

2 Cardiovascular System

2.1 Vasopressors

MA/EF (dobutamine): primarily beta-rec. agon., pos. inotropic, no vasoconstriction; **MA/EF (dopamine):** dose-dependent dopamine-, beta-/alpha-rec. agon, renal vasodilation, cardiac output ↓, vasoconstr.

MA/EF (epinephrine): primarily beta-rec. agonist, positive inotropic, chronotropic + bathmotropic effect, syst. BP ↑, diast. BP ↓, bronchodilation; **MA/EF (norepinephrine):** primarily alpha-rec. agonist ⇒ syst./diast. BP ↑; **MA/EF (midodrine):** alpha-adren. agonism on arteriolar + venous rec. ⇒ vascular tone ↑, venous pooling ↓, BP ↑; **AE:** headache, anxiety, fatigue, N/V, dyspnea, angina, hypertension/hypotension, arrhythmias, parasthesia, bradycardia, palpitati., hyperglycemia; **CI (dobutamine):** pheochromocytoma, idiopathic hypertrophic subaortic stenosis, hypersensitivity to the drug; **CI (dopamine):** pheochromocytoma; **CI (epinephrine)** narrow angle glaucoma, anesthesia with halogenated hydrocarbons/cyclopropane, organic brain damage, labor, cardiac dilatation, corocary insufficiency; **CI (norepinephrine):** anesthesia with halogenated hydrocarbons/cyclopropane, vascular thrombosis; **CI (midodrine):** excessive supine hypertension, severe organic heart disease, acute renal disease, urinary retention, pheochromocytoma, thyrotoxicosis, hypersensitivity to the drug

Dobutamine	EHL 2min, Dur (1x dose) 10min, PRC B, Lact ?
Dobutrex <i>Inj 12.5mg/ml</i> Generics <i>Inj 12.5mg/ml</i>	Cardiac decompensation: ini 0.5–1mcg/kg/min IV, incr to 2–20mcg/kg/min, max 40mcg/kg/min
Dopamine	EHL 2min, Dur 10min, PRC C, Lact ?
Generics (dopamine + dextrose) <i>Inj 0.8mg/ml, 1.6mg/ml, 3.2mg/ml</i>	Hypotension, heart failure: ini 1–5mcg/kg/min IV, incr prn by 5–10 mcg/kg/ min increments, max 50mcg/kg/ min
Epinephrine	Dur 2min, PRC C, Lact ?
Adrenalin <i>Inj 1mg/ml, Topical 1mg/ml</i> Epipen Jr. <i>Inj (IM) 0.15mg/delivery</i> Epipen <i>Inj (IM) 0.3mg/delivery</i> Generics <i>Inj 0.1mg/ml, 1mg/ml</i>	Cardiac arrest: 0.5–1mg IV/ET, rep prn q 3–5min; anaphylaxis: 0.3–0.5 mg SC/IM, rep prn q10–15min; CH: 0.01mg/kg IV; 0.1mg/kg ET rep prn with 0.1mg/kg IV/ET q3–5min; anaphylaxis: 0.01mg/kg SC/IM (use 1: 1000 Sol), then 0.1mg/kg IV prn (IV: use 1:10.000)
Midodrine	EHL 0.5h, PRC C, Lact ?
Amatine <i>Tab 2.5mg, 5mg</i> Generics <i>Tab 2.5mg, 5mg</i>	Orthostatic hypotension: ini 2.5mg PO tid, incr prn to max 40 mg/d; DARF: ini 2.5mg tid

Norepinephrine		Dur 1–2min, PRC C, Lact ?
Levophed <i>Inj 1mg/ml</i> Generics <i>Inj 1mg/ml</i>	Acute hypotensive states: ini 8–12 mcg/min IV, maint 2–4 mcg/min	
Phenylephrine		PRC C, Lact ?
Neo-Synephrine <i>Inj 10mg/ml</i>	Acute hypotension: 2–5mg SC/IM, max ini 5mg IV, rep prn q1–2h; 0.2–0.5mg slowly IV, max ini 0.5mg IV	
Systemic Beta Adrenergic Agonists →63, α - β -Adrenergic Agonists →65		

2.2 Beta Blockers

MA: competitive blockage of beta-receptors;

EF: neg. inotropic + chronotropic \Rightarrow cardiac output \downarrow , myocardial O_2 consumption \downarrow , renin secretion \downarrow , high-dose nonspecific membrane-stabilizing effect (quinidine-like);

AE: (acebutalol) congestive heart failure, bradycardia, bronchospasm, fatigue, dyspnea, nausea, dizziness, hypotension, rash (atenolol) congestive heart failure, AV block, bradycardia, bronchospasm, dizziness, vertigo, fatigue, diarrhea, nausea, dry mouth, (bisoprolol) arthralgia, dizziness, headache, insomnia, diarrhea, nausea, coughing, fatigue, edema, (carvedilol) congestive heart failure, syncope, bradycardia, hypotension, fatigue, dizziness, dyspnea (esmolol) hypotension, bradycardia, bronchospasm (labetalol) hypotension, jaundice, bronchospasm, dizziness, fatigue, headache, angina, nausea (metoprolol/nadalol) hypotension, bradycardia, congestive heart failure (AV block, bradycardia, hypotension, congestive heart failure, peripheral vasoconstriction bronchospasm, N/V, constipat., diarrhea, sexual ability \downarrow , insulin secretion \downarrow , glycogenolysis \downarrow , fatigue, insomnia, dizziness, drowsiness, weakness, nervousness, anxiety, mental depression (propranolol) chf, bronchospasm, anorexia, nausea, vomiting, diarrhea, abdominal pain;

CI (betablockers): bronchospasm, congestive heart failure, sinus bradycardia, second and third degree AV block, RV failure secondary pulmonary hypertension, cardiogenic shock, hypersensitivity to drug;

CI (acebutalol/bisoprolol) anesthesia that produces cardiac depression;

CI (atenolol): sick sinus syndrome, severe PVD, pheochromocytoma without alpha-blockade, metabolic acidosis ;

CI (carvedilol): severe hypotens., hepatic impairment, mental incapacity,

CI (metoprolol): severe PVD, anesthesia that produces cardiac depress.,

CI (nadalol): allergic rhinitis,

CI (oxprenolol): allergic rhinitis, anesthesia producing cardiac depression,

CI (pindolol): anesthesia produc. cardiac depression

CI (propranolol): allergic. rhinitis

Acebutolol		EHL 3–4h, PRC B, Lact ? β_1	ISA
Sectral <i>Tab 100mg, 200mg, 400mg</i> Rhotral <i>Tab 100mg, 200mg, 400mg</i> Generics <i>Tab 100mg, 200mg, 400mg</i>	HTN: ini 100mg PO bid, max 800mg/d PO qd or div bid; Angina pectoris: ini 200mg PO bid, maint 200–600mg PO div bid; DARF: GFR (ml/min) <50: 50%; <25: 25%	+	+
Atenolol		EHL 6–7h, PRC D, Lact ?	
Apo, Novo, Nu-Atenol <i>Tab 50mg, 100mg</i> Tenormin <i>Tab 50mg, 100mg</i> Generics <i>Tab 50mg, 100mg</i>	HTN: ini 50mg PO qd, maint 50–100mg PO qd; Angina pectoris: ini 50 PO qd, maint 50–200mg/d PO qd or div bid; DARF: GFR (ml/min) 15–35: max 50mg/d; <15: max 50mg/od PO	+	-
Bisoprolol		EHL 10v12.4h, PRC C, Lact ?	
Monacor <i>Tab 5mg, 10mg</i>	HTN: ini 5mg PO qd, max 20mg/d; DARF/DAHf: ini 5mg PO qd, caution with dose-titration	+	-
Carvedilol		EHL 6–10h, PRC C, Lact ?	
Generics <i>Tab 3.125mg, 6.25mg, 12.5mg, 25mg</i>	Heart failure: ini 3.125mg PO bid incr dose q2 wk as tolerated to max 25mg bid; DARF: not req; DAHF: contraindicated	-	-
Esmolol		EHL 9min, PRC C, Lact ?	
Brevibloc <i>Inj 10mg/ml, 250mg/ml</i>	Periprervative tachycardia/hypertension: 1.5mg/kg (max 100mg) IV over 30sec then 0.15mg/kg/min, max 0.3mg/kg/min, Atrial fibrillation/flutter: ini 0.5mg/kg/min IV for 1min, then 0.05mg/kg/min IV for 4min; DARF: not req	+	-
Labetalol		EHL 5–8h, PRC C, Lact +	(+)
Trandate <i>Tab 100mg, 200mg</i> Generics <i>Tab 100mg, 200mg, Inj 5mg/ml</i>	Hypertensive emergency: 20mg slow IV, then 40–80mg IV q10min prn, max 300mg total; HTN: ini 100mg PO bid, maint 200–400mg bid, max 1200mg/d; DARF: not req	-	(+)

Metoprolol		EHL 3–7h, PRC C, Lact ?	β_1	ISA
Betaloc Tab 50mg, 100mg, Inj 1mg/ml Betaloc Durules Tab ext.rel 200mg Lopresor Tab 50mg, 100mg, Inj 1mg/ml Lopresor SR Tab ext.rel 100mg, 200mg Novo-Metoprol Tab 50mg, 100mg Nu-Metop Tab 50mg, 100mg Generics Tab 25mg, 50mg, 100mg Tab ext. rel. 100mg, 200mg	HTN, Angina pectoris: ini 50mg PO bid or 50–100mg PO qd (ext.rel), incr prn max 400mg/d; acute MI: ini 5mg IV q2min up to 15mg, if tolerated give 50mg PO q6h for 48h, then 100mg PO bid; DARF: not req		+	-
Nadolol		EHL 20–24h, PRC C, Lact ?	-	-
Corgard Tab 40mg, 80mg, 160mg Apo-Nadol Tab 40mg, 80mg, 160mg Generics Tab 40mg, 80mg, 160mg	HTN: ini 80mg PO qd, maint 40–80mg/d, max 320 mg/d; Angina pectoris: ini 80mg PO qd, maint 40–80mg/d, max 240mg/d; DARF: GFR (ml/min): >50: q24h, 31–50: q24–36h, 10–30: q 24–48h, <10: q40–60h			
Oxprenolol		EHL 1.3–1.5h, PRC + Lact not rec	-	+
Trasicor Tab 40mg, 80mg	HTN: ini 20mg PO tid, maint 120–320mg/d, max 480mg/d		-	+
Pindolol		EHL 3–4h, PRC B, Lact ?	-	+
Apo, Novo, Nu-Pindol Tab 5mg, 10mg, 15mg Visken Tab 5mg, 10mg, 15mg Generics Tab 5mg, 10mg, 15mg	Angina pectoris: ini 5mg PO tid, maint 15–40mg/d div tid; HTN: ini 5mg PO bid, maint 15–45mg/d, max 45 mg/d; DARF: not req			

Propranolol		EHL 3–4h, PRC C, Lact ? β_1	ISA
Inderal LA <i>Cap ext.rel</i> 60mg, 80mg, 120mg, 160mg Novo-Pranol <i>Tab</i> 10mg, 20mg, 40mg, 80mg Generics <i>Tab</i> 10mg, 20mg, 40mg, 80mg, 120mg, <i>Inj</i> 1mg/ml	HTN: ini 40mg PO bid, maint 120–240mg/d, max 640mg/d; ext.rel: ini 60–80mg PO qd, maint 120–160mg/d, max 640mg/d; angina: ini 10–20mg PO tid–qid, maint 160–240mg/d; arrhythmias: 1–3mg IV, rep after 2min prn; 10–30mg PO tid–qid; MI: 180–240mg/d PO div bid–qid; migraine: ini 80mg/d PO, maint 160–240mg/d; essential tremor: ini 40mg PO bid, maint 120mg/d; pheochromocytoma: preop. for 3 days 60 mg/d PO in div doses bid–tid in combination with an alpha blocking agent; hypertrophic subaortic stenosis: 20–40mg PO tid–qid; CH 2–4mg/kg/d PO div bid; DARF: not req	-	-
Timolol		EHL 2–4h, PRC C, Lact ?	-
Apo, Novo-Timol <i>Tab</i> 5mg, 10mg, 20mg Generics <i>Tab</i> 5mg, 10mg, 20mg	HTN: ini 10mg PO bid, maint 20–40mg/d, max 60mg/d; MI: 10mg PO bid; migraine: ini 10mg PO bid, maint 20mg/d qd; max 30mg/d; DARF: not req	-	-

β_1 : selective blockage of β_1 -receptors;

ISA: intrinsic sympathomimetic activity = partial agonistic and antagonist activity

2.3 ACE Inhibitors

2.3.1 ACE Inhibitors – Single Ingredient Drugs

MA: competitive blockage of angiotensin converting enzyme \Rightarrow angiotensin II \downarrow , bradykinin \uparrow

EF: vasodilation \Rightarrow BP \downarrow , renal blood flow \uparrow , aldosterone \downarrow , catecholamines \downarrow , reversal of myocardial and blood vessel wall hypertrophy, protective in diabetic nephropathy

AE: acute RF, rash, dry cough, hair loss, angioedema, dizziness, fatigue, headache, hyperkalemia, hyponatremia, complete blood count changes, urticaria, hypotension

CI: angiodema, hypersensitivity to drug CI (cilazapril): ascites

Benazepril		EHL 0.6 h, PRC C(1), D(2nd, 3rd trim.), Lact +
Lotensin <i>Tab</i> 5mg, 10mg, 20mg Generics <i>Tab</i> 5mg, 10mg, 20mg	HTN: ini 10mg PO qd, maint 20–40mg PO qd or div bid, max 80mg/d; DARF: GFR (ml/min) <30 : ini 5mg PO qd, max 10mg/d	

Captopril	EHL 1.9h, PRC C(1), D(2nd, 3rd trim.), Lact +
Apo, Nu-Capto Tab 6.25mg, 12.5mg, 25mg, 50mg, 100mg Capoten Tab 12.5mg, 25mg, 50mg, 100mg Generics Tab 6.25mg, 12.5mg, 25mg, 50mg, 100mg	HTN: ini 25mg PO bid-tid, max 450 mg/d; heart failure: ini 12.5–25mg PO tid, incr to 150–300mg/d div tid, max 450mg/d; LV dysfunction after MI: ini 6.25mg po x 1, then 12.5mg PO tid, maint. 50mg PO tid; Diabetic nephropathy: maint 25mg PO tid; DARF: GFR (ml/min/1.73m ²) 35–75: q12–24h; 20–34: q24–48h; 8–19: q48–72h; 5–7: q72–108h
Cilazapril	EHL 8.9h, PRC contraindicated, Lact +
Inhibace Tab 1mg, 2.5mg, 5mg Generics Tab 1mg, 2.5mg, 5mg	HTN: ini 2.5mg PO qd, maint 2.5–5mg qd, max 10mg/d; heart failure: ini 0.5mg PO qd, maint 1–2.5mg qd, max 2.5mg/d; DARF: GFR (ml/min) 10–40ml/min: ini 0.25–0.5mg qd max 2.5mg qd; <10ml/min 0.25–0.5mg qwk-biw
Enalapril/Enalaprilat	EHL 1.3h, PRC C(1st), D(2nd, 3rd trim.), Lact +
Vasotec Tab 2.5mg, 5mg, 10mg, 20mg, Inj 1.25mg/ml	HTN: ini 5mg PO qd, maint 10–40mg PO qd or div bid, max 40mg/d; 1.25mg IV q6h, max 5mg IV q6h; heart failure: ini 2.5 mg PO qd, maint 5–20mg/d PO div qd-bid, max 40mg/d; CH heart failure: 0.08mg/kg/d PO qd or div bid; DARF: GFR (ml/min) <30: ini 2.5mg PO qd, titrate prn, max 40mg/d; <30: 0.625mg IV q6h
Fosinopril	EHL 11.5h, PRC C(1st), D(2nd, 3rd trim.), Lact +
Monopril Tab 10mg, 20mg	HTN: ini 10mg PO qd, maint 20mg PO qd, max 40mg/d; heart failure: ini 10mg PO qd, maint 20–40mg PO qd, max 40mg/d; DARF: not req

Lisinopril	EHL 12h, PRC C(1st), D(2nd, 3rd trim.), Lact +
Prinivil Tab 2.5mg, 5mg, 10mg, 20mg Zestril Tab 5mg, 10mg, 20mg Generic Tab 5mg	HTN: ini 10mg PO qd, maint 10–40mg PO qd, max 80mg/d; heart failure: ini 2.5mg PO qd, maint 5–20mg PO qd, max 80mg/d; acute MI: 5mg PO then 5mg PO after 24h, then 10mg after 48h, then 10mg PO qd; DARF: GFR (ml/min) 10–30: ini 2.5–5mg PO, <10: ini 2.5mg PO, titrate dosage prn, max 40mg/d
Perindopril	EHL 0.9 h, PRC C(1st), D(2nd, 3rd trim.), Lact +
Coversyl Tab 2mg, 4mg, 8mg Generic Tab 8mg	HTN: ini 4mg PO qd, maint 4–8mg PO qd, max 8mg/d; heart failure: ini 2mg PO qd, maint 4mg PO qd; DARF: GFR (ml/min) 30–60: 2mg/d, 15–30: 2mg PO qod, <15: 2.5mg PO on dialysis day
Quinapril	EHL 0.8h, PRC C(1st), D(2nd, 3rd trim.), Lact +
Accupril Tab 5mg, 10mg, 20mg, 40mg	HTN: ini 10mg PO qd, max 40mg/d; heart failure: ini 5 mg PO qd, maint 20–40mg/d div bid; DARF: GFR (ml/min) >60: ini 10mg PO; 30–60: ini 5mg PO; 10–30: ini 2.5mg PO, then titrate to the optimal response
Ramipril	EHL 1–5h, PRC C(1st), D(2nd, 3rd trim.), Lact +
Altace Cap 1.25mg, 2.5mg, 5mg, 10mg Generics Cap 1.25mg, 2.5mg, 5mg, 10mg	HTN: ini 2.5mg PO qd, maint 2.5–20mg PO qd or div bid, max 20mg/d; acute MI: ini 2.5mg PO bid, maint 2.5–5mg bid, max 10mg/d; DARF: GFR (ml/min) <40: ini 1.25mg PO qd
Trandolapril	EHL 0.6–1.3h, PRC C(1), D(2nd,3rd trim), Lact +
Mavik Cap 0.5mg, 1mg, 2mg, 4mg	HTN: ini 1mg PO qd, maint 1–2mg PO qd, max 4mg/d; DARF: GFR (ml/min) <30: ini 0.5mg, max 1mg/d DALF: ini 0.5mg

2.3.2 ACE Inhibitors - Combinations	
Cilazapril + HCTZ	PRC X, Lact +
Inhibace Plus <i>Tab 5 + 12.5mg</i> Generics <i>Tab 5 + 12.5mg</i>	HTN: 5+12.5-10+25mg PO qd; DARF: GFR (ml/min) 10-40ml/min: ini 0.5mg qd, max 2.5mg qd; <10ml/min 0.25-0.5mg qwk or biwk
Enalapril + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Vaseretic <i>Tab 5 + 12.5mg, 10 + 25mg</i>	HTN: 5+12.5-10+25mg PO qd, max 20+50mg PO qd or div bid; DARF: GFR (ml/min) >30: 100%, <30: not rec
Lisinopril + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Prinzide <i>Tab 10 + 12.5mg, 20 + 12.5mg, 20 + 25mg</i> Zestoretic <i>Tab 10 + 12.5mg, 20 + 12.5mg, 20 + 25mg</i>	HTN: 10+12.5 - 20+25mg PO qd; DARF: GFR (ml/min) >30: 100%, <30: not rec
Perindopril + Indapamide	PRC C(1st), D(2nd, 3rd trim.), Lact +
Coversyl Plus <i>Tab 4 + 1.25mg</i>	HTN: ini 4 + 1.25mg PO qd, maint 4 + 1.25mg-8 + 2.5mg PO qd; DARF (perindopril): GFR (ml/min) 30-60: 2mg/d, 15-30: 2mg PO qod, <15: 2.5mg PO on dialysis day
Ramipril + HCTZ	PRC C(1st), D(2nd, 3rd trim.), Lact +
Altace-HCT <i>Tab 2.5 + 12.5mg, 5 + 12.5mg, 10 + 12.5mg, 5 + 25mg, 10 + 25mg</i>	HTN: ini 2.5 + 12.5mg, maint 2.5 + 12.5mg-10 + 25mg/d
Quinapril + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Accuretic <i>Tab 10 + 12.5mg, 20 + 12.5mg, 20 + 25mg</i>	HTN: 10+12.5-20+25mg PO, max 40+25mg PO qd; DARF: GFR (ml/min) >30: 100%, <30: not rec
Trandolapril + Verapamil SR	PRC C(1), D(2nd,3rd trim), Lact +
Tarka <i>Tab 2 + 180mg, 1 + 240mg, 2 + 240mg, 4 + 240mg</i>	HTN: 1+180-4+240mg PO qd, max 8+480mg/d; DARF: GFR (ml/min) <30: ini 0.5mg (trandolapril), titrate to opt. response

2.4 Angiotensin II Receptor Blockers

2.4.1 Angiotensin II Receptor Blockers – Single Ingredient Drugs

MA (ARBs): inhibition of type 1 angiotensin II receptor

EF: selective blockage of angiotensin II-effects without action on bradykinin breakdown

AE: headache, dizziness, nausea, abdominal pain

CI: hypersensitivity to drug

Candesartan	PRC C(1st), D(2nd, 3rd trim.), Lact ?
Atacand <i>Tab 8mg, 16mg</i>	HTN : ini 16mg PO qd, max 32mg/d
Eprosartan	EHL 6h, PRC C(1st), D(2nd, 3rd trim.), Lact -
Teveten <i>Tab 400mg, 600mg</i>	HTN : ini 400-600mg PO qd, max 800mg qd or div bid
Irbesartan	EHL 11-15h, PRC C(1), D(2nd, 3rd trim.), Lact ?
Avapro <i>Tab 75mg, 150mg, 300mg</i>	HTN : ini 150mg PO qd, max 300mg/d; DARF : not req
Losartan	EHL 1.5-2h, PRC C(1), D(2nd, 3rd trim.), Lact ?
Cozaar <i>Tab 25mg, 50mg, 100mg</i>	HTN : ini 50mg PO qd, max 100mg qd or div bid; DAHF : ini 25mg PO qd
Telmisartan	EHL 24h, PRC C(1st), D(2nd, 3rd trim.), Lact ?
Micardis <i>Tab 40mg, 80mg</i>	HTN : ini 40mg PO qd, max 80mg/d
Valsartan	EHL 6-9h, PRC C(1st), D(2nd, 3rd trim.), Lact ?
Diovan <i>Cap 80mg, 160mg</i>	HTN : ini 80mg PO qd, max 160mg/d; DARF : GFR (ml/min) >10: not req

2.4.2 Angiotensin II Receptor Blockers – Combinations

Candesartan + HCTZ	PRC C(1st), D(2nd, 3rd trim.), Lact ?
Atacand Plus <i>Tab 16 + 12.5mg</i>	HTN : 16+12.5mg-32+25mg PO qd
Eprosartan + HCTZ	PRC C(1st), D(2nd, 3rd trim.), Lact -
Teventen Plus <i>Tab 600 + 12.5mg</i>	HTN : 600+12.5 PO qd
Irbesartan + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Avalide <i>Tab 150 + 12.5mg, 300 + 12.5mg, 300 + 25mg</i>	HTN : 150+12.5-300+25mg PO qd; DARF : GFR (ml/min) >30: 100%, <30: not rec
Losartan + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Hyzaar <i>Tab 50 + 12.5mg</i> Hyzaar DS <i>Tab 100 + 25mg</i>	HTN : 50+12.5-100+25mg PO qd; DARF : GFR (ml/min) >30: 100%, <30: not rec

Telmisartan + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Micardis Plus <i>Tab 80 + 12.5mg</i>	HTN: 80+12.5-160+25mg PO qd
Valsartan + HCTZ	PRC C(1st trim.), D(2nd, 3rd trim.), Lact -
Diovan-HCT <i>Tab 80 + 12.5mg, 160 + 12.5mg, 160 + 25mg</i>	HTN: 80+12.5-160+25mg PO qd; DARF: GFR (ml/min) >30: 100%, <30: not rec

2.5 Calcium Channel Blockers

2.5.1 CCBs - Dihydropyridines

MA: blockage of inflow of calcium ions \Rightarrow neg. inotropic effect, myocardial O_2 consumption \downarrow , predominantly arterial vasodilation \Rightarrow afterload \downarrow , preload unchanged!

AE: hypotension, flush, reflex tachycardia, peripheral edema, headache, complete blood count changes, gingival hyperplasia;

CI: hypersensitivity to drug, severe hypotension

CI (flunarizine): depression, pre-existing extrapyramidal disorders

Amlodipine	EHL 35-50h, PRC C, Lact ?
Norvasc <i>Tab 5mg, 10mg</i>	HTN, angina pectoris: ini 5mg PO qd, max 10mg qd; DARF: not req; DAHF: ini 2.5mg PO qd
Felodipine	EHL 10-16h, PRC C, Lact ?
Piendil <i>Tab ext.rel 2.5mg, 5mg, 10mg</i> Renedil <i>Tab ext.rel 2.5mg, 5mg, 10mg</i> Generics <i>Tab ext.rel 5mg, 10mg</i>	HTN: ini 5mg PO qd, maint 5-10mg/d; DARF: not req
Flunarizine	EHL 19d, PRC ?, Lact +
Sibelim <i>Cap 5mg</i>	Migraine Prophylaxis: 10mg/d
Nifedipine	EHL 2-5h, 10h (ext. rel.), PRC C, Lact +
Adalat XL <i>Tab ext.rel 20mg, 30mg, 60mg</i> Apo-Nifed <i>Cap 5mg, 10mg</i> Apo-Nifed PA <i>Tab ext. rel. 10mg, 20mg</i> Novo-Nifedin <i>Cap 5mg, 10mg</i> Nu-Nifed <i>Cap 10mg</i> Generics <i>Tab ext.rel 10mg, 20mg</i>	HTN: ext.rel: ini 20-30mg PO qd, max 90mg/d; angina pectoris: ini 10mg PO tid, maint 10-20mg tid; ext.rel: ini 30mg PO qd, max 90mg/d; DARF: not req

2.5.2 CCBs – Non-Dihydropyridines

MA: blockage of inflow of calcium ions; **EF:** neg. inotropic and chronotropic effect, myocardial O₂ consumption ↓, vasodilation (afterload ↓, preload unchanged!), AV conduction time ↑, AV refractory period ↑; **AE:** allergic reactions/dermatitis, bradycardia, AV block, cardiac arrest, congestive heart failure, N/V, constipation, diarrhea, dizziness, headache, fatigue, peripheral edema, pulmonary edema

CI: AV block II°–III°, SA block, sick sinus syndrome, cardiogenic shock, hypotension, severe congestive heart failure, bradycardia, hypersensitivity to drug

Diltiazem

EHL 3–6.6h, PRC C, Lact -

Apo-Diltiaz *Tab 30mg, 60mg, Inj 5mg/ml*

Apo-Diltiaz CD *Cap cont. del. 120mg, 180mg, 240mg, 300mg*

Apo-Diltiaz SR *Cap sust. rel. 60mg, 90mg, 120mg*

Cardizem *Tab 30mg, 60mg*

Cardizem CD *Cap cont. del. 120mg, 180mg, 240mg, 300mg*

Cardizem SR *Cap sust. rel. 60mg, 90mg, 120mg*

Nu-Diltiaz *Tab 30mg, 60mg*

Tiazac *Cap ext. rel. 120mg, 180mg, 240mg, 300mg, 360mg*

Tiazac XC *Tab ext. rel. 120mg, 180mg, 240mg, 300mg, 360mg*

Generics *Tab 30mg, 60mg, Cap ext. rel. 60mg, 90mg, 120mg, 180mg, 240mg, 300mg, 360mg, Inj 5mg/ml*

Chronic stable and vasospastic angina

pectoris: ini 30mg PO qid, max 360mg/d;

ext.rel: 120–360mg qd; HTN: cont. del.: ini 180–240mg PO qd; sust. rel.: 120–360mg/d div bid, max 360mg/d;

AF: ini 0.25mg/kg IV over 2min, rep prn after 15min with

0.35mg/kg; continous inf: 5–15mg/h;

DARF: not req

Verapamil

EHL 4–12h, PRC C, Lact +

Apo, Nu-Verap *Tab 80mg, 120mg*

Covera-HS *Tab ext. rel. 180mg, 240mg*

Isoptin SR *Tab ext. rel. 120mg, 180mg, 240mg*

Novo-Veramil SR *Tab sust. rel. 240mg*

Generics *Tab 80mg, 120mg, Tab ext. rel. 120mg, 180mg, 240mg, Inj 2.5mg/ml*

HTN: ini 80mg PO tid, ext.rel: 180–240mg

PO qd–bid, max 480mg/d; **chronic stable**

angina: ini 80mg PO tid–qid, max 480mg/d;

obstructive hypertrophic cardiomyopathy:

ini 80–120mg PO tid–qid;

SVT: 5–10mg IV over 2min, rep after 15–30min prn; continuous inf: 5mg/h IV;

AF: 240–480mg/d PO div tid–qid;

CH 1–15 y: **arrhythmias:** 0.1–0.3mg/kg IV;

DARF: not req

2.6 Adrenergic Inhibitors

2.6.1 Central Acting Alpha Agonists

MA (clonidine, methyldopa): stimulation of central α_2 -receptors (presynaptic effect) \Rightarrow release of noradrenaline \downarrow , postsynaptic effect \Rightarrow peripheral sympathetic tone \downarrow , release of renin \downarrow , (\Rightarrow inhibition of renin-angiotensin-aldosterone-system); additional agonistic effect on imidazole-receptor;

EF (clonidine, methyldopa): BP \downarrow due to reduction of peripheral resistance, stroke volume and cardiac output **AE** (clonidine,): AV block, bradycardia, drowsiness, dry mouth

AE (clonidine): AV block, bradycardia, drowsiness, oral dryness

CI (clonidine): bradycardia, **CI** (methyldopa): active liver disease, therapy with MAO inhibitors

Clonidine

EHL 12–16h, PRC C, Lact ?

Catapres Tab 0.1mg, 0.2mg

Dixarit Tab 0.025mg

Generics Tab 0.1mg, 0.2mg

HTN: ini 0.1 mg PO bid,

maint 0.2–0.6mg/d div;

menopausal flushing: 0.05mg PO bid;

CH HTN: ini 5–10mcg/kg/d PO div bid–tid, max 0.9mg/d; **DARF:** not req

Methyldopa

EHL 1.7h, PRC B, Lact +

Nu-Medopa Tab 250mg, 500mg

Generics Tab 125mg, 250mg, 500mg

HTN: ini 250mg PO bid–tid,

maint 500–2000mg/d div bid–qid;

CH HTN: 10mg/kg/d PO div bid–qid, max 65 mg/kg/d;

DARF: GFR (ml/min) >50: q8h;

10–50: q8–12h; <10: q12–24h

2.6.2 Alpha Adrenergic Blockers

MA: reversible blockage of α_1 -receptor; **MA** (phenoxybenzamine): irreversible blockage of α_1/α_2 -receptor; **EF:** vasodilation, pre- and afterload \downarrow ; **AE:** reflex tachycardia (not prazosin), arrhythmia, postural hypotension, fatigue, nausea, dyspepsia, diarrhea; "adverse epinephrine effect": epinephrine \rightarrow vasodilation and BP \downarrow when receptors are blocked due to β -mimetic effect; **AE** (Prazosin): "first-dose phenomenon": postural hypotension after first dose \Rightarrow slow incr in dosage!; **CI:** hypersensitivity to drug **CI** (doxazosin, prazosin) hypersensitivity to quinazolines; **CI** (phentolamine) myocardial infarction or history of, coronary insufficiency, angina, hypotension, hypersensitivity to sulfites