Cập nhật điều trị THA 2018: tầm quan trọng của thuốc ức chế calci DHP

PGS. TS Phạm Nguyễn Vinh
Đại học Y khoa Phạm Ngọc Thạch
Đại học Y khoa Tân Tạo
Bệnh viện Tim Tâm Đức
Viện Tim Tp. HCM

Pham Nguyen Vinh

Systematic Review Questions on High BP in Adults

Question Number	Question
1	Is there evidence that self-directed monitoring of BP and/or ambulatory BP monitoring are superior to office-based measurement of BP by a healthcare worker for 1) preventing adverse outcomes for which high BP is a risk factor and 2) achieving better BP control?
2	What is the optimal target for BP lowering during antihypertensive therapy in adults?
3	In adults with hypertension, do various antihypertensive drug classes differ in their comparative benefits and harms?
4	In adults with hypertension, does initiating treatment with antihypertensive pharmacological monotherapy versus initiating treatment with 2 drugs (including fixed-dose combination therapy), either of which may be followed by the addition of sequential drugs, differ in comparative benefits and/or harms on specific health outcomes?

BP indicates blood pressure.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

BP Measurement Definitions

BP Measurement	Definition
SBP	First Korotkoff sound*
DBP	Fifth Korotkoff sound*
Pulse pressure	SBP minus DBP
Mean arterial pressure	DBP plus one third pulse pressure†
Mid-BP	Sum of SBP and DBP, divided by 2

*See Section 4 for a description of Korotkoff sounds.
†Calculation assumes normal heart rate .
BP indicates blood pressure; DBP, diastolic blood pressure; and SBP, systolic blood pressure.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

CVD Risk Factors Common in Patients With Hypertension

Modifiable Risk Factors*	Relatively Fixed Risk Factors†
• Current cigarette smoking, secondhand smoking • Diabetes mellitus • Dyslipidemia/hypercholesterolemia • Overweight/obesity • Physical inactivity/low fitness • Unhealthy diet	• CKD • Family history • Increased age • Low socioeconomic/educational status • Male sex • Obstructive sleep apnea • Psychosocial stress

*Factors that can be changed and, if changed, may reduce CVD risk.
†Factors that are difficult to change (CKD, low socioeconomic/educational status, obstructive sleep apnea, cannot be changed (family history, increased age, male sex), or, if changed through the use of current intervention techniques, may not reduce CVD risk (psychosocial stress).
CKD indicates chronic kidney disease; and CVD, cardiovascular disease.

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Categories of BP in Adults*

BP Category	SBP		DBP
Normal	<120 mm Hg	and	<80 mm Hg
Elevated	120–129 mm Hg	and	<80 mm Hg
Hypertension			
Stage 1	130–139 mm Hg	or	80–89 mm Hg
Stage 2	≥140 mm Hg	or	≥90 mm Hg

*Individuals with SBP and DBP in 2 categories should be designated to the higher BP category.
BP indicates blood pressure (based on an average of ≥2 careful readings obtained on ≥2 occasions, as detailed in DBP, diastolic blood pressure; and SBP systolic blood pressure.

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Prevalence of Hypertension Based on 2 SBP/DBP Thresholds*†

	SBP/DBP ≥130/80 mm Hg or Self-Reported Antihypertensive Medication†		SBP/DBP ≥140/90 mm Hg or Self-Reported Antihypertensive Medication‡	
Overall, crude	46%		32%	
	Men (n=4717)	Women (n=4906)	Men (n=4717)	Women (n=4906)
Overall, age-sex adjusted	48%	43%	31%	32%
Age group, y				
20–44	30%	19%	11%	10%
45–54	50%	44%	33%	27%
55–64	70%	63%	53%	52%
65–74	77%	75%	64%	63%
75+	79%	85%	71%	78%
Race-ethnicity §				
Non-Hispanic White	47%	41%	31%	30%
Non-Hispanic Black	59%	56%	42%	46%
Non-Hispanic Asian	45%	36%	29%	27%
Hispanic	44%	42%	27%	32%

The prevalence estimates have been rounded to the nearest full percentage.
*130/80 and 140/90 mm Hg in 9623 participants (≥20 years of age) in NHANES 2011–2014.
†BP cutpoints for definition of hypertension in the present guideline.
‡BP cutpoints for definition of hypertension in JNC 7.
§ Adjusted to the 2010 age-sex distribution of the U.S. adult population.
BP indicates blood pressure; DBP, diastolic blood pressure; NHANES, National Health and Nutrition Examination Survey; and SBP, systolic blood pressure.

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Corresponding Values of SBP/DBP for Clinic, HBPM, Daytime, Nighttime, and 24-Hour ABPM Measurements

Clinic	HBPM	Daytime ABPM	Nighttime ABPM	24-Hour ABPM
120/80	120/80	120/80	100/65	115/75
130/80	130/80	130/80	110/65	125/75
140/90	135/85	135/85	120/70	130/80
160/100	145/90	145/90	140/85	145/90

ABPM indicates ambulatory blood pressure monitoring; BP, blood pressure; DBP diastolic blood pressure; HBPM, home blood pressure monitoring; and SBP, systolic blood pressure.

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BP Patterns Based on Office and Out-of-Office Measurements

	Office/Clinic/Healthcare Setting	Home/Nonhealthcare/ ABPM Setting
Normotensive	No hypertension	No hypertension
Sustained hypertension	Hypertension	Hypertension
Masked hypertension	**No hypertension**	**Hypertension**
White coat hypertension	**Hypertension**	**No hypertension**

ABPM indicates ambulatory blood pressure monitoring; and BP, blood pressure.

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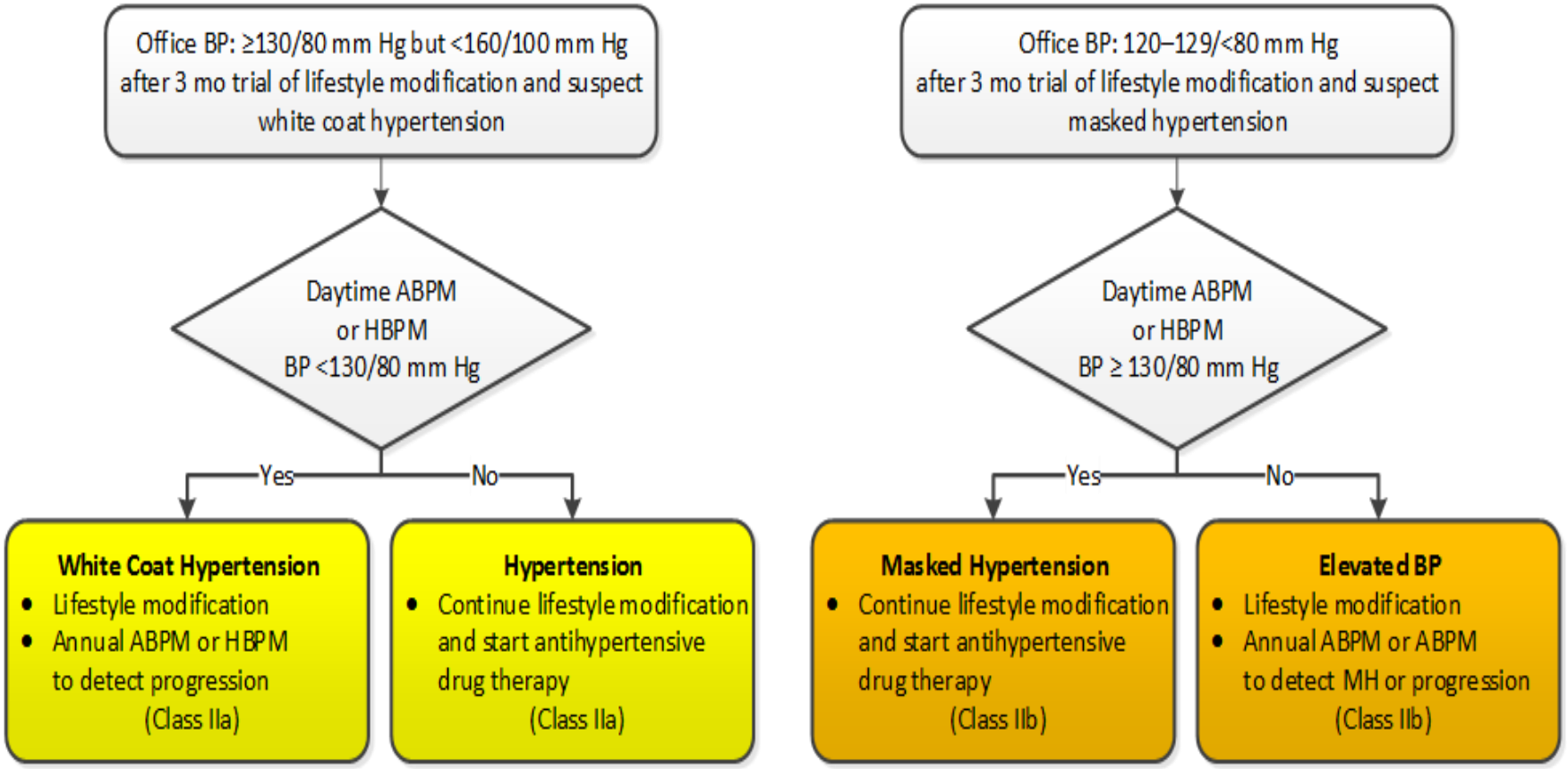
Detection of White Coat Hypertension or Masked Hypertension in Patients Not on Drug Therapy



Colors correspond to Class of Recommendation in Table 1.
ABPM indicates ambulatory blood pressure monitoring; BP, blood pressure; and HBPM, home blood pressure monitoring.

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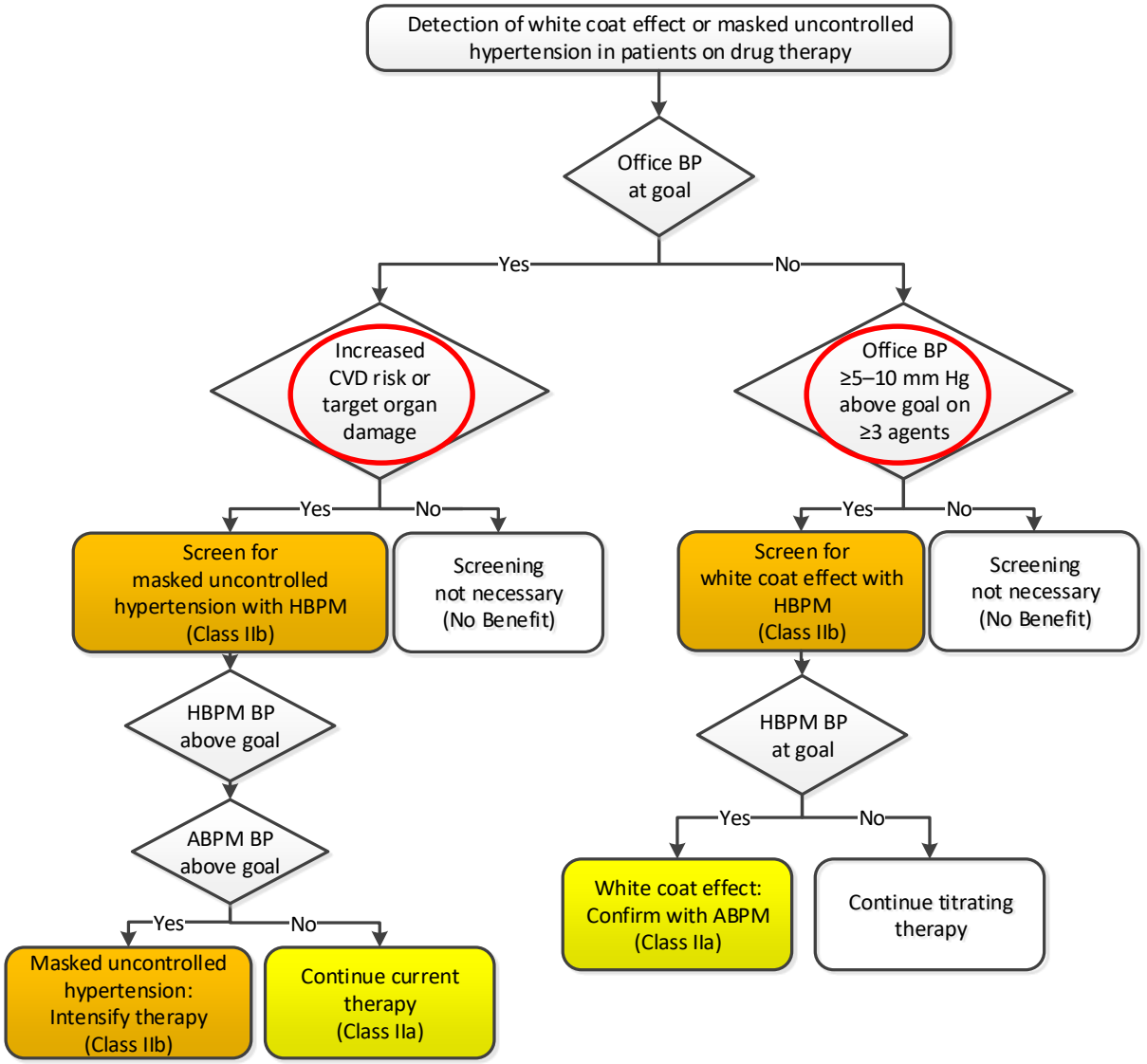
Detection of White Coat Effect or Masked Uncontrolled Hypertension in Patients on Drug Therapy



Colors correspond to Class of Recommendation in Table 1.
ABPM indicates ambulatory blood pressure monitoring; BP, blood pressure; and HBPM, home blood pressure monitoring.

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Causes of Secondary Hypertension With Clinical Indications

Common causes
Renal parenchymal disease
Renovascular disease
Primary aldosteronism
Obstructive sleep apnea
Drug or alcohol induced
Uncommon causes
Pheochromocytoma/paraganglioma
Cushing's syndrome
Hypothyroidism
Hyperthyroidism
Aortic coarctation (undiagnosed or repaired)
Primary hyperparathyroidism
Congenital adrenal hyperplasia
Mineralocorticoid excess syndromes other than primary aldosteronism
Acromegaly

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Primary Aldosteronism

COR	LOE	Recommendations for Primary Aldosteronism
I	C-EO	In adults with hypertension, screening for primary aldosteronism is recommended in the presence of any of the following concurrent conditions: resistant hypertension, hypokalemia (spontaneous or substantial, if diuretic induced), incidentally discovered adrenal mass, family history of early-onset hypertension, or stroke at a young age (<40 years).
I	C-LD	Use of the plasma aldosterone: renin activity ratio is recommended when adults are screened for primary aldosteronism.
I	C-EO	In adults with hypertension and a positive screening test for primary aldosteronism, referral to a hypertension specialist or endocrinologist is recommended for further evaluation and treatment.

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Renal Artery Stenosis

COR	LOE	Recommendations for Renal Artery Stenosis
I	A	Medical therapy is recommended for adults with atherosclerotic renal artery stenosis.
IIb	C-EO	In adults with renal artery stenosis for whom medical management has failed (refractory hypertension, worsening renal function, and/or intractable HF) and those with nonatherosclerotic disease, including fibromuscular dysplasia, it may be reasonable to refer the patient for consideration of revascularization (percutaneous renal artery angioplasty and/or stent placement).

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Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension*

	Nonpharmacologi-cal Intervention	Dose	Approximate Impact on SBP	
			Hypertension	Normotension
Weight loss	Weight/body fat	Best goal is ideal body weight, but aim for at least a 1-kg reduction in body weight for most adults who are overweight. Expect about 1 mm Hg for every 1-kg reduction in body weight.	-5 mm Hg	-2/3 mm Hg
Healthy diet	**DASH dietary** pattern	Consume a diet rich in fruits, vegetables, whole grains, and low-fat dairy products, with reduced content of saturated and total fat.	-11 mm Hg	-3 mm Hg
Reduced intake of dietary sodium	Dietary sodium	Optimal goal is <1500 mg/d, but aim for at least a 1000-mg/d reduction in most adults.	-5/6 mm Hg	-2/3 mm Hg
Enhanced intake of dietary potassium	Dietary potassium	Aim for 3500–5000 mg/d, preferably by consumption of a diet rich in potassium.	-4/5 mm Hg	-2 mm Hg

*Type, dose, and expected impact on BP in adults with a normal BP and with hypertension.
DASH indicates Dietary Approaches to Stop Hypertension; and SBP, systolic blood pressure.
Resources: Your Guide to Lowering Your Blood Pressure With DASH—How Do I Make the DASH?
Available at: https://www.nhlbi.nih.gov/health/resources/heart/hbp-dash-how-to.
Top 10 Dash Diet Tips. Available at: http://dashdiet.org/dash_diet_tips.asp

Best Proven Nonpharmacological Interventions for Prevention and Treatment of Hypertension* (cont.)

	Nonpharmacological Intervention	Dose	Approximate Impact on SBP	
			Hypertension	Normotension
Physical activity	Aerobic	● **90–150 min/wk** ● 65%–75% heart rate reserve	-5/8 mm Hg	-2/4 mm Hg
	Dynamic resistance	● **90–150 min/wk** ● 50%–80% 1 rep maximum ● 6 exercises, 3 sets/exercise, 10 repetitions/set	-4 mm Hg	-2 mm Hg
	Isometric resistance	● 4 × 2 min (hand grip), 1 min rest between exercises, 30%–40% maximum voluntary contraction, 3 sessions/wk ● 8–10 wk	-5 mm Hg	-4 mm Hg
Moderation in alcohol intake	Alcohol consumption	In individuals who drink alcohol, reduce alcohol† to: ● Men: ≤2 drinks daily ● Women: ≤1 drink daily	-4 mm Hg	-3 mm

*Type, dose, and expected impact on BP in adults with a normal BP and with hypertension.
†In the United States, one "standard" drink contains roughly 14 g of pure alcohol, which is typically found in 12 oz of regular beer (usually about 5% alcohol), 5 oz of wine (usually about 12% alcohol), and 1.5 oz of distilled spirits (usually about 40% alcohol).

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Basic and Optional Laboratory Tests for Primary Hypertension

Basic testing	Fasting blood glucose*
	Complete blood count
	Lipid profile
	Serum creatinine with eGFR*
	Serum sodium, potassium, calcium*
	Thyroid-stimulating hormone
	Urinalysis
	Electrocardiogram
Optional testing	Echocardiogram
	Uric acid
	Urinary albumin to creatinine ratio

*May be included in a comprehensive metabolic panel.
eGFR indicates estimated glomerular filtration rate.

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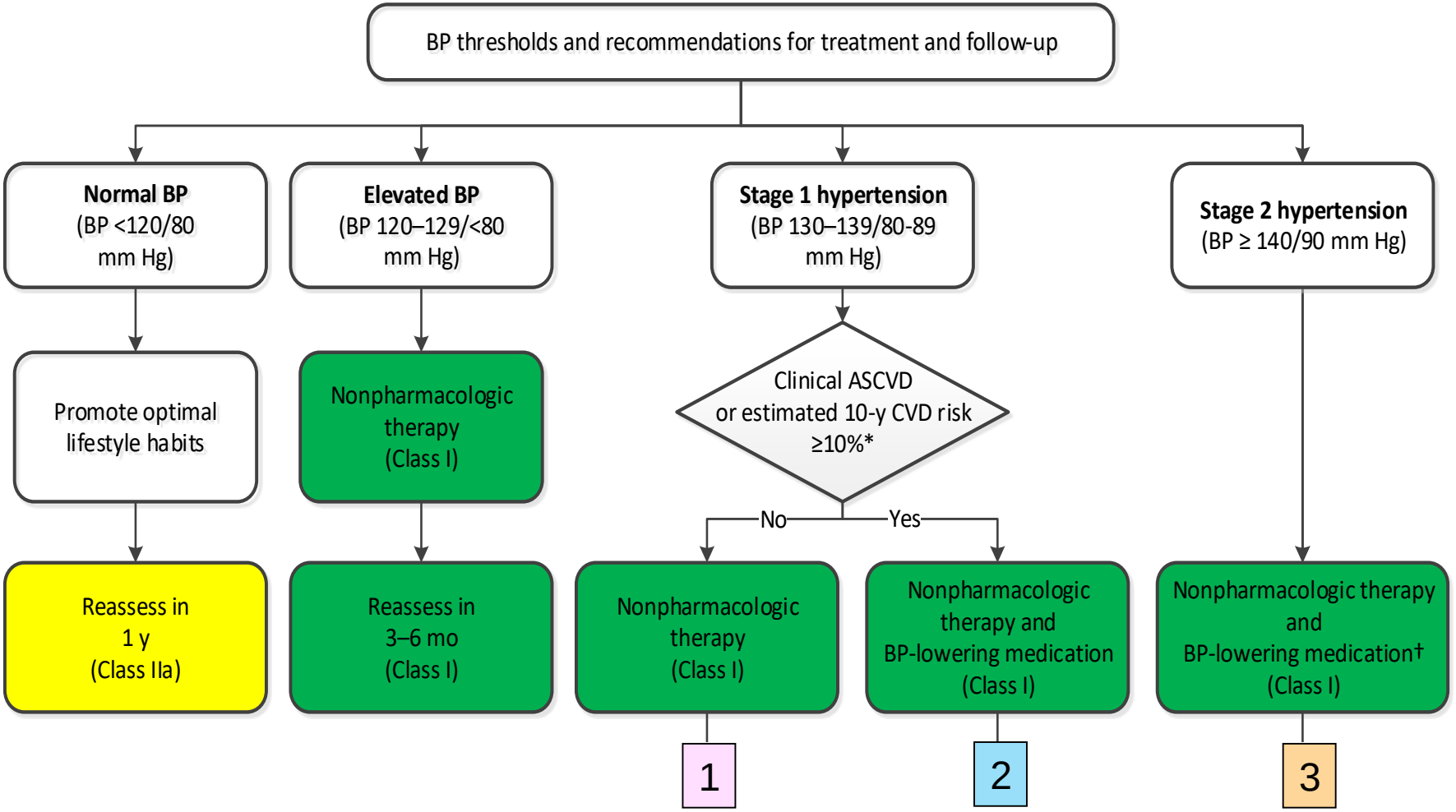
Blood Pressure (BP) Thresholds and Recommendations for Treatment and Follow-Up (continued on next slide)



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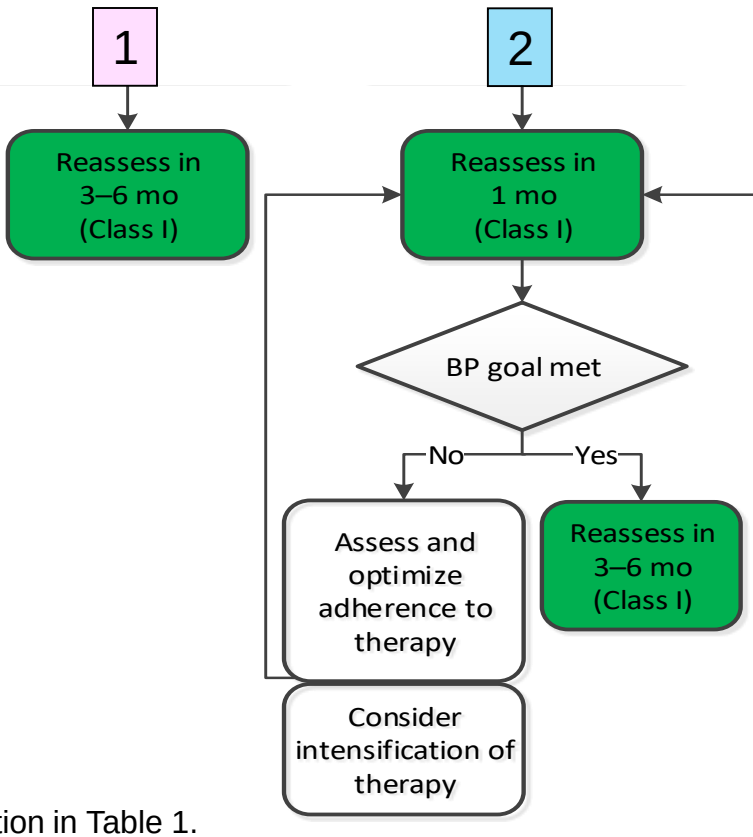

Colors correspond to Class of Recommendation in Table 1.

*Using the ACC/AHA Pooled Cohort Equations. Note that patients with DM or CKD are automatically placed in the high-risk category. For initiation of RAS inhibitor or diuretic therapy, assess blood tests for electrolytes and renal function 2 to 4 weeks after initiating therapy.

†Consider initiation of pharmacological therapy for stage 2 hypertension with 2 antihypertensive agents of different classes. Patients with stage 2 hypertension and BP ≥160/100 mm Hg should be promptly treated, carefully monitored, and subject to upward medication dose adjustment as necessary to control BP. Reassessment includes BP measurement, detection of orthostatic hypotension in selected patients (e.g., older or with postural symptoms), identification of white coat hypertension or a white coat effect, documentation of adherence, monitoring of the response to therapy, reinforcement of the importance of adherence, reinforcement of the importance of treatment, and assistance with treatment to achieve BP target.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Choice of Initial Medication

COR	LOE	Recommendation for Choice of Initial Medication
I	A^{SR}	For initiation of antihypertensive drug therapy, first-line agents include thiazide diuretics, CCBs, and ACE inhibitors or ARBs.

SR indicates systematic review.

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Choice of Initial Monotherapy Versus Initial Combination Drug Therapy

COR	LOE	Recommendations for Choice of Initial Monotherapy Versus Initial Combination Drug Therapy*
I	C-EO	Initiation of antihypertensive drug therapy with 2 first-line agents of different classes, either as separate agents or in a fixed-dose combination, is recommended in adults with stage 2 hypertension and an average BP more than 20/10 mm Hg above their BP target.
IIa	C-EO	Initiation of antihypertensive drug therapy with a single antihypertensive drug is reasonable in adults with stage 1 hypertension and BP goal <130/80 mm Hg with dosage titration and sequential addition of other agents to achieve the BP target.

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Follow-Up After Initiating Antihypertensive Drug Therapy

COR	LOE	Recommendation for Follow-Up After Initiating Antihypertensive Drug Therapy
I	B-R	Adults initiating a new or adjusted drug regimen for hypertension should have a follow-up evaluation of adherence and response to treatment at monthly intervals until control is achieved.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Stable Ischemic Heart Disease

COR	LOE	Recommendations for Treatment of Hypertension in Patients With Stable Ischemic Heart Disease (SIHD)
I	SBP: B-R	In adults with SIHD and hypertension, a BP target of less than 130/80 mm Hg is recommended.
	DBP: C-EO	
I	SBP: B-R	Adults with SIHD and hypertension (BP ≥130/80 mm Hg) should be treated with medications (e.g., GDMT beta blockers, ACE inhibitors, or ARBs) for compelling indications (e.g., previous MI, stable angina) as first-line therapy, with the addition of other drugs (e.g., dihydropyridine CCBs, thiazide diuretics, and/or mineralocorticoid receptor antagonists) as needed to further control hypertension.
	DBP: C-EO	

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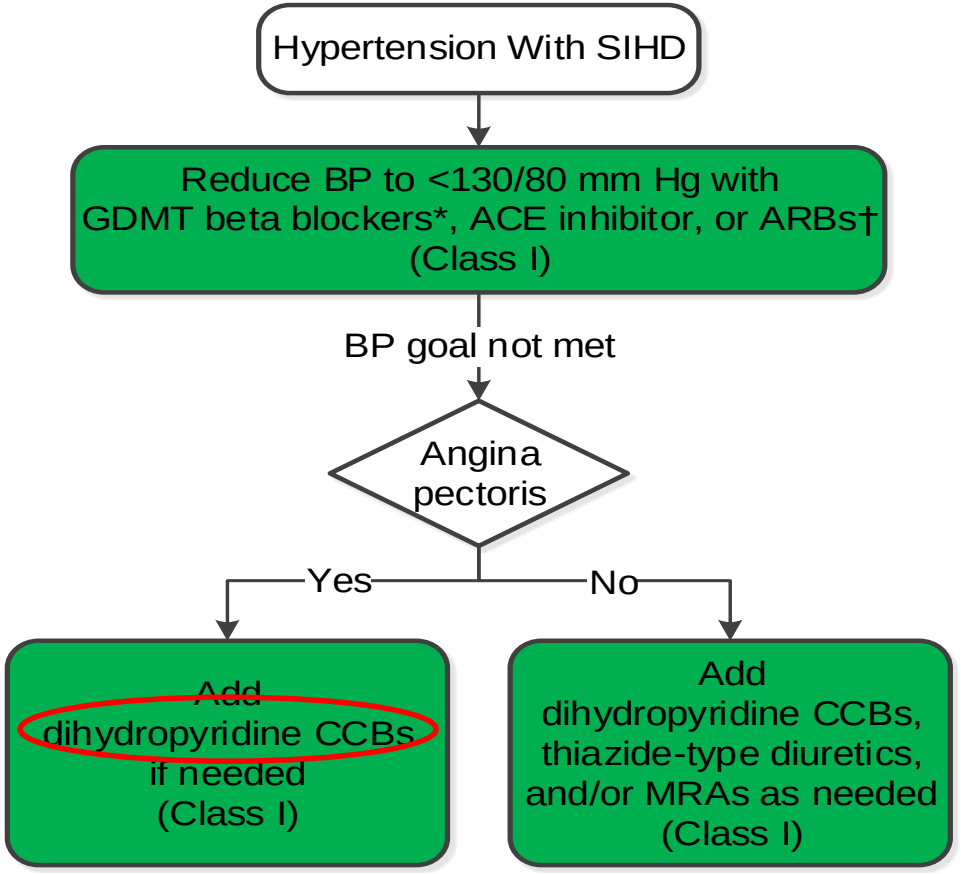
Stable Ischemic Heart Disease (cont.)

COR	LOE	Recommendations for Treatment of Hypertension in Patients With Stable Ischemic Heart Disease (SIHD)
I	B-NR	In adults with SIHD with angina and persistent uncontrolled hypertension, the addition of dihydropyridine CCBs to GDMT beta blockers is recommended.
IIa	B-NR	In adults who have had a MI or acute coronary syndrome, it is reasonable to continue GDMT beta blockers beyond 3 years as long-term therapy for hypertension.
IIb	C-EO	Beta blockers and/or CCBs might be considered to control hypertension in patients with CAD (without HF*r*EF) who had an MI more than 3 years ago and have angina.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Management of Hypertension in Patients With SIHD



Colors correspond to Class of Recommendation in Table 1.

*GDMT beta blockers for BP control or relief of angina include carvedilol, metoprolol tartrate, metoprolol succinate, nadolol, bisoprolol, propranolol, and timolol. Avoid beta blockers with intrinsic sympathomimetic activity. The beta blocker atenolol should not be used because it is less effective than placebo in reducing cardiovascular events.

†If needed for BP control.

•ACE indicates angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP, blood pressure; CCB, calcium channel blocker; GDMT, guideline-directed management and therapy; and SIHD, stable ischemic heart disease.

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TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Heart Failure With Reduced Ejection Fraction

COR	LOE	Recommendations for Treatment of Hypertension in Patients With HF*r*EF
I	C-EO	Adults with HF*r*EF and hypertension should be prescribed GDMT titrated to attain a BP of less than 130/80 mm Hg.
III: No Benefit	B-R	Nondihydropyridine CCBs are not recommended in the treatment of hypertension in adults with HF*r*EF.

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TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Heart Failure With Preserved Ejection Fraction

COR	LOE	Recommendations for Treatment of Hypertension in Patients With HF*p*EF
I	C-EO	In adults with HF*p*EF who present with symptoms of volume overload, diuretics should be prescribed to control hypertension.
I	C-LD	Adults with HF*p*EF and persistent hypertension after management of volume overload should be prescribed ACE inhibitors or ARBs and beta blockers titrated to attain SBP of less than 130 mm Hg.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

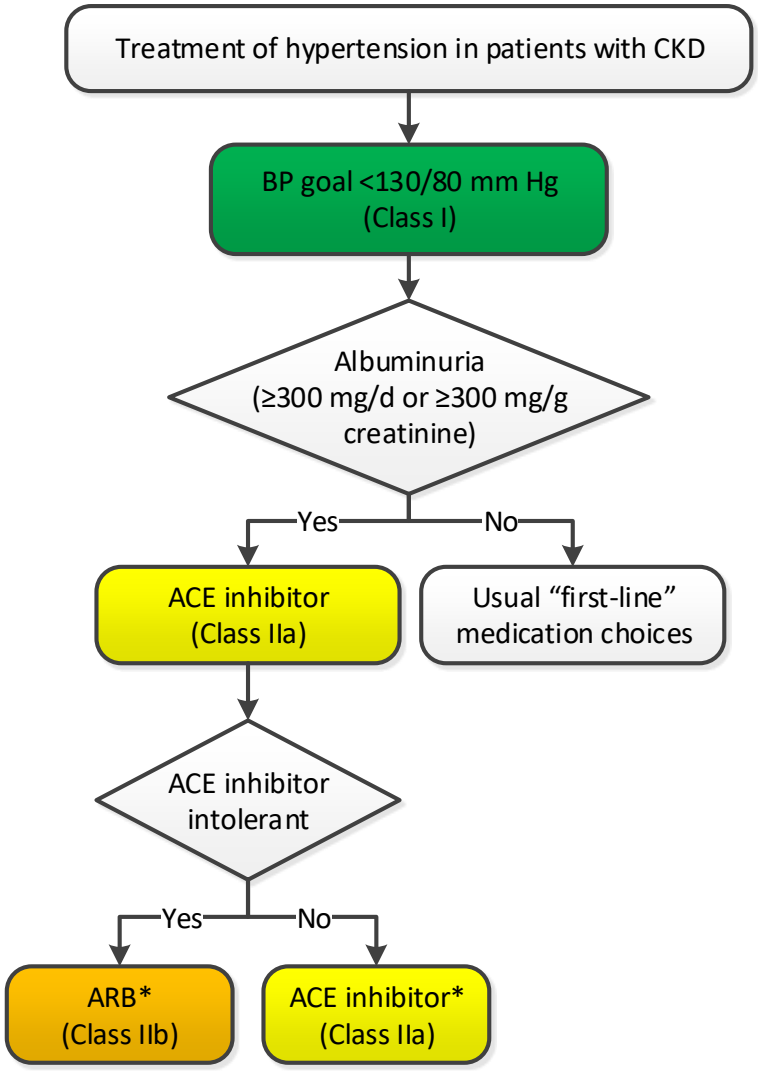
Chronic Kidney Disease

COR	LOE	Recommendations for Treatment of Hypertension in Patients With CKD
I	SBP: B-R[SR] DBP: C-EO	Adults with hypertension and CKD should be treated to a BP goal of less than 130/80 mm Hg.
IIa	B-R	In adults with hypertension and CKD (stage 3 or higher or stage 1 or 2 with albuminuria [≥300 mg/d, or ≥300 mg/g albumin-to-creatinine ratio or the equivalent in the first morning void]), treatment with an ACE inhibitor is reasonable to slow kidney disease progression.
IIb	C-EO	In adults with hypertension and CKD (stage 3 or higher or stage 1 or 2 with albuminuria [≥300 mg/d, or ≥300 mg/g albumin-to-creatinine ratio in the first morning void]), treatment with an ARB may be reasonable if an ACE inhibitor is not tolerated.

SR indicates systematic review.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Management of Hypertension in Patients With CKD



•Colors correspond to Class of Recommendation in Table 1.

•*CKD stage 3 or higher or stage 1 or 2 with albuminuria ≥300 mg/d or ≥300 mg/g creatinine.

•ACE indicates angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP blood pressure; and CKD, chronic kidney disease.

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Hypertension After Renal Transplantation

COR	LOE	Recommendations for Treatment of Hypertension After Renal Transplantation
IIa	SBP: B-NR DBP: C-EO	After kidney transplantation, it is reasonable to treat patients with hypertension to a BP goal of less than 130/80 mm Hg.
IIa	B-R	After kidney transplantation, it is reasonable to treat patients with hypertension with a calcium antagonist on the basis of improved GFR and kidney survival.

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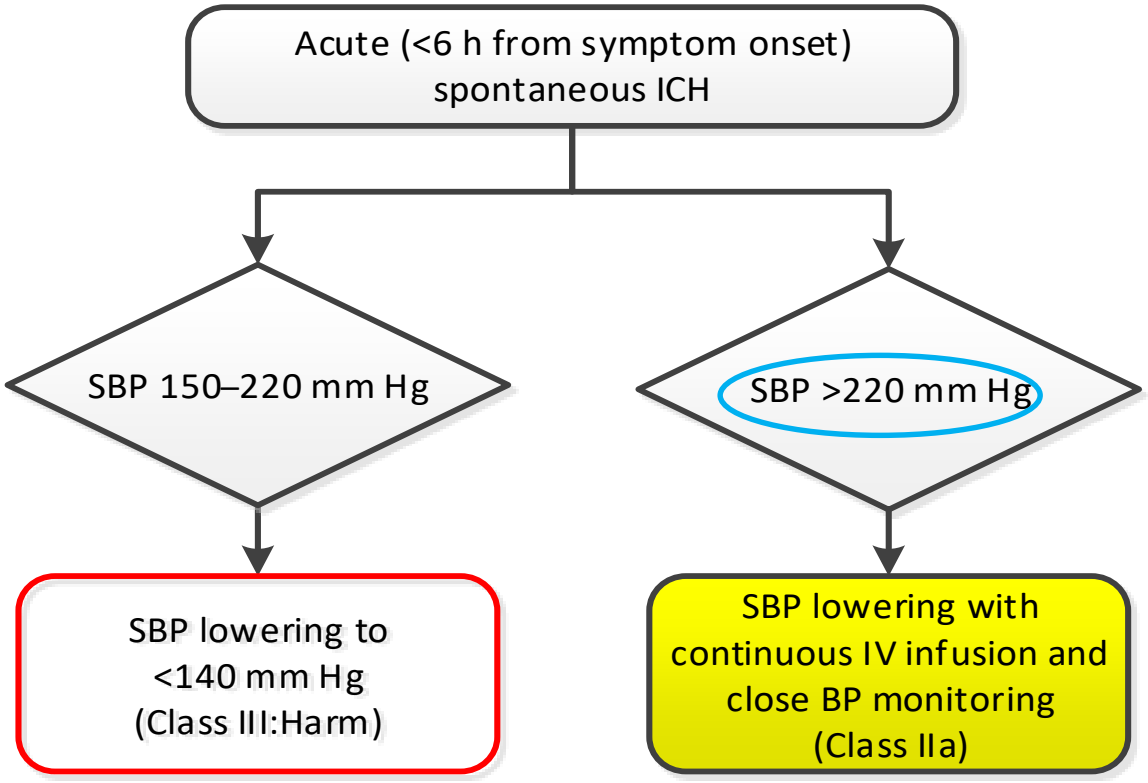
Acute Intracerebral Hemorrhage

COR	LOE	Recommendations for Management of Hypertension in Patients With Acute Intracerebral Hemorrhage (ICH)
IIa	C-EO	In adults with ICH who present with SBP greater than 220 mm Hg, it is reasonable to use continuous intravenous drug infusion and close BP monitoring to lower SBP.
III: Harm	A	Immediate lowering of SBP to less than 140 mm Hg in adults with spontaneous ICH who present within 6 hours of the acute event and have an SBP between 150 mm Hg and 220 mm Hg is not of benefit to reduce death or severe disability and can be potentially harmful.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Management of Hypertension in Patients With Acute ICH



Colors correspond to Class of Recommendation in Table 1.
BP indicates blood pressure; ICH, intracerebral hemorrhage; IV, intravenous; and SBP, systolic blood pressure.

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Acute Ischemic Stroke

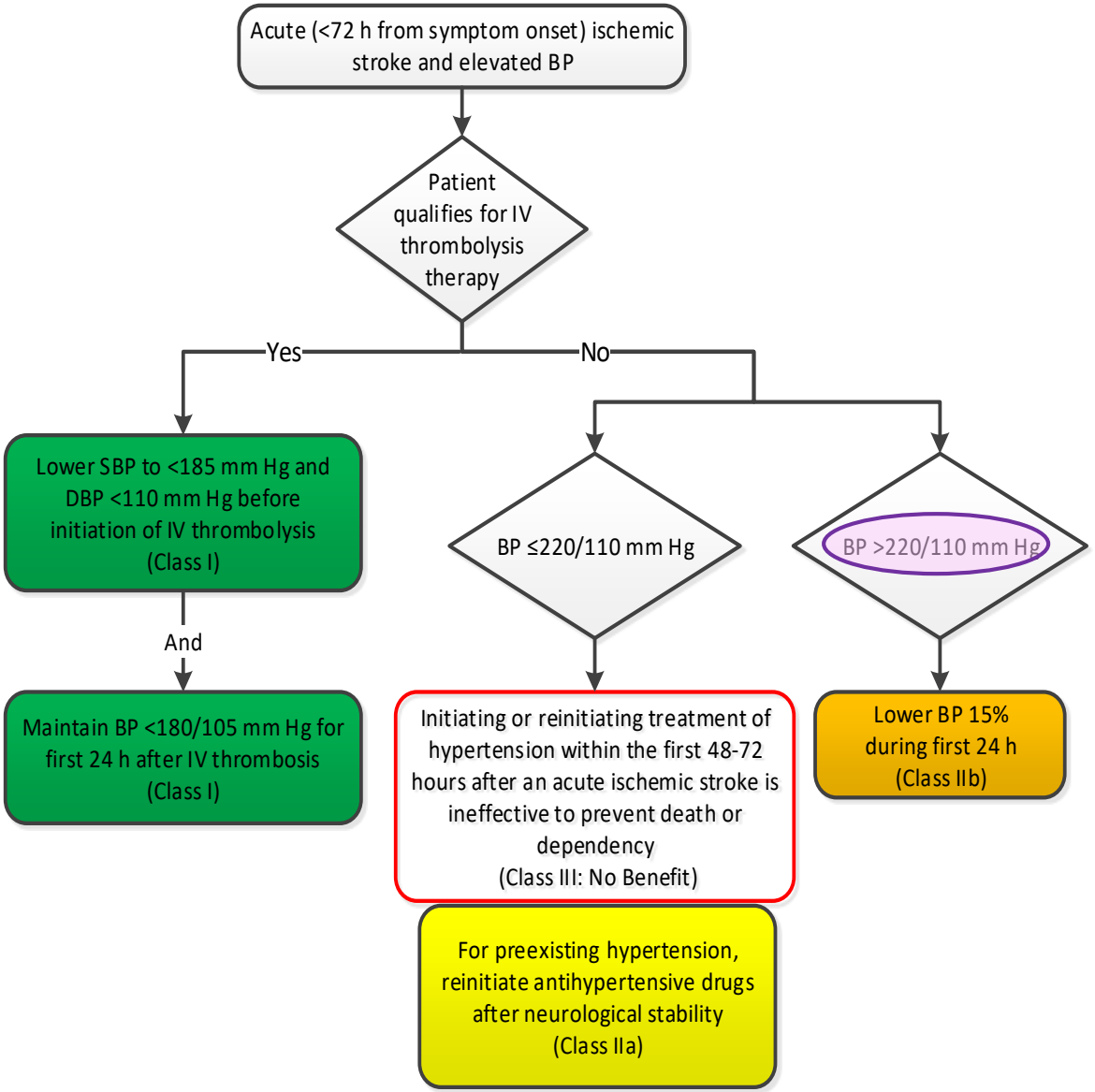
COR	LOE	Recommendations for Management of Hypertension in Patients With Acute Ischemic Stroke
I	B-NR	Adults with acute ischemic stroke and elevated BP who are eligible for treatment with intravenous tissue plasminogen activator should have their BP slowly lowered to less than 185/110 mm Hg before thrombolytic therapy is initiated.
I	B-NR	In adults with an acute ischemic stroke, BP should be less than 185/110 mm Hg before administration of intravenous tissue plasminogen activator and should be maintained below 180/105 mm Hg for at least the first 24 hours after initiating drug therapy.
IIa	B-NR	Starting or restarting antihypertensive therapy during hospitalization in patients with BP greater than 140/90 mm Hg who are neurologically stable is safe and reasonable to improve long-term BP control, unless contraindicated.

Acute Ischemic Stroke (cont.)

COR	LOE	Recommendations for Management of Hypertension in Patients With Acute Ischemic Stroke
IIb	C-EO	In patients with BP of 220/120 mm Hg or higher who did not receive intravenous alteplase or endovascular treatment and have no comorbid conditions requiring acute antihypertensive treatment, the benefit of initiating or reinitiating treatment of hypertension within the first 48 to 72 hours is uncertain. It might be reasonable to lower BP by 15% during the first 24 hours after onset of stroke.
III: No Benefit	A	In patients with BP less than 220/120 mm Hg who did not receive intravenous thrombolysis or endovascular treatment and do not have a comorbid condition requiring acute antihypertensive treatment, initiating or reinitiating treatment of hypertension within the first 48 to 72 hours after an acute ischemic stroke is not effective to prevent death or dependency.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Management of Hypertension in Patients With Acute Ischemic Stroke



Colors correspond to Class of Recommendation in Table 1.
BP indicates blood pressure; DBP, diastolic blood pressure; IV, intravenous; and SBP, systolic blood pressure.

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Secondary Stroke Prevention

COR	LOE	Recommendations for Treatment of Hypertension for Secondary Stroke Prevention
I	A	Adults with previously treated hypertension who experience a stroke or transient ischemic attack (TIA) should be restarted on antihypertensive treatment after the first few days of the index event to reduce the risk of recurrent stroke and other vascular events.
I	A	For adults who experience a stroke or TIA, treatment with a thiazide diuretic, ACE inhibitor, or ARB, or combination treatment consisting of a thiazide diuretic plus ACE inhibitor, is useful.
I	B-R	Adults not previously treated for hypertension who experience a stroke or TIA and have an established BP of 140/90 mm Hg or higher should be prescribed antihypertensive treatment a few days after the index event to reduce the risk of recurrent stroke and other vascular events.

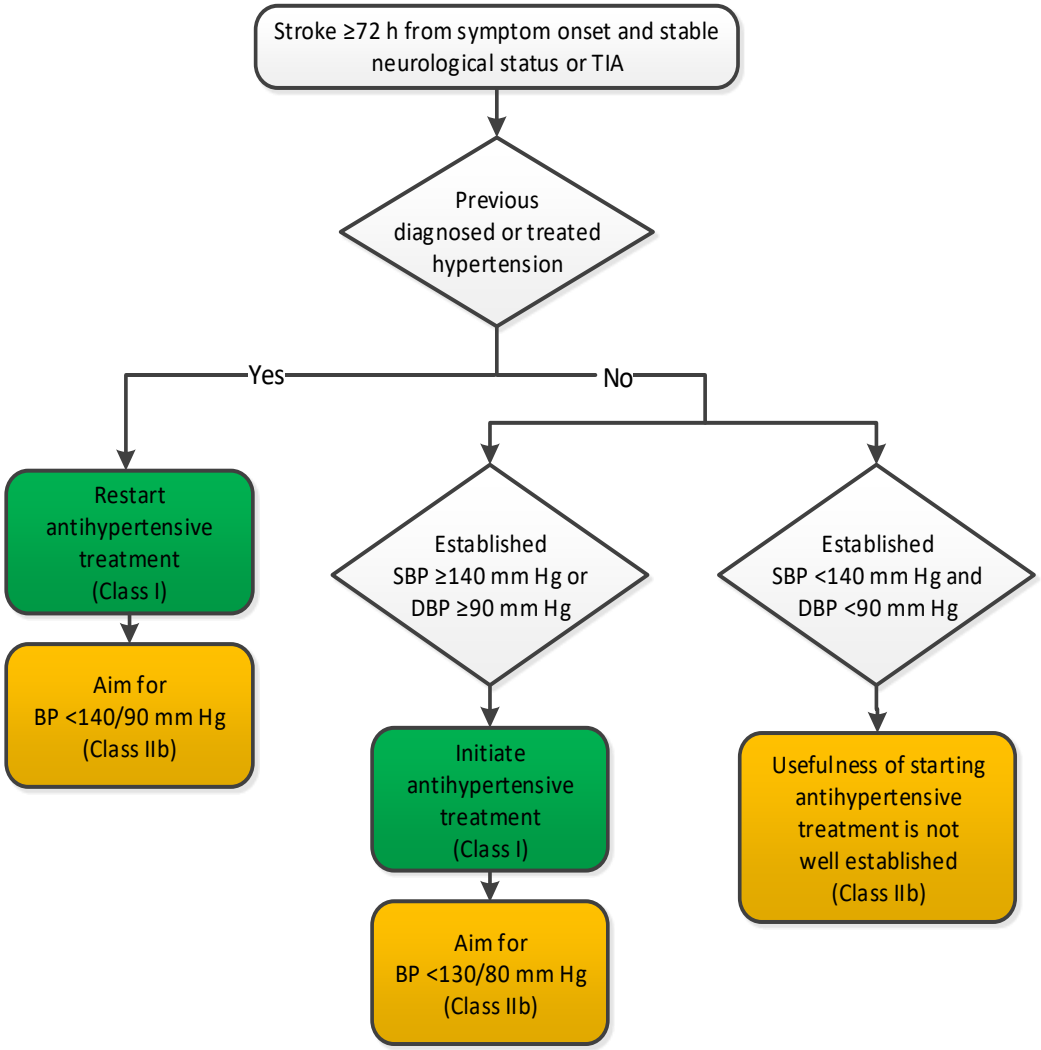
TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Secondary Stroke Prevention (cont.)

COR	LOE	Recommendations for Treatment of Hypertension for Secondary Stroke Prevention
I	B-NR	For adults who experience a stroke or TIA, selection of specific drugs should be individualized on the basis of patient comorbidities and agent pharmacological class.
IIb	B-R	For adults who experience a stroke or TIA, a BP goal of less than 130/80 mm Hg may be reasonable.
IIb	B-R	For adults with a lacunar stroke, a target SBP goal of less than 130 mm Hg may be reasonable.
IIb	C-LD	In adults previously untreated for hypertension who experience an ischemic stroke or TIA and have a SBP less than 140 mm Hg and a DBP less than 90 mm Hg, the usefulness of initiating antihypertensive treatment is not well established.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Management of Hypertension in Patients With a Previous History of Stroke (Secondary Stroke Prevention)



Colors correspond to Class of Recommendation in Table 1.
DBP indicates diastolic blood pressure; SBP, systolic blood pressure; and TIA, transient ischemic attack.

Diabetes Mellitus

COR	LOE	Recommendations for Treatment of Hypertension in Patients With DM
I	SBP: B-R[SR]	In adults with DM and hypertension, antihypertensive drug treatment should be initiated at a BP of 130/80 mm Hg or higher with a treatment goal of less than 130/80 mm Hg.
	DBP: C-EO	
I	A[SR]	In adults with DM and hypertension, all first-line classes of antihypertensive agents (i.e., diuretics, ACE inhibitors, ARBs, and CCBs) are useful and effective.
IIb	B-NR	In adults with DM and hypertension, ACE inhibitors or ARBs may be considered in the presence of albuminuria.

SR indicates systematic review.

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TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Atrial Fibrillation

COR	LOE	Recommendation for Treatment of Hypertension in Patients With AF
IIa	B-R	Treatment of hypertension with an ARB can be useful for prevention of recurrence of AF.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Valvular Heart Disease

COR	LOE	Recommendations for Treatment of Hypertension in Patients With Valvular Heart Disease
I	B-NR	In adults with asymptomatic aortic stenosis, hypertension should be treated with pharmacotherapy, starting at a low dose and gradually titrating upward as needed.
IIa	C-LD	In patients with chronic aortic insufficiency, treatment of systolic hypertension with agents that do not slow the heart rate (i.e., avoid beta blockers) is reasonable.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Aortic Disease

COR	LOE	Recommendation for Management of Hypertension in Patients With Aortic Disease
I	C-EO	Beta blockers are recommended as the preferred antihypertensive agents in patients with hypertension and thoracic aortic disease.

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TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Pregnancy

COR	LOE	Recommendations for Treatment of Hypertension in Pregnancy
I	C-LD	Women with hypertension who become pregnant, or are planning to become pregnant, should be transitioned to methyldopa, nifedipine, and/or labetalol during pregnancy.
III: Harm	C-LD	Women with hypertension who become pregnant should not be treated with ACE inhibitors, ARBs, or direct renin inhibitors.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

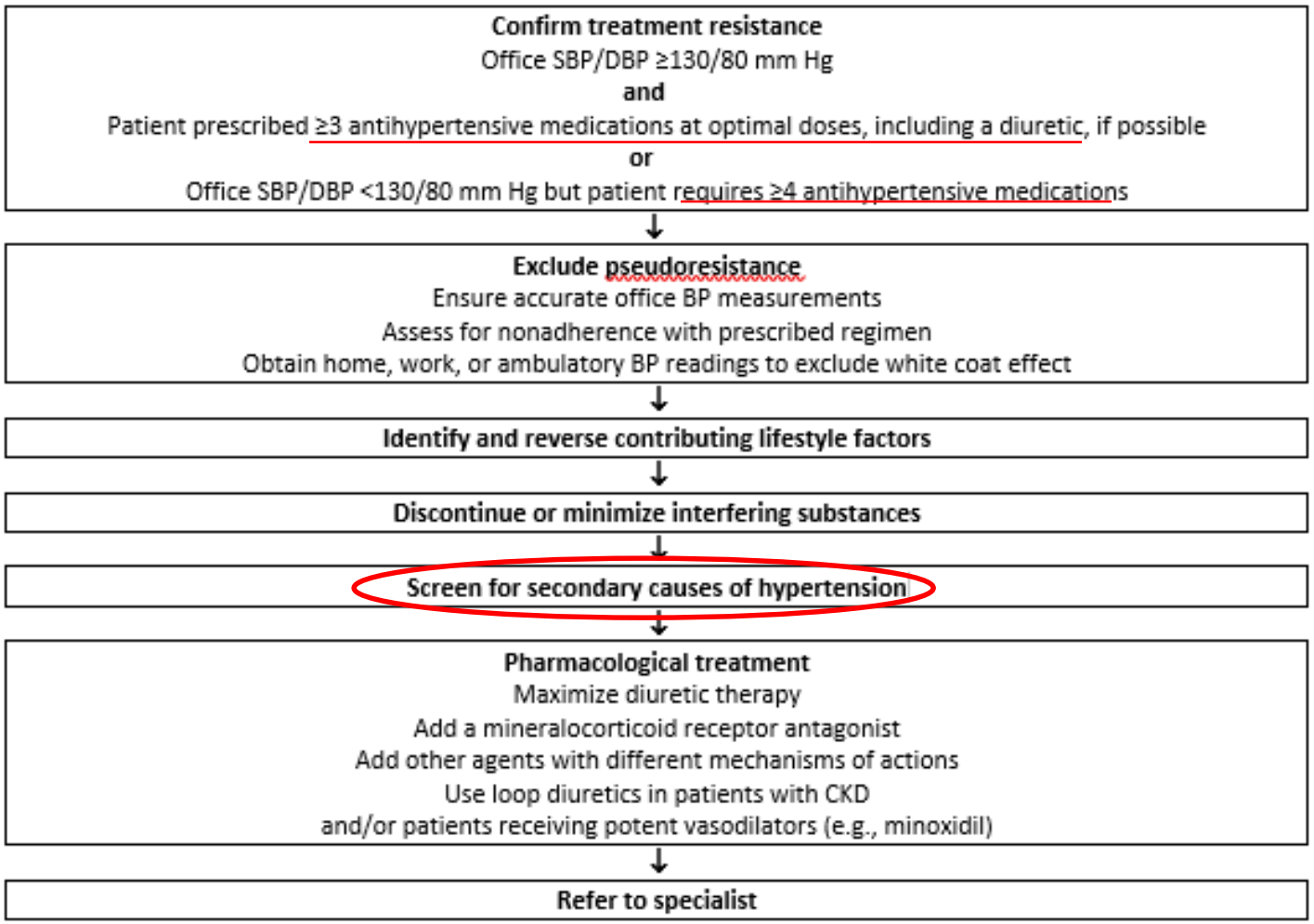
Age-Related Issues

COR	LOE	Recommendations for Treatment of Hypertension in Older Persons
I	A	Treatment of hypertension with a SBP treatment goal of less than 130 mm Hg is recommended for noninstitutionalized ambulatory community-dwelling adults (≥65 years of age) with an average SBP of 130 mm Hg or higher.
IIa	C-EO	For older adults (≥65 years of age) with hypertension and a high burden of comorbidity and limited life expectancy, clinical judgment, patient preference, and a team-based approach to assess risk/benefit is reasonable for decisions regarding intensity of BP lowering and choice of antihypertensive drugs.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Resistant Hypertension: Diagnosis, Evaluation, and Treatment

Figure 10. Resistant Hypertension: Diagnosis, Evaluation, and Treatment



BP indicates blood pressure; CKD, chronic kidney disease; DBP, diastolic blood pressure; eGFR, estimated glomerular filtration rate; NSAIDs, nonsteroidal anti-inflammatory drugs; and SBP, systolic blood pressure.

Adapted with permission from Calhoun et al.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

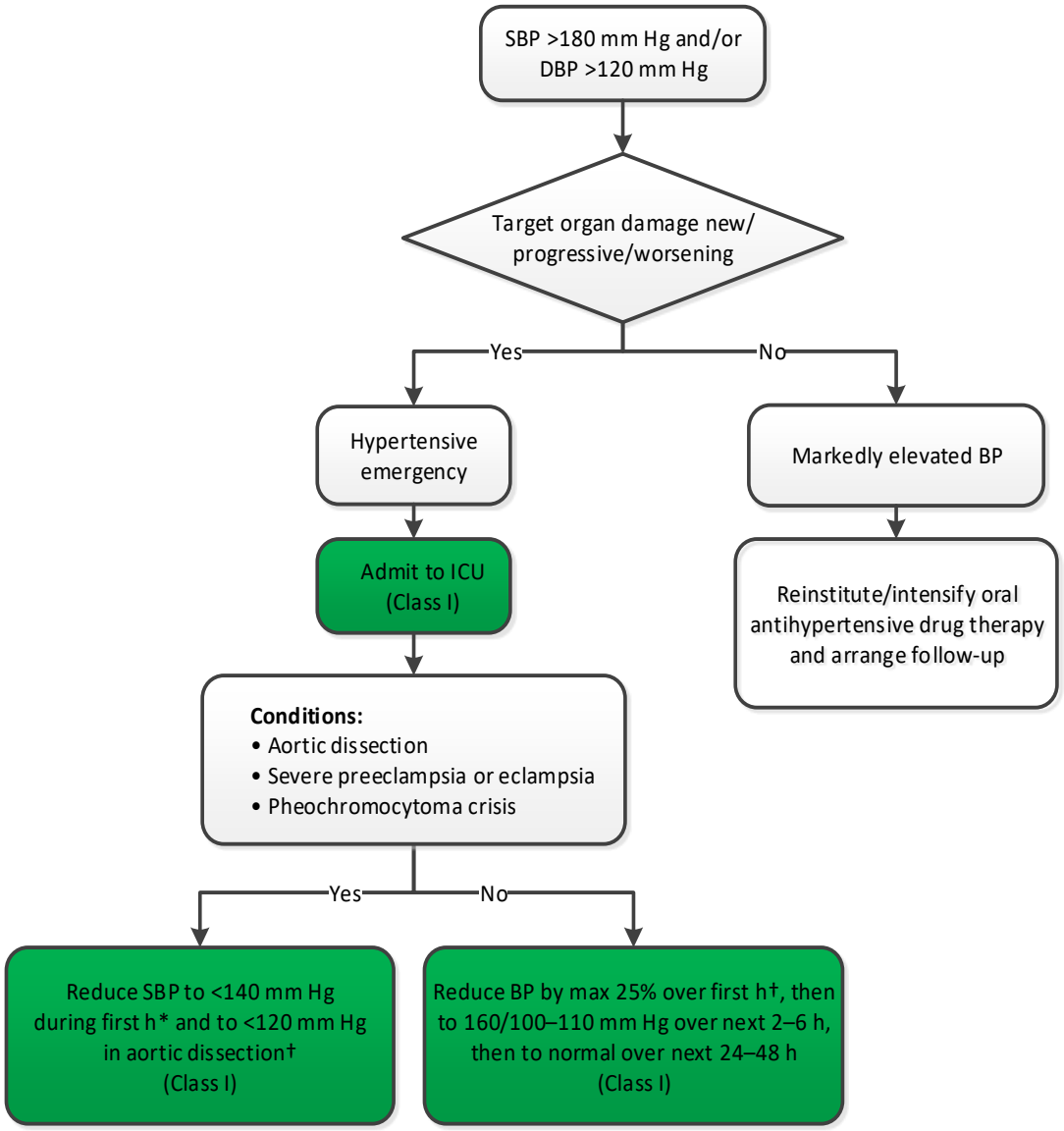
Hypertensive Crises: Emergencies and Urgencies

COR	LOE	Recommendations for Hypertensive Crises and Emergencies
I	B-NR	In adults with a hypertensive emergency, admission to an intensive care unit is recommended for continuous monitoring of BP and target organ damage and for parenteral administration of an appropriate agent.
I	C-EO	For adults with a compelling condition (i.e., aortic dissection, severe preeclampsia or eclampsia, or pheochromocytoma crisis), SBP should be reduced to less than 140 mm Hg during the first hour and to less than 120 mm Hg in aortic dissection.
I	C-EO	For adults without a compelling condition, SBP should be reduced by no more than 25% within the first hour; then, if stable, to 160/100 mm Hg within the next 2 to 6 hours; and then cautiously to normal during the following 24 to 48 hours.

Pham Nguyen Vinh

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Diagnosis and Management of a Hypertensive Crisis



Colors correspond to Class of Recommendation in Table 1.
*Use drug(s) specified in Table 19.
†If other comorbidities are present, select a drug specified in Table 20.
BP indicates blood pressure; DBP, diastolic blood pressure; ICU, intensive care unit; and SBP, systolic blood pressure.

Cognitive Decline and Dementia

COR	LOE	Recommendation for Prevention of Cognitive Decline and Dementia
IIa	B-R	In adults with hypertension, BP lowering is reasonable to prevent cognitive decline and dementia.

Pham Nguyen Vinh

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Patients Undergoing Surgical Procedures

COR	LOE	Recommendations for Treatment of Hypertension in Patients Undergoing Surgical Procedures
		Preoperative
I	B-NR	In patients with hypertension undergoing major surgery who have been on beta blockers chronically, beta blockers should be continued.
IIa	C-EO	In patients with hypertension undergoing planned elective major surgery, it is reasonable to continue medical therapy for hypertension until surgery.
IIb	B-NR	In patients with hypertension undergoing major surgery, discontinuation of ACE inhibitors or ARBs perioperatively may be considered.

Patients Undergoing Surgical Procedures (cont.)

COR	LOE	Recommendations for Treatment of Hypertension in Patients Undergoing Surgical Procedures
Preoperative		
IIb	C-LD	In patients with planned elective major surgery and SBP of 180 mm Hg or higher or DBP of 110 mm Hg or higher, deferring surgery may be considered.
III: Harm	B-NR	For patients undergoing surgery, abrupt preoperative discontinuation of beta blockers or clonidine is potentially harmful.
III: Harm	B-NR	Beta blockers should not be started on the day of surgery in beta blocker–naïve patients.
Intraoperative		
I	C-EO	Patients with intraoperative hypertension should be managed with intravenous medications until such time as oral medications can be resumed.

Pham Nguyen Vinh

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

BP Thresholds for and Goals of Pharmacological Therapy in Patients With Hypertension According to Clinical Conditions

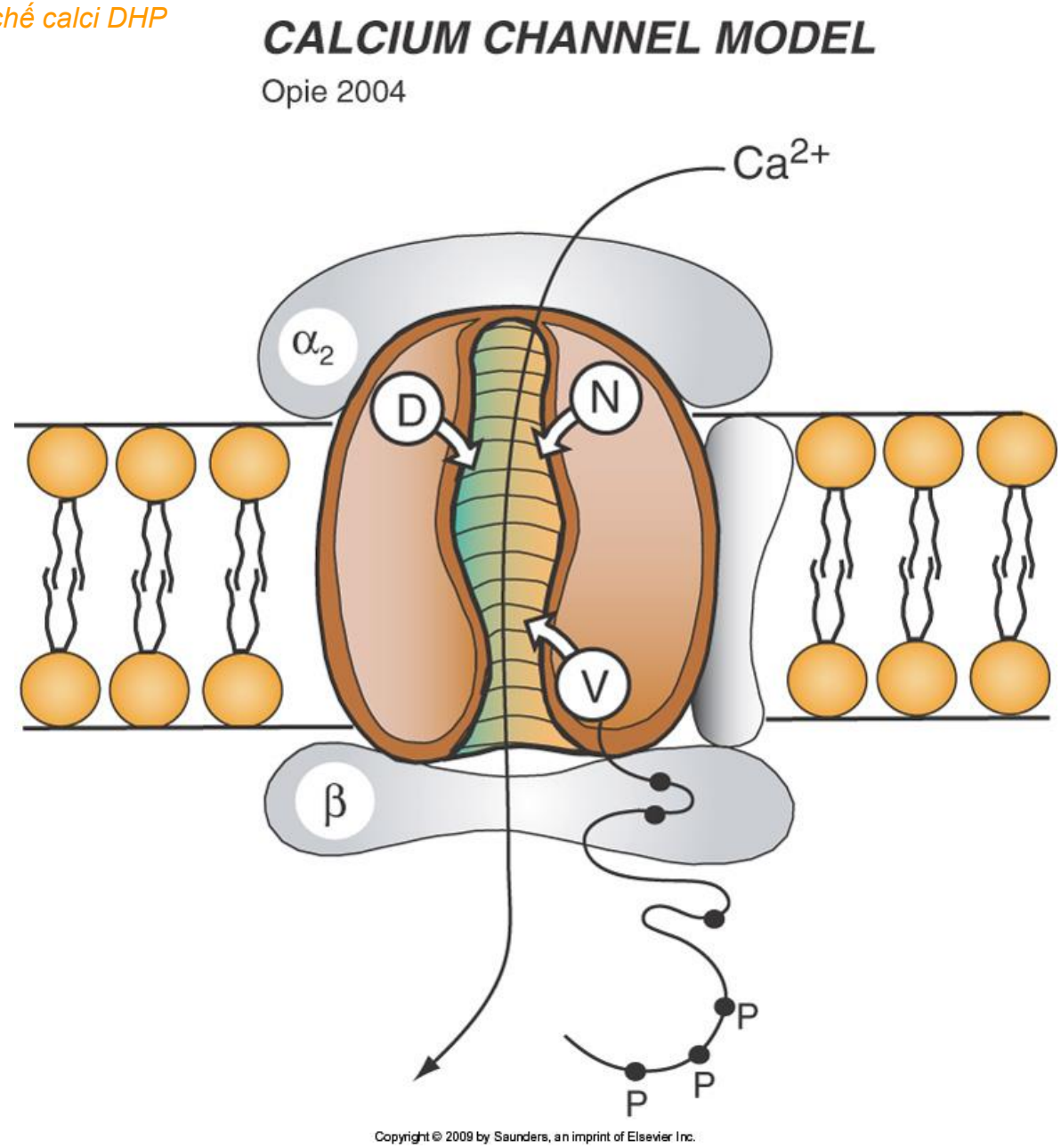
Clinical Condition(s)	BP Threshold, mm Hg	BP Goal, mm Hg
General		
Clinical CVD or 10-year ASCVD risk ≥10%	≥130/80	<130/80
No clinical CVD and 10-year ASCVD risk <10%	≥140/90	<130/80
Older persons (≥65 years of age; noninstitutionalized, ambulatory, community-living adults)	≥130 (SBP)	<130 (SBP)
Specific comorbidities		
Diabetes mellitus	≥130/80	<130/80
Chronic kidney disease	≥130/80	<130/80
Chronic kidney disease after renal transplantation	≥130/80	<130/80
Heart failure	≥130/80	<130/80
Stable ischemic heart disease	≥130/80	<130/80
Secondary stroke prevention	≥140/90	<130/80
Secondary stroke prevention (lacunar)	≥130/80	<130/80
Peripheral arterial disease	≥130/80	<130/80

ASCVD indicates atherosclerotic cardiovascular disease; BP, blood pressure; CVD, cardiovascular disease; and SBP, systolic blood pressure.

TL: Whelton PK et al. JACC 13 Nov 2017. www.acc.org

Ức chế calci: vai trò quan trọng trong THA người cao tuổi, THA có bệnh nội khoa kèm theo

Mô hình kênh Calci

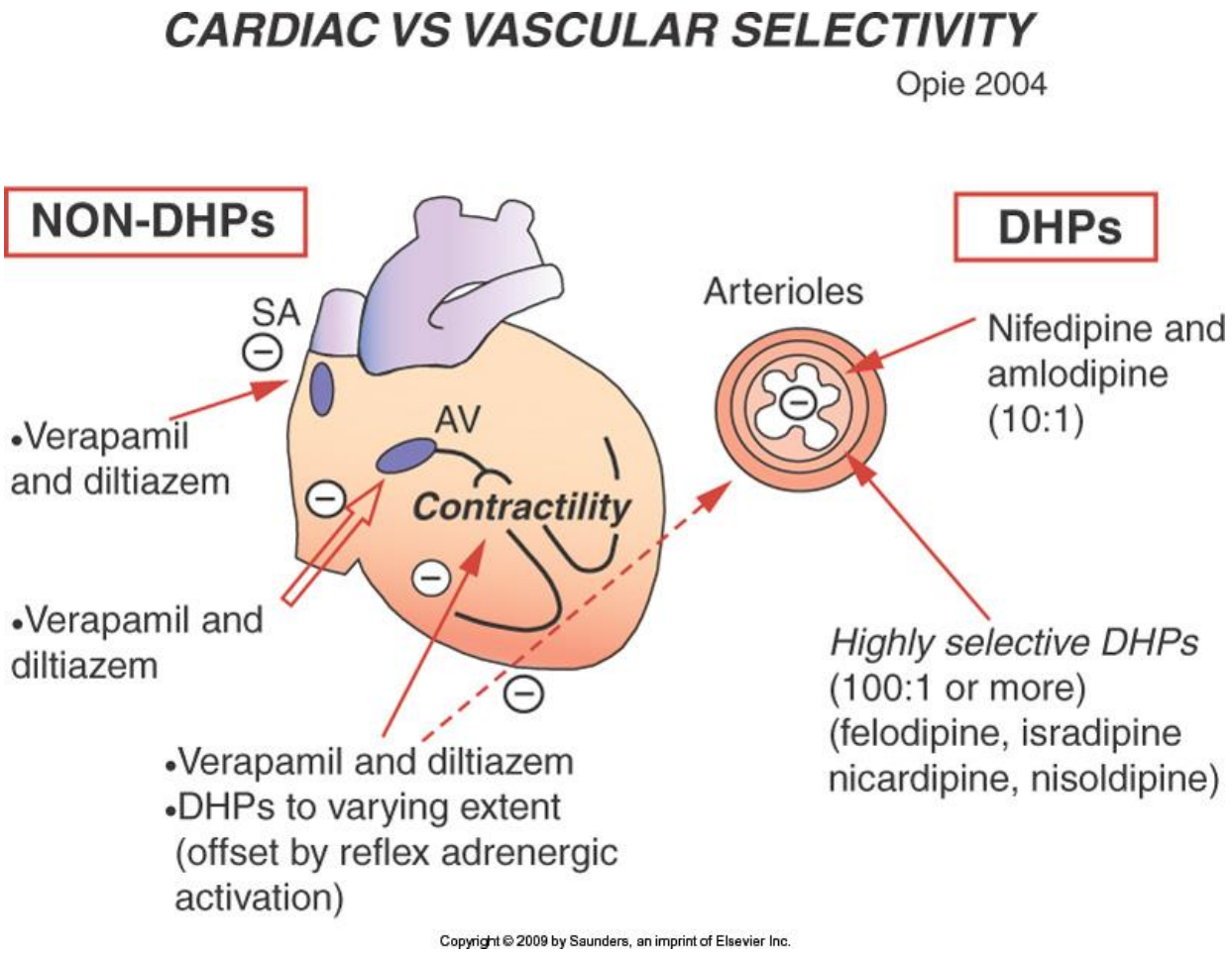


- N: Nifedipine
- D: Diltiazem
- V: Verapamil
- P: Phosphorylation
- Tất cả các DHPs gắn kết cùng vị trí Nifedipime

Pham Nguyen Vinh

TL: Opie HL. Durgs for the Heart, 7th ed, 2009, p. 59-82

Hiệu quả tim mạch của các ức chế calci nhóm dihydropyridine (DHP) và nhóm không dihydropyridine (non-DHP)



TL: Opie HL. Durgs for the Heart, 7th ed, 2009, p. 59-82

Hiệu quả của thuốc ức chế calci đối với chức năng thất trái, tần số xoang, điện tâm đồ bề mặt và điện tâm đồ trong tim

	Hiệu quả lâm sàng			ECG			ECG trong tim	
Ức chế calci	Co tâm thất	Dãn mạch	Tần số xoang	PR	QRS	QT	AH	HV
Verapamil	↓↓↓	↑	↓↓	↑↑	<->	<->	↑↑	<->
Diltiazem	↓↓	↑	↓	↑	<->	<->	↑	<->
Dihydropyridine	<->↓	↑↑	↑↑	<->	<->	<->	<->	<->
Bepridil	<->↓	↑	↓↑	↑		↑		

TL : Murphy JG. Mayo Clinic Cardiology Review. Lippincott Williams & Wilkins 2nd ed 2000, p. 2000

Các thuốc ức chế Calci sử dụng ở Việt Nam

- Diltiazem
- Verapamil
- Dihydropyridines :
  - * Nifedipine (Adalat ®)
  - * Nicardipine (Loxen ®)
  - * Amlodipine (Amlor ®)
  - * Felodipine (Plendil ®)
  - * Nimodipine
  - * Lacidipine (Lacipil ®)
  - * Lercanidipine (Zanedip ®)

Hiệu quả của ức chế calci trong điều trị bệnh THA

- Hữu hiệu trong điều trị bệnh THA và cơn cao HA
- Giảm áp lực tâm thu và tâm trương
- Rất ít tác dụng phụ ; không tác động lên biến dưỡng
- Hiệu quả kháng giao cảm và lợi niệu
- Hữu hiệu cả người già và người trẻ
- Không làm giảm áp lực ở người có HA bình thường
- Giảm xơ vữa động mạch (lacidipine…)

TL : Frishman WH, Sonnenblick EH : The Heart 8th ed. 1994, p. 1291-1304

Kết luận

- Chẩn đoán THA: nên dựa vào huyết áp đo tại nhà và ABPM
- Huyết áp kế điện tử; băng quấn cánh tay
- Nên ngưng thuốc lá
- THA do hẹp ĐM thận: điều trị nội là chính
- Thuốc đầu tiên không chỉ định bắt buộc: UCMC, chẹn thụ thể AG II, ức chế calci, lợi tiểu, chẹn beta
- Phối hợp thuốc là cần thiết
- Ức chế calci DHP: vai trò quan trọng trong điều trị THA