

Table S1. Commonly used BP-lowering medication classes registered in Singapore

This table only includes medications from the major classes mentioned in the ACG and is non-exhaustive. Information from local product inserts has been referenced and supplemented with information from consolidated product monographs (e.g., Lexicomp) where local product inserts are unavailable or unclear. Refer to local product inserts for full details before prescribing. Information from other references (e.g., international guidelines) may differ. Clinical judgement should be exercised at all times when making decisions for an individual patient. For fixed-dose combination products, refer to information on individual components.

Medication class/ mechanism of action	Name ^{††}	Dosing recommendations ^{§§}	Renal dose adjustment ^{***}	Precautions and adverse reactions (common/significant)
Angiotensin-converting enzyme (ACE) inhibitor inhibits the formation of angiotensin II, leading to vasodilation	<u>Captopril</u>	Initial: 6.25–25 mg BD-TDS Max: 50 mg TDS	CrCl 10–50, administer 75% of normal dose every 12–18h CrCl <10, 50% of normal dose every 24h	Precaution: women of child-bearing potential Side effects: decline in renal function, hyperkalemia, angioedema, cough (more common in ACE inhibitor) Contraindication: pregnant women
	<u>Enalapril</u>	Initial: 2.5–10 mg OD Max: 40 mg/day	CrCl 10–30, initial: 2.5 mg/day in 1–2 divided dose; max: 20 mg/day CrCl <10, initial: 1.25 mg OD or 2.5 mg EOD; max: 10mg/day	
	Imidapril	Initial: 2.5–10 mg OD Max: 20 mg OD	Renal impairment, initial: 2.5 mg OD CrCl <30, consider lowering to half of usual dose or prolonging time interval between doses	
	<u>Lisinopril</u>	Initial: 2.5–10 mg OD Max: 40 mg OD	CrCl <10, initial: 2.5 mg OD CrCl 10–30, initial: 2.5–5 mg OD	
	Perindopril arginine	Initial: 2.5–5 mg OM Max: 10 mg OD	CrCl 60–89, max: 5 mg/day CrCl 30–59, max: 2.5 mg/day CrCl 15–29, max: 2.5 mg EOD	
	Perindopril erbumine	Initial: 4 mg OD Max: 8–16 mg OD	CrCl 30–80, initial: 2 mg OM, max: 8 mg OM CrCl <30, not recommended	
	Ramipril	Initial: 2.5 mg OD Max: 10 mg/day	CrCl 20–50, initial: 1.25 mg OM, max: 5 mg/day	
Angiotensin II receptor blocker blocks type 1 angiotensin II receptors, preventing vascular contraction	<u>Candesartan</u>	Initial: 4–8 mg OD Max: 32 mg OD	Renal impairment, initial: 4 mg OM	
	Eprosartan	Initial: 300–600 mg OM Max: 1200 mg OD (in clinical trials for 8 weeks)	CrCl <60, initial: 300 mg OM	
	Fimasartan	Initial: 60 mg OD Max: 120 mg OD	CrCl <30, initial: 30 mg OD, max: 60 mg OD	
	Irbesartan	Initial: 75–150 mg OD Max: 300 mg OD	No dosage adjustment needed	
	<u>Losartan</u>	Initial: 25–50 mg OD Max: 100 mg OD	CrCl <20, initial: 25 mg OD	
	Olmesartan	Initial: 20 mg OD Max: 40 mg OD	No dose adjustment needed	
	<u>Telmisartan</u>	Initial: 20–40 mg OD Max: 80 mg OD	No dose adjustment needed	
	<u>Valsartan</u>	Initial: 80–160 mg OD Max: 320 mg OD	CrCl <10, use with caution	
Beta blocker blocks the neurotransmitters norepinephrine and epinephrine from binding to receptors	Cardioselective			
	Acebutolol	Initial: 100–200 mg BD (200–400 mg/day in 1–2 divided doses) Max: 600 mg BD (1200 mg/day)	CrCl <50, reduce daily dose by 50% CrCl <25, reduce daily dose by 75%	Precaution: Avoid abrupt discontinuation, risk of bradycardia Side effects: Masking of hypoglycemia, bronchospasm (especially non-cardioselective beta blockers)
	<u>Atenolol</u>	Initial: 25 mg OD-BD Max: 100 mg/day	CrCl 15–35, max: 50 mg OD CrCl <15, max: 25 mg OD or 50 mg EOD	
	<u>Bisoprolol</u>	Initial: 2.5–5 mg OD Max: 20 mg/day	CrCl <20, initial: lower initial dose, max: 10 mg/day	
	Metoprolol tartrate	Initial: 50 mg BD Max: 400 mg/day in divided doses	No dose adjustment needed	
	Nebivolol	Initial: 2.5–5 mg OD Max: 40 mg/day ^{†††}	In patients with renal insufficiency, initial: 2.5 mg OD, max: 5 mg OD	
	Non-cardioselective			
	<u>Carvedilol</u>	Initial: 12.5 mg OD for first 2 days, then 25 mg OD Max: 50 mg/day	No dose adjustment needed	Refer to precautions and side effects of cardioselective beta blockers
	Labetalol	Initial: 100 mg BD Max: 800–2400 mg/day in divided doses	No dose adjustment needed	
	<u>Propranolol</u>	Initial: 40 mg BD (80 mg/day in 1 to 4 divided doses) Max: 160 mg/day (usual 80–160 mg/day, max not mentioned)	Use with caution in renal impairment	

Medication class/ mechanism of action	Name ^{**}	Dosing recommendations ^{§§}	Renal dose adjustment ^{***}	Precautions and adverse reactions (common/significant)
Calcium channel blocker prevents calcium from entering the cells of the heart and arteries, which reduces contraction of arteries and allows vasodilation	Dihydropyridine			
	<u>Amlodipine</u>	Initial: 5 mg OD Max: 10 mg OD	No dose adjustment needed	Precaution: hepatic impairment Side effects: oedema, dizziness, headache
	Felodipine	Initial: 2.5–5 mg OD Max: 20 mg OD		
	Lacidipine	Initial: 2 mg OM Max: 6 mg OM		
	<u>Nifedipine LA</u>	Initial: 20–30 mg OD Max: 120 mg OD		
Non-dihydropyridine				
	<u>Verapamil</u> ^{†††}	IR - Initial: 40–80 mg TDS Max: 360–480 mg in divided doses (no evidence that dosages beyond 360 mg provided added effect) SR - Initial: 120–240 mg OM Max: 480 mg OM	Use with caution in renal impairment	Precaution: avoid abrupt discontinuation, heart block, LV dysfunction, hepatic impairment Side effects: oedema, bradycardia, constipation (verapamil), headache (verapamil), hepatotoxicity
	<u>Diltiazem hydrochloride</u>	Three different formulations, select and adjust dosage according to age and symptoms. IR - Usual: 30–60 mg TDS SR (BD) - Usual: 90 mg BD SR (OD) - Usual: 100–200 mg OD		
Diuretic diminishes sodium reabsorption at different sites in the nephron, thereby increasing urinary sodium and water loss	Thiazide and thiazide-like			
	<u>Hydrochlorothiazide</u>	Initial: 12.5–25 mg OD Max: 50–100 mg OD	Use with caution in renal impairment CrCl <10, use not recommended due to lack of efficacy	Precaution: risk of squamous cell carcinoma Side effects: hyperuricemia, hypokalaemia, hyponatremia, hypercalcemia, hyperglycaemia, photosensitivity
	Indapamide	IR - Initial & Max: 2.5 mg OM SR - Initial & Max: 1.5 mg OM	CrCl <30, contraindicated	

CrCl, creatinine clearance in mL/min; BD, twice daily; EOD, every other day; OD, once daily; OM; once every morning; TDS, three times daily; IR, immediate release; LA, long acting; SR, slow release; QDS, four times daily

Underline denotes availability on government subsidy list.

^{**} Includes medications with single active ingredient registered in Singapore. For fixed-dose combination products, refer to information on individual components.

^{§§} Maximum dosage may be lower for elderly

^{***} The phrase "use not recommended" indicates limited or no clinical data reported in the product information leaflets

^{†††} Based on local product insert for nebivolol, recommended max dose for >65 years is 5mg/day

^{††††} Verapamil immediate release is not registered in Singapore but available as exemption item.

Table S2. List of single-pill combinations registered in Singapore

Medication classes	Agent names
ACE inhibitor + D (thiazide)	enalapril + HCTZ
ACE inhibitor + D (thiazide-like)	perindopril arginine + indapamide
ACE inhibitor + BB	perindopril arginine + bisoprolol
ACE inhibitor + CCB	perindopril arginine + amlodipine perindopril erbumine + amlodipine
ACE inhibitor + CCB + D (thiazide-like)	perindopril arginine + amlodipine + indapamide
ARB + CCB	irbesartan + amlodipine losartan + amlodipine olmesartan + amlodipine telmisartan + amlodipine valsartan + amlodipine
ARB + CCB + D (thiazide)	valsartan + amlodipine + HCTZ
ARB + diuretic (thiazide)	candesartan + HCTZ fimasartan + HCTZ irbesartan + HCTZ <u>losartan + HCTZ</u> telmisartan + HCTZ valsartan + HCTZ
CCB + BB	nifedipine + atenolol amlodipine + bisoprolol
D (thiazide) + D (potassium-sparing)	HCTZ + triamterene HCTZ + amiloride
D (thiazide-like) + CCB	indapamide + amlodipine

ACE inhibitor, angiotensin-converting enzyme inhibitor; ARB, angiotensin receptor blocker; BB, beta blocker; CCB, calcium channel blocker; D, diuretic; HCTZ, hydrochlorothiazide

Underline denotes availability on government subsidy list.