: 75 mg PO BID	CrCl 15-50 mL/min: 15 mg PO daily	CrCl > 95 mL/min: Do not use CrCl 15-50 mL/min: 30 mg PO once daily
	ESRD / Dialysis	5mg PO BID Reduce to 2.5 mg PO BID If age ≥80 yrs or TBW ≤ 60kg	Avoid use	Avoid use	Contraindicated – Do not use
VTE Treatment	Standard	10 mg PO BID for 7 days, then 5 mg PO BID for remainder of therapy Consider reducing dose to 2.5 mg PO BID after 6 months	150 mg PO BID after 5-10 days of parenteral anticoagulation	15 mg PO BID for 21 days, then 20 mg PO daily for remainder of therapy Consider reducing dose to 10 mg PO daily after 6 months	60 mg PO Daily following 5- 10 days of parenteral anticoagulation
	Dose Adj.	No dosage adjustments recommended	CrCl < 30 mL/min: Avoid use	CrCl < 15 mL/min: Avoid use	CrCl 15-50 mL/min: 30 mg PO once daily
CAD or PAD to reduce the risk of heart attack, stroke, and CV death		Not indicated	Not indicated	2.5 mg PO BID PLUS aspirin (75-100 mg) once daily CrCl < 15 mL/min: Avoid use	Not indicated

		Apixaban (Eliquis®)	Dabigatran (Pradaxa®)	Rivaroxaban (Xarelto®)	Edoxaban (Savaysa®)
VTE Prophylaxis (TKR/THR for up to 35 days OR reduction in the risk of recurrent VTE following surgery up to 39 days- Xarelto ONLY)	Standard	2.5 mg PO BID **(ORTHO only)**	110 mg PO on day 1, then 220 mg PO daily **(ORTHO only)**	10 mg PO daily **(Medical and ORTHO)**	Not indicated
	Dose Adj.	No dosage adjustments recommended	CrCl < 30 mL/min: Avoid use	CrCl <15 mL/min: Avoid use	
Drug Interactions		All agents are P-gp substrates. Edoxaban and dabigatran are minimal substrates for CYP3A4 while apixaban and rivaroxaban are ~25%. Strong dual inhibitors of CYP3A4 and P-gp (ketoconazole, itraconazole, dronedarone, cyclosporine, and tacrolimus) increase blood levels of the anticoagulant. Use caution OR avoid if possible. Weaker dual inhibitors of CYP3A4 and P-gp (fluconazole, verapamil, amiodarone, clarithromycin, erythromycin, diltiazem, quinidine) should be used with caution. Avoid use with dual inducers of CYP3A4 and P-gp (carbamazepine, rifampin, levetiracetam, phenytoin, phenobarbital, valproic acid, doxorubicin, vinblastine, St. John's wort) as they reduce blood levels of the anticoagulant. Avoid with HIV protease inhibitors. Several anticancer agents interact and should be avoided. Caution: Coadministration of antiplatelet agents (e.g., aspirin, clopidogrel, ticagrelor, prasugrel, vorapaxar), chronic NSAIDs, SSRI use increased risk of bleeding			
Precautions/ Adverse effects		Warnings: Epidural or spinal hematoma can be developed during indwelling epidural catheters or concomitant use of medicinal products affecting hemostasis. Use with caution in moderate/severe hepatic impairment. Adverse effects: bleeding, not approved for patients with prosthetic heart valves or moderate to severe mitral stenosis			

References:
DiPiro JT et al. Pharmacotherapy: A Pathophysiologic Approach, 12th edition 2023

Lexicomp Micromedex

Multiple packet inserts