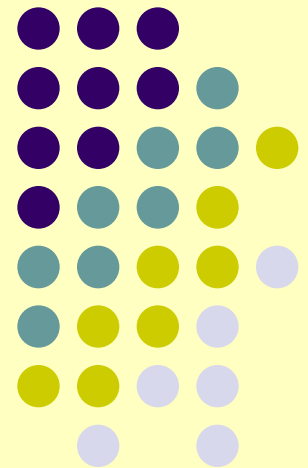
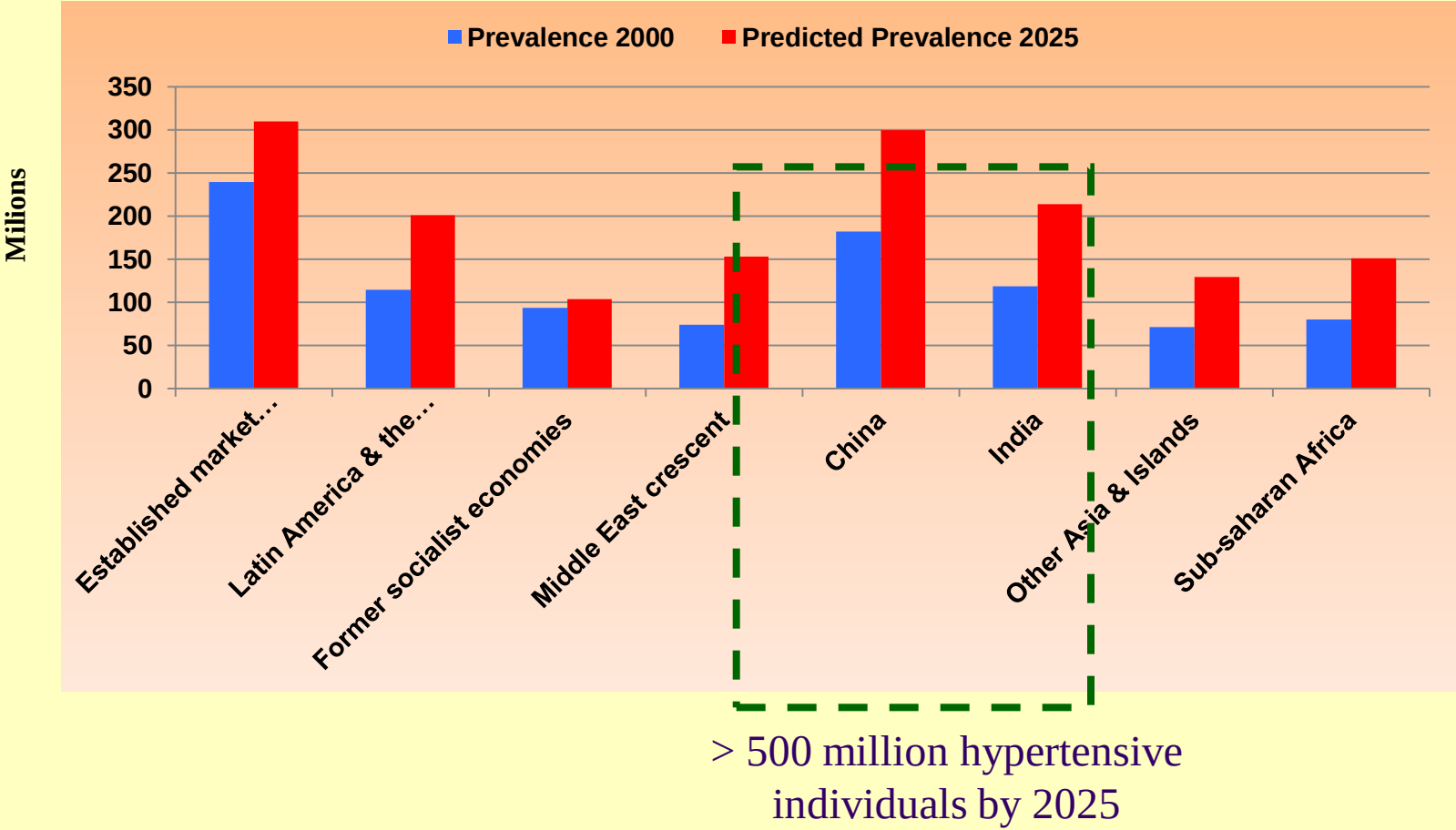


CHẨN ĐOÁN VÀ ĐIỀU TRỊ BỆNH TĂNG HUYẾT ÁP 2014

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

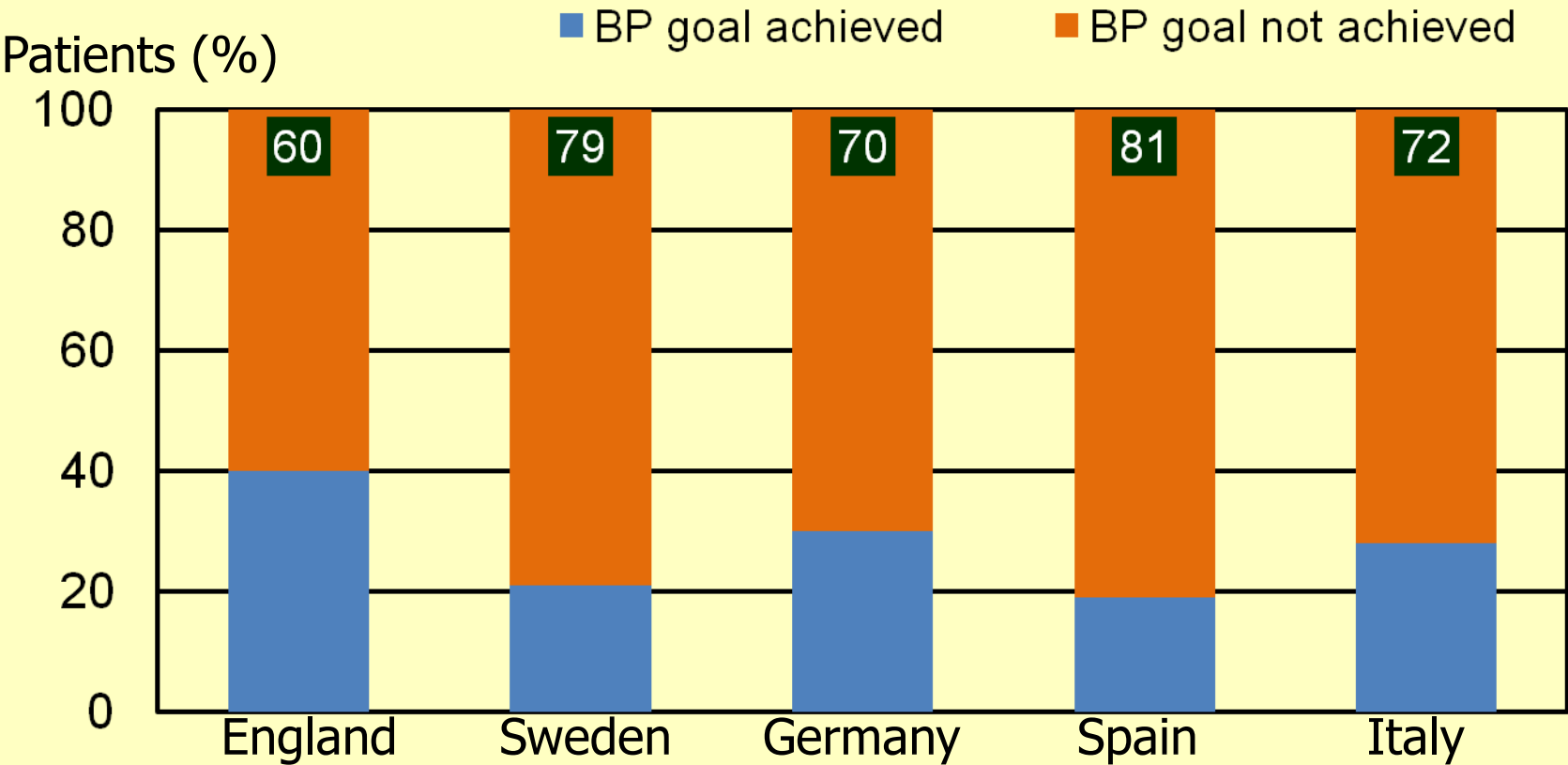


Dự đoán tần suất bệnh nhân THA vào năm 2025*



* Estimated Number of Individuals Aged 20 Years With Blood Pressure >140/90 mm Hg in 2000 and Predicted Number of Affected Individuals in 2025
Perkovic V, et al. Hypertension 2007;50:991-7.

Khoảng 70% bệnh nhân THA/ Châu Âu không đạt mục tiêu điều trị



*Treated for hypertension
BP goal is <140/90 mmHg

Wolf-Maier et al. Hypertension 2004;43:10–17

TL : Wolf-Maier K et al. Hypertension 2004 ; 43 : 10-17

Các khuyến cáo mới về THA

- ❑ CHEP 2013
- ❑ Khuyến cáo Hội Tim Châu Âu/ THA Châu Âu 2013
- ❑ JNC 8 -2014
- ❑ Khuyến cáo Hội THA Mỹ/ Hội THA quốc tế 2014

Tương quan giữa huyết áp và tổn thương tim mạch, thận

- ❑ Mức huyết áp đo tại phòng khám có tương quan với tần suất mắc phải bệnh tim mạch (đột quỵ, NMCT, đột tử, suy tim, bệnh ĐMV, bệnh thận giai đoạn cuối) mọi lứa tuổi, mọi chủng tộc.
- ❑ HA tâm thu tiên đoán biến cố cao hơn Hattr ở tuổi > 50
- ❑ Người cao tuổi: áp lực mạch có thể có vai trò tiên lượng
- ❑ HA di động 24 giờ, huyết áp đo tại nhà: có tương quan với biến cố nêu trên.

Định nghĩa và phân độ THA (mmHg)

Category	Systolic		Diastolic
Optimal	<120	and	<80
Normal	120–129	and/or	80–84
High normal	130–139	and/or	85–89
Grade 1 hypertension	140–159	and/or	90–99
Grade 2 hypertension	160–179	and/or	100–109
Grade 3 hypertension	≥180	and/or	≥110
Isolated systolic hypertension	≥140	and	<90

^aThe blood pressure (BP) category is defined by the highest level of BP, whether systolic or diastolic. Isolated systolic hypertension should be graded 1, 2, or 3 according to systolic BP values in the ranges indicated.

Xếp loại nguy cơ tim mạch chung: thấp, vừa, cao và rất cao

Other risk factors, asymptomatic organ damage or disease	Blood Pressure (mmHg)			
	High normal SBP 130–139 or DBP 85–89	Grade 1 HT SBP 140–159 or DBP 90–99	Grade 2 HT SBP 160–179 or DBP 100–109	Grade 3 HT SBP ≥180 or DBP ≥110
No other RF		Low risk	Moderate risk	High risk
1–2 RF	Low risk	Moderate risk	Moderate to high risk	High risk
≥3 RF	Low to Moderate risk	Moderate to high risk	High Risk	High risk
OD, CKD stage 3 or diabetes	Moderate to high risk	High risk	High risk	High to very high risk
Symptomatic CVD, CKD stage ≥4 or diabetes with OD/RFs	Very high risk	Very high risk	Very high risk	Very high risk

BP = blood pressure; CKD = chronic kidney disease; CV = cardiovascular; CVD = cardiovascular disease; DBP = diastolic blood pressure; HT = hypertension; OD = organ damage; RF = risk factor; SBP = systolic blood pressure.

Các yếu tố, ngoài huyết áp, ảnh hưởng đến tiên lượng giúp xếp loại nguy cơ tim mạch chung (1)

- ❑ Yếu tố nguy cơ
- ❑ Nam giới
- ❑ Tuổi (>55/nam; > 65/nữ)
- ❑ Thuốc lá
- ❑ Rối loạn lipid máu
 - Cholesterol > 4,9 mmol/L (190 mg/dL) và/hoặc
 - LDL-C > 3 mmol/L (115mg/dL) và/hoặc
 - HDL-C < 1 mmol/L (40 mg/dL/nam, < 1,2 mmol/L (46 mg/dL)/nữ
 - TG > 1.7 mmol/L (150 mg/dL)
- ❑ Đường máu (đói): 5.6-6.9 mmol/L (102-125 mg/dL)
- ❑ Trắc nghiệm dung nạp đường bất thường
- ❑ Béo phì (BMI ≥ 30 kg/m²)
- ❑ Béo bụng (vòng bụng > 90/nam, > 80/nữ- Á Châu)
- ❑ Tiền sử gia đình có bệnh tim sớm (< 55t/nam; 65t/nữ)

BMI = body mass index; BP = blood pressure; BSA = body surface area; CABG = coronary artery bypass graft; CHD = coronary heart disease; CKD = chronic kidney disease; CV = cardiovascular; CVD = cardiovascular disease; EF = ejection fraction; eGFR = estimated glomerular filtration rate; HbA_{1c} = glycated haemoglobin; IMT = intima-media thickness; LVH = left ventricular hypertrophy; LVM = left ventricular mass; PCI = percutaneous coronary intervention; PWV = pulse wave velocity.

^aRisk maximal for concentric LVH: increased LVM index with a wall thickness/radius ratio of >0.42.

Các yếu tố,
ngoài huyết áp,
ảnh hưởng đến
tiên lượng giúp
xếp loại nguy cơ
tim mạch chung
(2)

Tổn thương cơ quan không triệu chứng cơ năng
Pulse pressure (in the elderly) ≥ 60 mmHg
Electrocardiographic LVH (Sokolow–Lyon index >3.5 mV; RaVL >1.1 mV; Cornell voltage duration product >244 mV*ms), or
Echocardiographic LVH [LVM index: men >115 g/m ² ; women >95 g/m ² (BSA)] ^a
Carotid wall thickening (IMT >0.9 mm) or plaque
Carotid–femoral PWV >10 m/s
Ankle-brachial index <0.9
CKD with eGFR 30–60 ml/min/1.73 m ² (BSA)
Microalbuminuria (30–300 mg/24 h), or albumin–creatinine ratio (30–300 mg/g; 3.4–34 mg/mmol) (preferentially on morning spot urine)
BMI = body mass index; BP = blood pressure; BSA = body surface area; CABG = coronary artery bypass graft; CHD = coronary heart disease; CKD = chronic kidney disease; CV = cardiovascular; CVD = cardiovascular disease; EF = ejection fraction; eGFR = estimated glomerular filtration rate; HbA _{1c} = glycated haemoglobin; IMT = intima-media thickness; LVH = left ventricular hypertrophy; LVM = left ventricular mass; PCI = percutaneous coronary intervention; PWV = pulse wave velocity. ^a Risk maximal for concentric LVH: increased LVM index with a wall thickness/radius ratio of >0.42 .

Các yếu tố,
ngoài huyết áp,
ảnh hưởng đến
tiên lượng giúp
xếp loại nguy
cơ tim mạch
chung (3)

Đái tháo đường
Fasting plasma glucose ≥ 7.0 mmol/L (126 mg/dL) on two repeated measurements, and/or
HbA _{1c} $> 7\%$ (53 mmol/mol), and/or
Post-load plasma glucose > 11.0 mmol/L (198 mg/dL)
Bệnh thận hay bệnh tim mạch đã có:
Cerebrovascular disease: ischaemic stroke; cerebral haemorrhage; transient ischaemic attack
CHD: myocardial infarction; angina; myocardial revascularization with PCI or CABG
Heart failure, including heart failure with preserved EF
Symptomatic lower extremities peripheral artery disease
CKD with eGFR < 30 mL/min/1.73m ² (BSA); proteinuria (> 300 mg/24 h).
Advanced retinopathy: haemorrhages or exudates, papilloedema

BMI = body mass index; BP = blood pressure; BSA = body surface area; CABG = coronary artery bypass graft; CHD = coronary heart disease; CKD = chronic kidney disease; CV = cardiovascular; CVD = cardiovascular disease; EF = ejection fraction; eGFR = estimated glomerular filtration rate; HbA_{1c} = glycated haemoglobin; IMT = intima-media thickness; LVH = left ventricular hypertrophy; LVM = left ventricular mass; PCI = percutaneous coronary intervention; PWV = pulse wave velocity.

^aRisk maximal for concentric LVH: increased LVM index with a wall thickness/radius ratio of > 0.42 .

Chẩn đoán bệnh THA

Cách đo huyết áp tại phòng khám (1)

When measuring BP in the office, care should be taken:

- To allow the patients to sit for 3–5 minutes before beginning BP measurements.
- To take at least two BP measurements, in the sitting position, spaced 1–2 min apart, and additional measurements if the first two are quite different. Consider the average BP if deemed appropriate.
- To take repeated measurements of BP to improve accuracy in patients with arrhythmias, such as atrial fibrillation.
- To use a standard bladder (12–13 cm wide and 35 cm long), but have a larger and a smaller bladder available for large (arm circumference >32 cm) and thin arms, respectively.
- To have the cuff at the heart level, whatever the position of the patient.

Cách đo huyết áp tại phòng khám (2)

- When adopting the auscultatory method, use phase I and V (disappearance) Korotkoff sounds to identify systolic and diastolic BP, respectively.
- To measure BP in both arms at first visit to detect possible differences. In this instance, take the arm with the higher value as the reference.
- To measure at the first visit, BP 1 and 3 min after assumption of the standing position in elderly subjects, diabetic patients, and in other conditions in which orthostatic hypotension may be frequent or suspected.
- To measure, in case of conventional BP measurement, heart rate by pulse palpation (at least 30 s) after the second measurement in the sitting position.

BP = blood pressure.

Định nghĩa tăng huyết áp đo tại PK và ngoài PK

Category	Systolic BP (mmHg)		Diastolic BP (mmHg)
Office BP	≥140	and/or	≥90
Ambulatory BP			
Daytime (or awake)	≥135	and/or	≥85
Nighttime (or asleep)	≥120	and/or	≥70
24-h	≥130	and/or	≥80
Home BP	≥135	and/or	≥85

BP = blood pressure.

Chỉ định lâm sàng đo huyết áp ngoài phòng khám (1)

Clinical indications for HBPM or ABPM
• Suspicion of white-coat hypertension
- Grade I hypertension in the office
- High office BP in individuals without asymptomatic organ damage and at low total CV risk
• Suspicion of masked hypertension
- High normal BP in the office
- Normal office BP in individuals with asymptomatic organ damage or at high total CV risk
• Identification of white-coat effect in hypertensive patients
• Considerable variability of office BP over the same or different visits
• Autonomic, postural, post-prandial, siesta- and drug-induced hypotension
• Elevated office BP or suspected pre-eclampsia in pregnant women
• Identification of true and false resistant hypertension

Chỉ định lâm sàng đo huyết áp ngoài phòng khám (2)

Specific indications for ABPM

- Marked discordance between office BP and home BP
- Assessment of dipping status
- Suspicion of nocturnal hypertension or absence of dipping, such as in patients with sleep apnoea, CKD, or diabetes
- Assessment of BP variability

ABPM = ambulatory blood pressure monitoring; BP = blood pressure; CKD = chronic kidney disease; CV = cardiovascular; HBPM = home blood pressure monitoring.

Bệnh sử cá nhân và gia đình (1)

1. Duration and previous level of high BP, including measurements at home.
2. Secondary hypertension
a) Family history of CKD (polycystic kidney).
b) History of renal disease, urinary tract infection, haematuria, analgesic abuse (parenchymal renal disease).
c) Drug/substance intake, e.g. oral contraceptives, liquorice, carbenoxolone, vasoconstrictive nasal drops, cocaine, amphetamines, gluco- and mineralocorticosteroids, non-steroidal anti-inflammatory drugs, erythropoietin, cyclosporine.
d) Repetitive episodes of sweating, headache, anxiety, palpitations (pheochromocytoma).
e) Episodes of <u>muscle weakness and tetany</u> (hyperaldosteronism).
f) Symptoms suggestive of thyroid disease.

Bệnh sử cá nhân và gia đình (2)

3. Risk factors
a) Family and personal history of hypertension and CVD
b) Family and personal history of dyslipidaemia.
c) Family and personal history of diabetes mellitus (medications, blood-glucose levels, polyuria).
d) Smoking habits.
e) Dietary habits.
f) Recent weight changes; obesity.
g) Amount of physical exercise.
h) Snoring; sleep apnoea (information also from partner).
i) Low birth-weight.

Bệnh sử cá nhân và gia đình (3)

4. History and symptoms of organ damage and cardiovascular disease.

- a) Brain and eyes: headache, vertigo, impaired vision, TIA, sensory or motor deficit, stroke, carotid revascularization.
- b) Heart: chest pain, shortness of breath, swollen ankles, myocardial infarction, revascularization, syncope, history of palpitations, arrhythmias, especially atrial fibrillation.
- c) Kidney: thirst, polyuria, nocturia, haematuria.
- d) Peripheral arteries: cold extremities, intermittent claudication, pain-free walking distance, peripheral revascularization.
- e) History of snoring/chronic lung disease/sleep apnoea.
- f) Cognitive dysfunction.

Bệnh sử cá nhân và gia đình (4)

5. Hypertension management

- a) **Current** antihypertensive medication.
- b) **Past** antihypertensive medication.
- c) Evidence of adherence or **lack of adherence** to therapy.
- d) Efficacy and **adverse effects** of drugs.

BP = blood pressure; CKD = chronic kidney disease; CVD = cardiovascular disease; TIA = transient ischaemic attack.

Khám thực thể tìm nguyên nhân THA, béo phì và tổn thương cơ quan bia (1)

Signs suggesting secondary hypertension
• Features of Cushing syndrome.
• Skin stigmata of neurofibromatosis (pheochromocytoma).
• Palpation of enlarged kidneys (polycystic kidney).
• Auscultation of abdominal murmurs (renovascular hypertension).
• Auscultation of precordial or chest murmurs (aortic coarctation; aortic disease; upper extremity artery disease).
• Diminished and delayed femoral pulses and reduced femoral blood pressure compared to simultaneous arm BP (aortic coarctation; aortic disease; lower extremity artery disease).
• Left–right arm BP difference (aortic coarctation; subclavian artery stenosis).

Khám thực thể tìm nguyên nhân THA, béo phì và tổn thương cơ quan bia (2)

Signs of organ damage

- Brain: motor or sensory defects.
- Retina: fundoscopic abnormalities.
- Heart: heart rate, 3rd or 4th heart sound, heart murmurs, arrhythmias, location of apical impulse, pulmonary rales, peripheral oedema.
- Peripheral arteries: absence, reduction, or asymmetry of pulses, cold extremities, ischaemic skin lesions.
- Carotid arteries: systolic murmurs.

Khám thực thể tìm nguyên nhân THA, béo phì và tổn thương cơ quan bia (3)

Evidence of obesity

- Weight and height.
- Calculate BMI: body weight/height² (kg/m²).
- Waist circumference measured in the standing position, at a level midway between the lower border of the costal margin (the lowest rib) and uppermost border of the iliac crest.

BP = blood pressure; BMI = body mass index.

Trắc nghiệm cận lâm sàng (1)

Trắc nghiệm thường quy

- Haemoglobin and/or haematocrit.
- Fasting plasma glucose.
- Serum total cholesterol, low-density lipoprotein cholesterol, high-density lipoprotein cholesterol.
- Fasting serum triglycerides.
- Serum potassium and sodium.
- Serum uric acid.
- Serum creatinine (with estimation of GFR).
- Urine analysis: microscopic examination; urinary protein by dipstick test; test for microalbuminuria.
- 12-lead ECG.

Trắc nghiệm cận lâm sàng (2)

Trắc nghiệm phụ thêm dựa vào bệnh sử, khám thực thể và bất thường ở xn thường quy

- Haemoglobin A_{1c} (if fasting plasma glucose is >5.6 mmol/L (102 mg/dL) or previous diagnosis of diabetes).
- Quantitative proteinuria (if dipstick test is positive); urinary potassium and sodium concentration and their ratio.
- Home and 24-h ambulatory BP monitoring.
- Echocardiogram.
- Holter monitoring in case of arrhythmias.
- Carotid ultrasound.
- Peripheral artery/abdominal ultrasound.
- Pulse wave velocity.
- Ankle-brachial index.
- Fundoscopy.

Giá trị ngưỡng các dữ kiện khảo sát tái cấu trúc thất trái và chức năng tâm trương

Parameter	Abnormal if
LV mass index (g/m ²)	>95 (women) >115 (men)
Relative wall thickness (RWT)	>0.42
Diastolic function: Septal e' velocity (cm/sec) Lateral e' velocity (cm/sec) LA volume index (mL/m ²)	<8 <10 ≥34
LV Filling pressures : E / e' (averaged) ratio	≥13

LA = left atrium; LV = left ventricle; RWT = relative wall thickness.

Chỉ định lâm sàng và chẩn đoán THA thứ phát (1)

Nguyên nhân thường gặp	Clinical indications			Diagnostics	
	Clinical history	Physical examination	Laboratory investigations	First-line test(s)	Additional/ confirmatory test(s)
Renal parenchymal disease	History of urinary tract infection or obstruction, haematuria, analgesic abuse; family history of polycystic kidney disease.	Abdominal masses (in case of polycystic kidney disease).	Presence of protein, erythrocytes, or leucocytes in the urine, decreased GFR.	Renal ultrasound	Detailed work-up for kidney disease.
Renal artery stenosis	Fibromuscular dysplasia: early onset hypertension (especially in women). Atherosclerotic stenosis: hypertension of abrupt onset, worsening or increasingly difficult to treat; flash pulmonary oedema.	Abdominal bruit	Difference of >1.5 cm in length between the two kidneys (renal ultrasound), rapid deterioration in renal function (spontaneous or in response to RAA blockers).	Renal Duplex Doppler ultrasonography	Magnetic resonance angiography, spiral computed tomography, intra-arterial digital subtraction angiography.

Chỉ định lâm sàng và chẩn đoán THA thứ phát (2)

Primary aldosteronism	Muscle weakness; family history of early onset hypertension and cerebrovascular events at age <40 years.	Arrhythmias (in case of severe hypokalaemia).	Hypokalaemia (spontaneous or diuretic-induced); incidental discovery of adrenal masses.	Aldosterone–renin ratio under standardized conditions (correction of hypokalaemia and withdrawal of <u>drugs</u> affecting RAA system).	Confirmatory tests (oral sodium loading, saline infusion, fludrocortisone suppression, or captopril test); adrenal CT scan; adrenal vein sampling.
Nguyên nhân ít gặp					
Pheochromocytoma	Paroxysmal hypertension or a crisis superimposed to sustained hypertension; headache, sweating, palpitations and pallor; positive family history of pheochromocytoma.	Skin stigmata of neurofibromatosis (café-au-lait spots, neurofibromas).	Incidental discovery of adrenal (or in some cases, extra-adrenal) masses.	Measurement of <u>urinary</u> fractionated metanephrines or <u>plasma-free metanephrines</u> .	CT or MRI of the abdomen and pelvis; ¹²³ I-labelled meta-iodobenzyl-guanidine scanning; genetic screening for pathogenic mutations.
Cushing's syndrome	Rapid weight gain, polyuria, polydipsia, psychological disturbances.	Typical body habitus (central obesity, moon-face, buffalo hump, red striae, hirsutism).	Hyperglycaemia	24-h urinary cortisol excretion	Dexamethasone-suppression tests

CT = computed tomography; GFR = glomerular filtration rate; MRI = magnetic resonance imaging; RAA = renin–angiotensin–aldosterone.

Mục tiêu huyết áp/ bệnh nhân THA (1)

Khuyến cáo	Loại	MCC	TL
HA tthu < 140 mmHg			
a. Bệnh nhân có nguy cơ tim mạch trung bình, thấp	I	B	266.269.270
b. B/n ĐTĐ	I	A	270.275.276
c. B/n có tiền sử đột quy	Ila	B	296.297
d. Cân nhắc ở b/n có BDMV	Ila	B	171.265
e. Cân nhắc ở b/n bệnh thận mạn do ĐTĐ hoặc không do ĐTĐ	Ila	B	312.313

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

Mục tiêu huyết áp/ bệnh nhân THA (2)

Khuyến cáo	Loại	MCC	TL
HA tâm thu < 140 mmHg			
Người cao tuổi < 80 kèm HATThu ≥ 160 mmHg cần giảm tới 140-150 mmHg	I	A	265
In fit elderly patients less than 80 years old SBP values <140 mmHg may be considered, whereas in the fragile elderly population SBP goals should be adapted to individual tolerability.	IIb	C	
> 80 tuổi: HATThu ở mức ≥ 160 mmHg, cần giảm tới 140-150 mmHg	I	B	287
HATTr ở mức < 90 mmHg người ĐTD < 85 mmHg	I	A	269.290. 293

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

Thay đổi lối sống

- ❑ Hạn chế muối 5-6g/ngày
- ❑ Uống rượu bia vừa phải
- ❑ Ăn nhiều rau, trái cây, sản phẩm sữa ít béo
- ❑ Giảm cân:
 - BMI < 25 kg/m²
 - Vòng bụng: * Nam < 90 cm
* Nữ < 80 cm
- ❑ Vận động thể lực đều đặn 5-7 ngày/1 tuần ít nhất 30 phút
- ❑ Ngưng thuốc lá

Chống chỉ định tuyệt đối và tương đối sử dụng thuốc hạ áp (1)

Drug	Compelling	Possible
Diuretics (thiazides)	Gout	Metabolic syndrome Glucose intolerance Pregnancy Hypercalcaemia Hypokalaemia
Beta-blockers	Asthma A–V block (grade 2 or 3)	Metabolic syndrome Glucose intolerance Athletes and physically active patients Chronic obstructive pulmonary disease (except for vasodilator beta-blockers)
Calcium antagonists (dihydropyridines)		Tachyarrhythmia Heart failure

Chống chỉ định tuyệt đối và tương đối sử dụng thuốc hạ áp (2)

Calcium antagonists (verapamil, diltiazem)	A–V block (grade 2 or 3, trifascicular block) Severe LV dysfunction Heart failure	
ACE inhibitors	Pregnancy Angioneurotic oedema Hyperkalaemia Bilateral renal artery stenosis	Women with child bearing potential
Angiotensin receptor blockers	Pregnancy Hyperkalaemia Bilateral renal artery stenosis	Women with child bearing potential
Mineralocorticoid receptor antagonists	Acute or severe renal failure (eGFR <30 mL/min) Hyperkalaemia	

Thuốc ưu tiên trên một số điều kiện đặc biệt (1)

Condition	Drug
Asymptomatic organ damage	
LVH	ACE inhibitor, calcium antagonist, ARB
Asymptomatic atherosclerosis	Calcium antagonist, ACE inhibitor
Microalbuminuria	ACE inhibitor, ARB
Renal dysfunction	ACE inhibitor, ARB

Thuốc ưu tiên trên một số điều kiện đặc biệt (2)

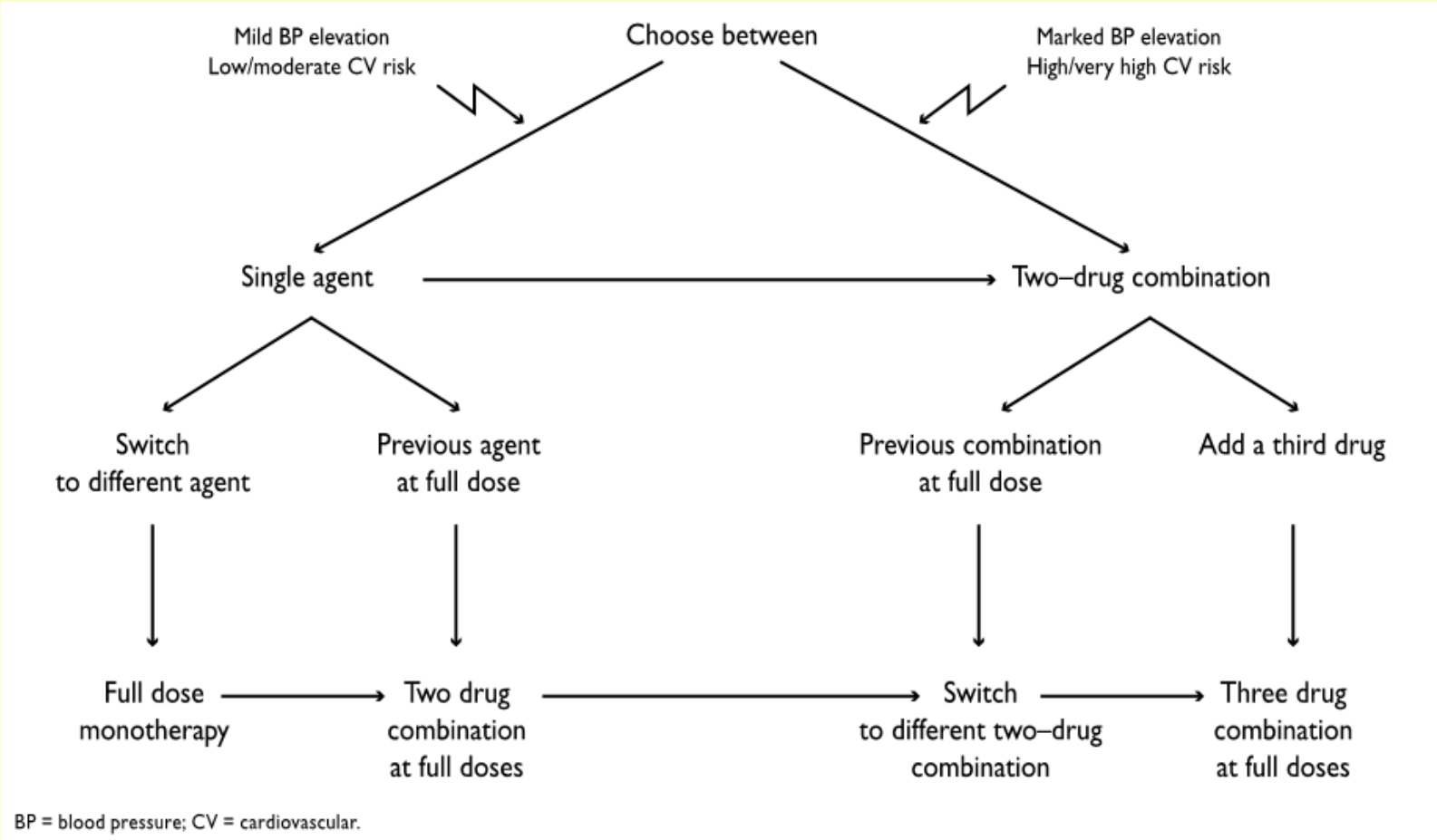
Clinical CV event	
Previous stroke	Any agent effectively lowering BP
Previous myocardial infarction	BB, ACE inhibitor, ARB
Angina pectoris	BB, calcium antagonist
Heart failure	Diuretic, BB, ACE inhibitor, ARB, mineralocorticoid receptor antagonists
Aortic aneurysm	BB
Atrial fibrillation, prevention	Consider ARB, ACE inhibitor, BB or mineralocorticoid receptor antagonist
Atrial fibrillation, ventricular rate control	BB, non-dihydropyridine calcium antagonist
ESRD/proteinuria	ACE inhibitor, ARB
Peripheral artery disease	ACE inhibitor, calcium antagonist

Thuốc ưu tiên trên một số điều kiện đặc biệt (3)

Other	
ISH (elderly)	Diuretic, calcium antagonist
Metabolic syndrome	ACE inhibitor, ARB, calcium antagonist
Diabetes mellitus	ACE inhibitor, ARB
Pregnancy	Methyldopa, BB, calcium antagonist
Blacks	Diuretic, calcium antagonist

ACE = angiotensin-converting enzyme; ARB = angiotensin receptor blocker; BB = beta-blocker; BP = blood pressure; CV = cardiovascular; ESRD = end-stage renal disease; ISH = isolated systolic hypertension; LVH = left ventricular hypertrophy.

Chiến lược sử dụng một thuốc hay thuốc phối hợp nhằm đạt mục tiêu HA



Thuốc phối hợp sử dụng trong các nghiên cứu lớn điều trị THA (1)

Trial	Comparator	Type of patients	SBP diff (mmHg)	Outcomes
<i>ACE-I and diuretic combination</i>				
PROGRESS ²⁹⁶	Placebo	Previous stroke or TIA	-9	-28% strokes (<i>P</i> <0.001)
ADVANCE ²⁷⁶	Placebo	Diabetes	-5.6	-9% micro/macro vascular events (<i>P</i> = 0.04)
HYVET ²⁸⁷	Placebo	Hypertensives aged ≥80 years	-15	-34% CV events (<i>P</i> <0.001)
CAPP ⁴⁵⁵	BB + D	Hypertensives	+3	+5% CV events (<i>P</i> = NS)
<i>Angiotensin receptor blocker and diuretic combination</i>				
SCOPE ⁴⁵⁰	D + placebo	Hypertensives aged ≥70 years	-3.2	-28% non fatal strokes (<i>P</i> = 0.04)
LIFE ⁴⁵⁷	BB + D	Hypertensives with LVH	-1	-26% stroke (<i>P</i> <0.001)

Thuốc phối hợp sử dụng trong các nghiên cứu lớn điều trị THA (2)

Calcium antagonist and diuretic combination

FEVER ²⁶⁹	D + placebo	Hypertensives	-4	-27% CV events ($P < 0.001$)
ELSA ¹⁸⁶	BB + D	Hypertensives	0	NS difference in CV events
CONVINCE ⁴⁵⁸	BB + D	Hypertensives with risk factors	0	NS difference in CV events
VALUE ⁴⁵⁶	ARB + D	High-risk hypertensives	-2.2	-3% CV events ($P = \text{NS}$)

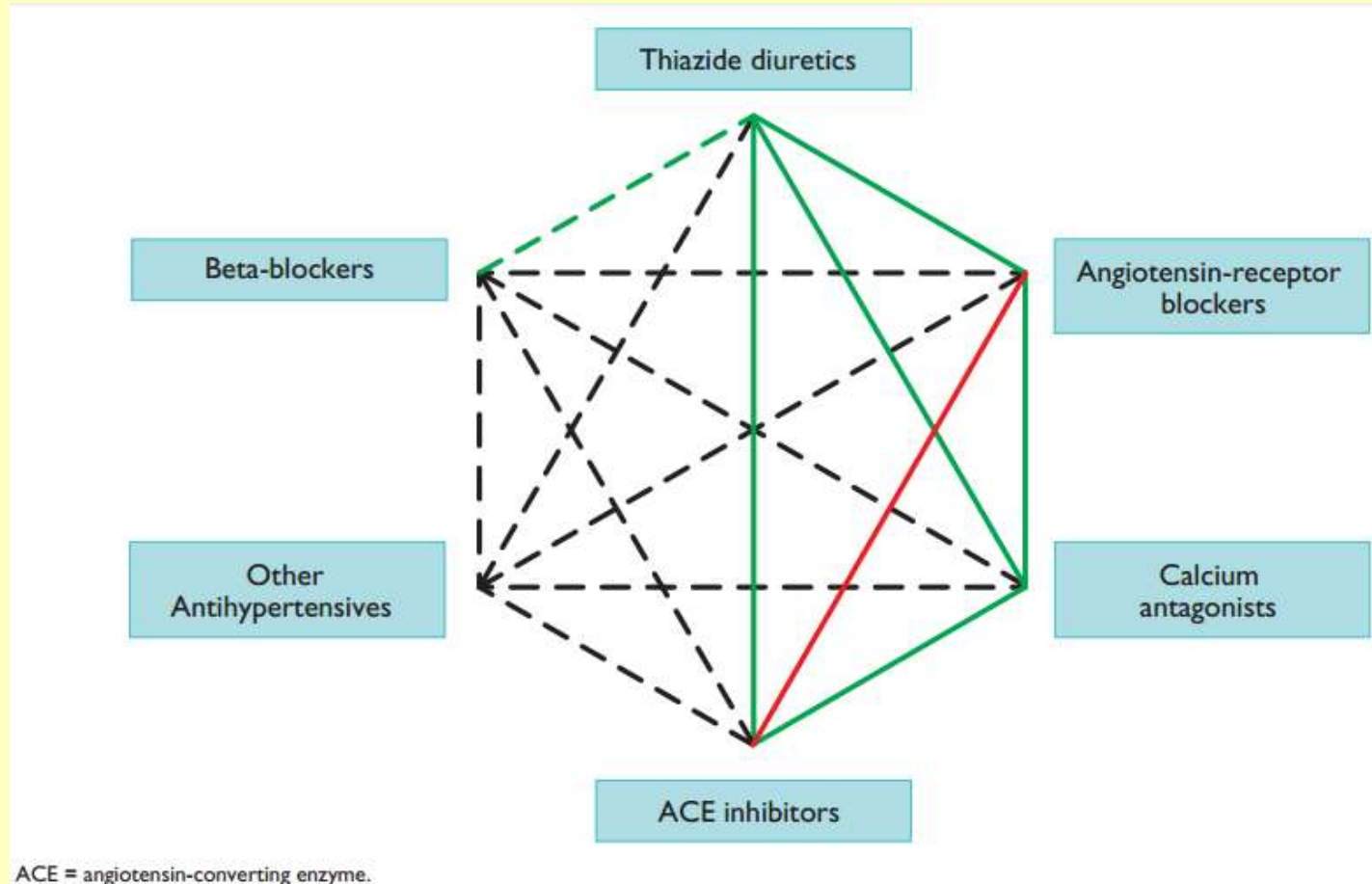
Thuốc phối hợp sử dụng trong các nghiên cứu lớn điều trị THA (3)

ACE-I and calcium antagonist combination				
SystEur ⁴⁵¹	Placebo	Elderly with ISH	-10	-31% CV events ($P < 0.001$)
SystChina ⁴⁵²	Placebo	Elderly with ISH	-9	-37% CV events ($P < 0.004$)
NORDIL ⁴⁶¹	BB + D	Hypertensives	+3	NS difference in CV events
INVEST ⁴⁵⁹	BB + D	Hypertensives with CHD	0	NS difference in CV events
ASCOT ⁴²³	BB + D	Hypertensives with risk factors	-3	-16% CV events ($P < 0.001$)
ACCOMPLISH ⁴¹⁴	ACE-I + D	Hypertensives with risk factors	-1	-21% CV events ($P < 0.001$)

Thuốc phối hợp sử dụng trong các nghiên cứu lớn điều trị THA (4)

BB and diuretic combination				
Coope & Warrender ^{453*}	Placebo	Elderly hypertensives	-18	-42% strokes ($P < 0.03$)
SHEP ⁴⁴⁹	Placebo	Elderly with ISH	-13	-36% strokes ($P < 0.001$)
STOP ⁴⁵⁴	Placebo	Elderly hypertensives	-23	-40% CV events ($P = 0.003$)
STOP 2 ⁴⁶⁰	ACE-I or CA	Hypertensives	0	NS difference in CV events
CAPP ⁴⁵⁵	ACE-I + D	Hypertensives	-3	-5% CV events ($P = NS$)
LIFE ⁴⁵⁷	ARB + D	Hypertensives with LVH	+1	+26% stroke ($P < 0.001$)
ALLHAT ⁴⁴⁸	ACE-I + BB	Hypertensives with risk factors	-2	NS difference in CV events
ALLHAT ⁴⁴⁸	CA + BB	Hypertensives with risk factors	-1	NS difference in CV events
CONVINCE ⁴⁵⁸	CA + D	Hypertensives with risk factors	0	NS difference in CV events
NORDIL ⁴⁶¹	ACE-I + CA	Hypertensives	-3	NS difference in CV events
INVEST ⁴⁵⁹	ACE-I + CA	Hypertensives with CHD	0	NS difference in CV events
ASCOT ⁴²³	ACE-I + CA	Hypertensives with risk factors	+3	+16% CV events ($P < 0.001$)
Combination of two renin-angiotensin-system blockers /ACE-I + ARB or RAS blocker + renin inhibitor				
ONTARGET ⁴⁶³	ACE-I or ARB	High-risk patients	-3	More renal events
ALTITUDE ⁴³³	ACE-I or ARB	High-risk diabetics	-1.3	More renal events

Phối hợp các loại thuốc THA có thể thực hiện



- ❑ Chỉ ức chế calci DHP nên phối hợp chẹn beta
- ❑ Không phối hợp UCMC với chẹn thụ thể AG_2

Chiến lược điều trị và lựa chọn thuốc

Recommendations	Class ^a	Level ^b	Ref. ^c
Diuretics (thiazides, chlorthalidone and indapamide), beta-blockers, calcium antagonists, ACE inhibitors and angiotensin receptor blockers are all suitable and recommended for the initiation and maintenance of antihypertensive treatment, either as monotherapy or in some combinations with each other.	I	A	284, 332

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

Chiến lược điều trị THA/bệnh nhân đái tháo đường (1)

Recommendations	Class ^a	Level ^b	Ref. ^c
While initiation of antihypertensive drug treatment in diabetic patients whose SBP is ≥ 160 mmHg is mandatory, it is strongly recommended to start drug treatment also when SBP is ≥ 140 mmHg.	I	A	275,276 290–293
A SBP goal < 140 mmHg is recommended in patients with diabetes.	I	A	270,275, 276,295
The DBP target in patients with diabetes is recommended to be < 85 mmHg.	I	A	290,293

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

Chiến lược điều trị THA/bệnh nhân đái tháo đường (2)

All classes of antihypertensive agents are recommended and can be used in patients with diabetes; RAS blockers may be preferred, especially in the presence of proteinuria or microalbuminuria.	I	A	394,513
It is recommended that individual drug choice takes comorbidities into account.	I	C	-
Simultaneous administration of two blockers of the RAS is not recommended and should be avoided in patients with diabetes.	III	B	433

Chiến lược điều trị THA/ bệnh thận mạn (1)

Recommendations	Class ^a	Level ^b	Ref. ^c
Lowering SBP to <140 mmHg should be considered.	Ila	B	303, 313
When overt proteinuria is present, SBP values <130 mmHg may be considered, provided that changes in eGFR are monitored.	Ilb	B	307, 308, 313

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

Chiến lược điều trị THA/ bệnh thận mạn (2)

RAS blockers are more effective in reducing albuminuria than other antihypertensive agents, and are indicated in hypertensive patients in the presence of microalbuminuria or overt proteinuria.	I	A	513,537
Reaching BP goals usually requires combination therapy and it is recommended to combine RAS blockers with other antihypertensive agents.	I	A	446

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

Chiến lược điều trị THA/ đột quỵ (1)

Recommendations	Class ^a	Level ^b	Ref. ^c
It is not recommended to intervene with BP-lowering therapy during the first week after acute stroke irrespective of BP level, although clinical judgement should be used in the face of very high SBP values.	III	B	544, 545
Antihypertensive treatment is recommended in hypertensive patients with a history of stroke or TIA, even when initial SBP is in the 140–159 mmHg range.	I	B	280, 296

TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

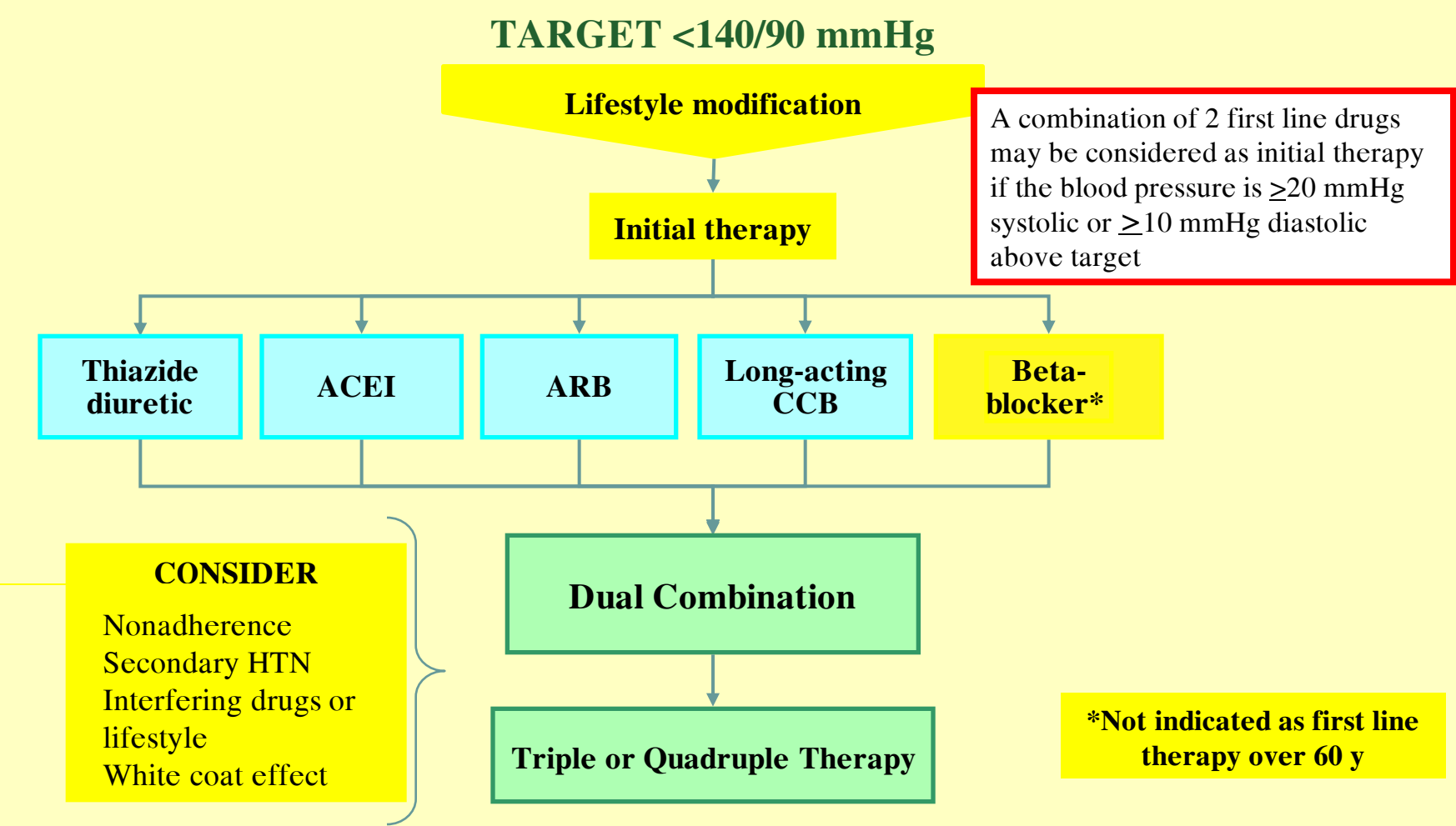
Chiến lược điều trị THA/ đột quỵ (2)

In hypertensive patients with a history of stroke or TIA, a SBP goal of <140 mmHg should be considered.	IIa	B	280, 296, 297
In elderly hypertensives with previous stroke or TIA, SBP values for intervention and goal may be considered to be somewhat higher.	IIb	B	141, 265
All drug regimens are recommended for stroke prevention, provided that BP is effectively reduced.	I	A	284

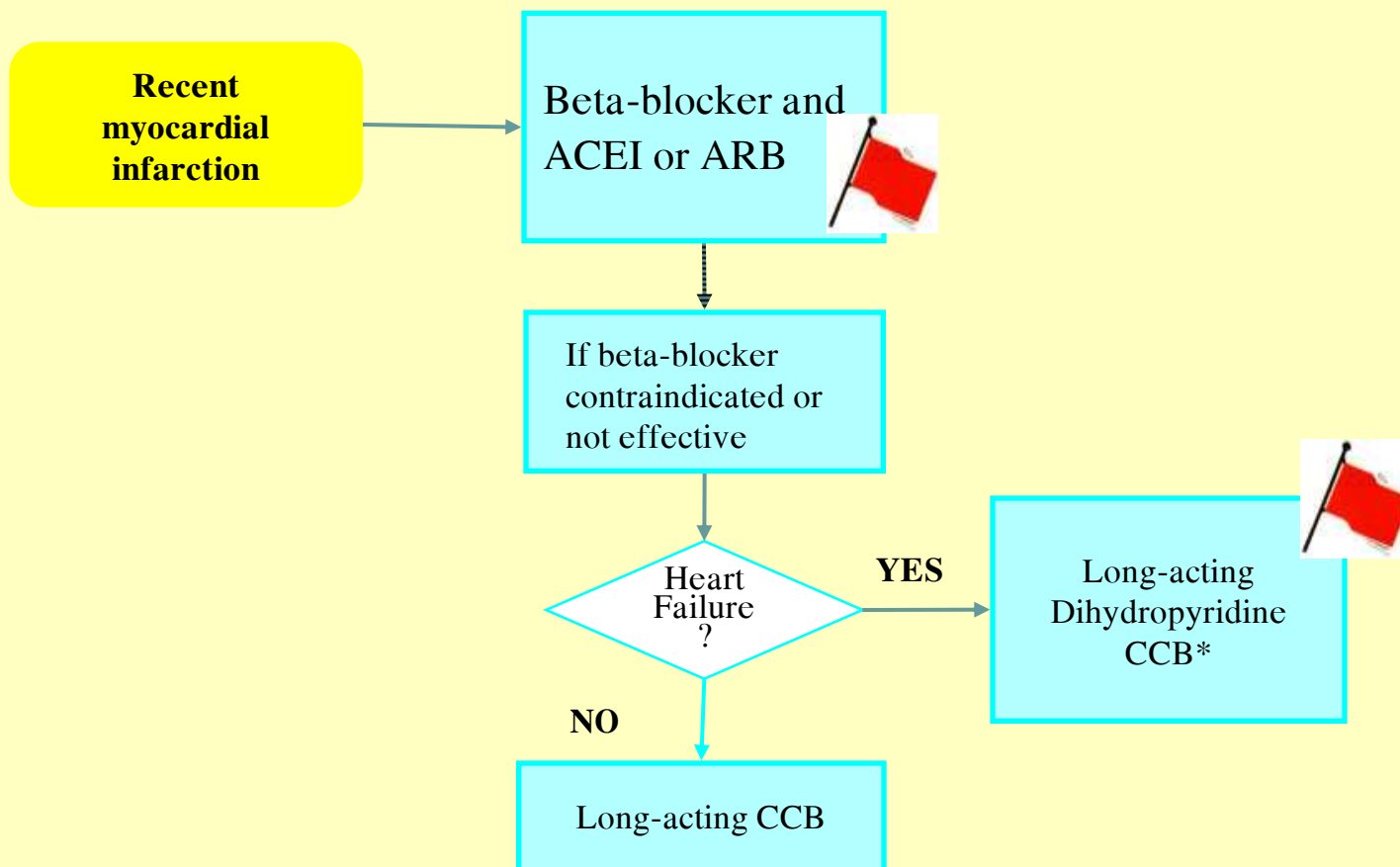
TL: Mancia G. et al. 2013 ESH/ESC Guidelines for the management of arterial hypertension. Eur. Heart. J doi: 10.1093/euroheartj/ eht 151

The 2013 CHEP (Canadian Hypertension Education Program) on the management of systemic hypertension

Điều trị tăng huyết áp không có chỉ định bắt buộc



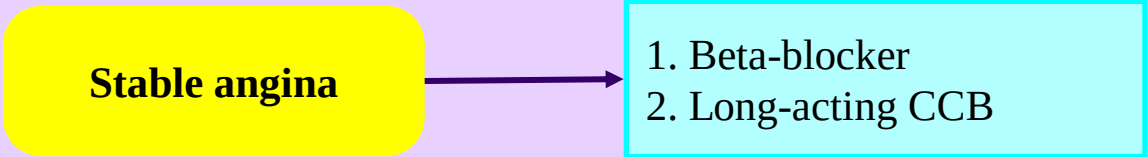
Điều trị tăng huyết áp trên bệnh nhân mới bị nhồi máu cơ tim



*Avoid non dihydropyridine CCBs (diltiazem, verapamil)

Điều trị tăng huyết áp trên bệnh nhân có bệnh tim thiếu máu cục bộ

Stable angina

- 
1. Beta-blocker
 2. Long-acting CCB

ACEI are recommended for most patients with established CAD*



ARBs are not inferior to ACEI in IHD

- Caution should be exercised when combining a non DHP-CCB and a beta-blocker
- If abnormal systolic left ventricular function: avoid non DHP-CCB (Verapamil or Diltiazem)
- Dual therapy with an ACEI and an ARB are not recommended in the absence of refractory heart failure
- The combination of an ACEi and CCB is preferred

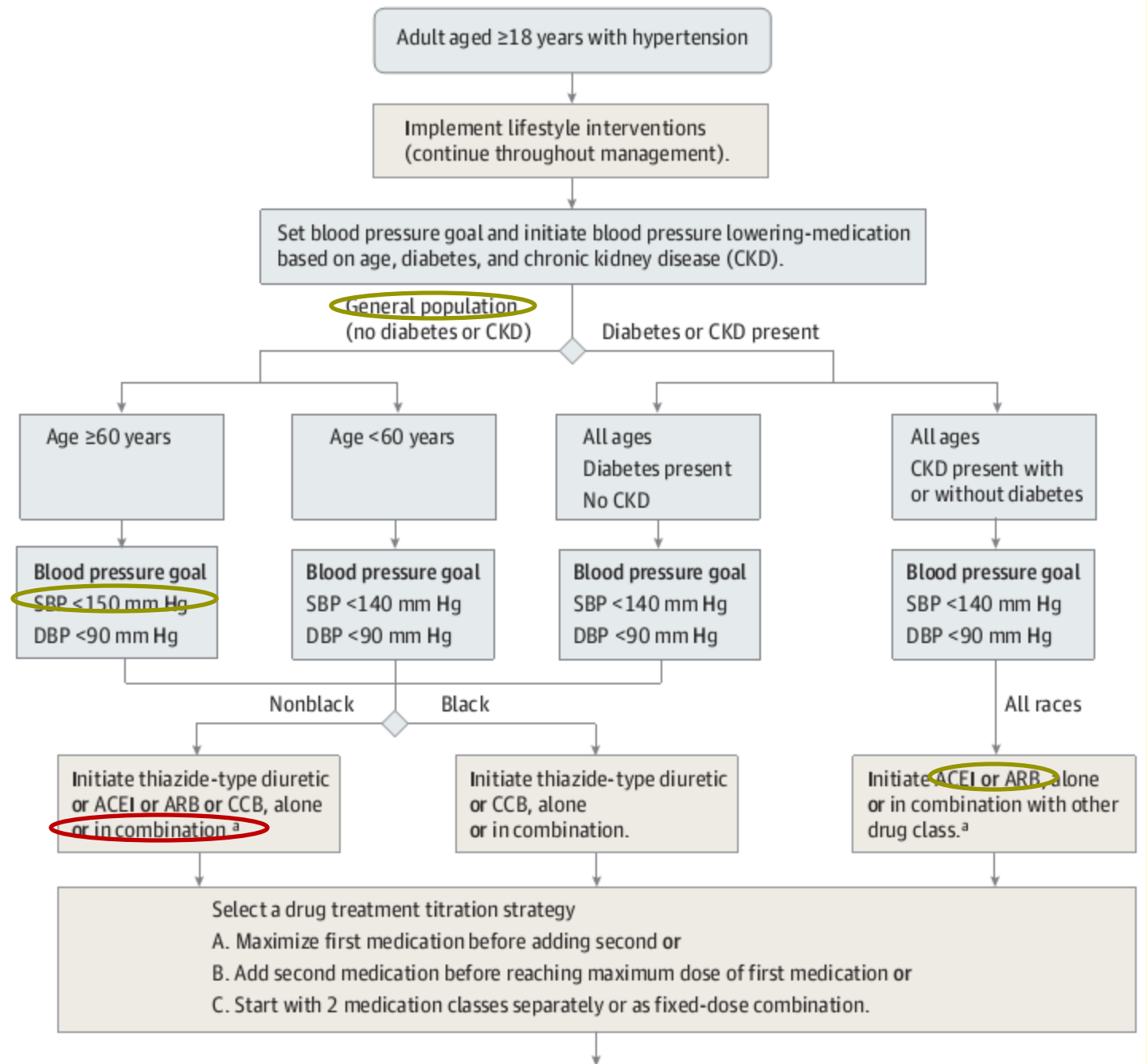


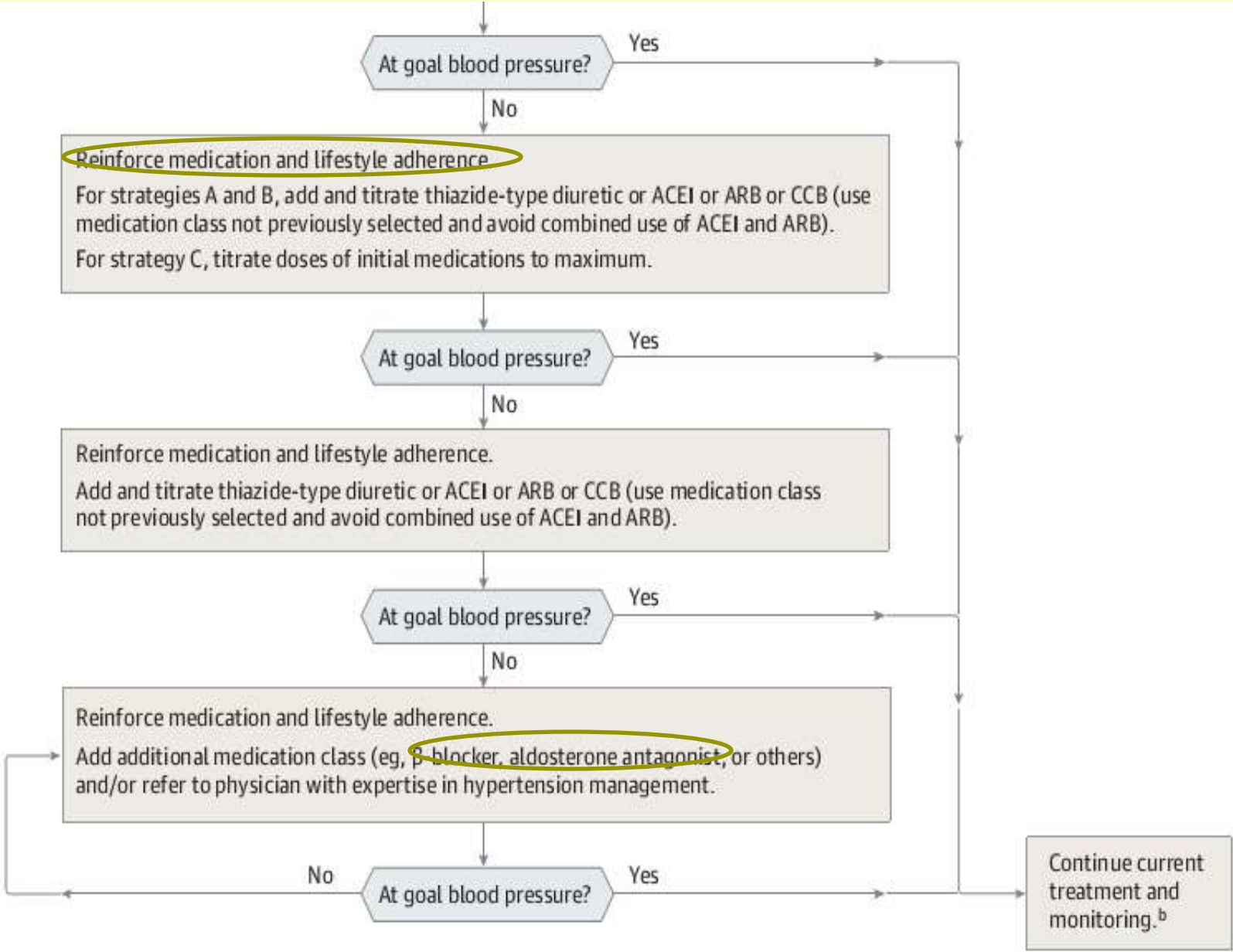
*Those at low risk with well controlled risk factors may not benefit from ACEI therapy

Khuyến cáo 2014 của Hội Y Khoa Mỹ về điều trị THA JNC8

2014 Evidence-Based Guideline for the Management of High Blood Pressure in Adults
Report From the Panel Members Appointed to the Eighth Joint National Committee (JNC 8)

Paul A. James, MD; Suzanne Oparil, MD; Barry L. Carter, PharmD; William C. Cushman, MD; Cheryl Dennison-Himmelfarb, RN, ANP, PhD; Joel Handler, MD; Daniel T. Lackland, DrPH; Michael L. LeFevre, MD, MSPH; Thomas D. MacKenzie, MD, MSPH; Olugbenga Ogedegbe, MD, MPH, MS; Sidney C. Smith Jr, MD; Laura P. Svetkey, MD, MHS; Sandra J. Taler, MD; Raymond R. Townsend, MD; Jackson T. Wright Jr, MD, PhD; Andrew S. Narva, MD; Eduardo Ortiz, MD, MPH



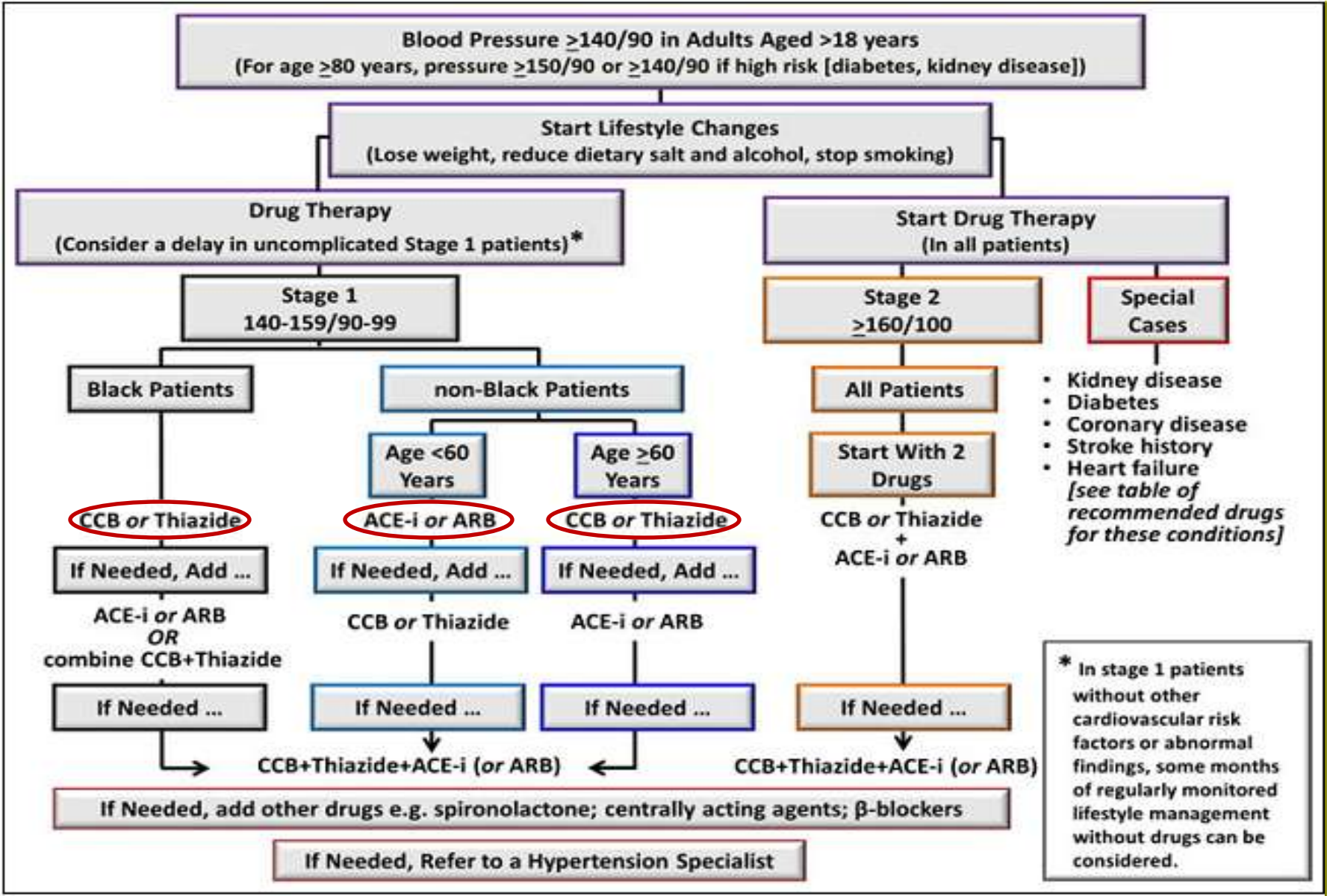


Clinical Practice Guidelines for the Management of Hypertension in the Community

A Statement by the American Society of Hypertension and the International Society of Hypertension

Michael A. Weber, MD;¹ Ernesto L. Schiffrin, MD;² William B. White, MD;³ Samuel Mann, MD;⁴ Lars H. Lindholm, MD;⁵
John G. Kenerson, MD;⁶ John M. Flack, MD;⁷ Barry L. Carter, Pharm D;⁸ Barry J. Materson, MD;⁹ C. Venkata S. Ram, MD;¹⁰
Debbie L. Cohen, MD;¹¹ Jean-Claude Cadet, MD;¹² Roger R. Jean-Charles, MD;¹³ Sandra Taler, MD;¹⁴ David Kountz, MD;¹⁵
Raymond R. Townsend, MD;¹⁶ John Chalmers, MD;¹⁷ Agustin J. Ramirez, MD;¹⁸ George L. Bakris, MD;¹⁹ Jiguang Wang, MD;²⁰
Aletta E. Schutte, MD;²¹ John D. Bisognano, MD;²² Rhian M. Touyz, MD;²³ Dominic Sica, MD;²⁴ Stephen B. Harrap, MD²⁵

Quy trình điều trị THA/người lớn của Hội THA Mỹ 2014



Lựa chọn thuốc điều trị THA không bệnh kèm theo

Patient Type	First Drug	Add Second Drug If Needed to Achieve a BP <140/90 mm Hg	If Third Drug is Needed to Achieve a BP of <140/90 mm Hg
A. When hypertension is the only or main condition			
Black patients (African ancestry): All ages	CCB ^a or thiazide diuretic	ARB ^b or ACE inhibitor (If unavailable can add alternative first drug choice)	Combination of CCB + ACE inhibitor or ARB + thiazide diuretic
White and other non-black Patients: <u>Younger than 60</u>	<u>ARB^b or ACE inhibitor</u>	CCB ^a or thiazide diuretic	Combination of CCB + ACE inhibitor or ARB + thiazide diuretic
White and other non-black patients: <u>60 y and older</u>	<u>CCB^a or thiazide diuretic</u> (Although ACE inhibitors or ARBs are also usually effective)	ARB ^b or ACE inhibitor (or CCB or thiazide if ACE inhibitor or ARB used first)	Combination of CCB + ACE inhibitor or ARB + thiazide diuretic

Lựa chọn thuốc điều trị THA có bệnh nội khoa kèm theo

B. When hypertension is associated with other conditions

Hypertension and diabetes	ARB or ACE inhibitor Note: in black patients, it is acceptable to start with a CCB or thiazide	CCB or thiazide diuretic Note: in black patients, if starting with a CCB or thiazide, add an ARB or ACE inhibitor	The alternative second drug (thiazide or CCB)
Hypertension and chronic kidney disease	ARB or ACE inhibitor Note: in black patients, good evidence for renal protective effects of ACE inhibitors	CCB or thiazide diuretic ^c	The alternative second drug (thiazide or CCB)
Hypertension and clinical coronary artery disease ^d	β-Blocker plus ARB or ACE inhibitor	CCB or thiazide diuretic	The alternative second step drug (thiazide or CCB)
Hypertension and stroke history ^e	ACE inhibitor or ARB	Thiazide diuretic or CCB	The alternative second drug (CCB or thiazide)
Hypertension and heart failure	Patients with symptomatic heart failure should usually receive an ARB or ACE inhibitor + β -blocker + diuretic + spironolactone regardless of blood pressure. A dihydropyridine CCB can be added if needed for BP control.		

Abbreviations: ACE, angiotensin-converting enzyme; ARB, angiotensin receptor blocker; BP, blood pressure; CCB, calcium channel blocker; eGFR, estimated glomerular filtration rate.

^aCCBs are generally preferred, but thiazides may cost less.

^bARBs can be considered because ACE inhibitors can cause cough and angioedema, although ACE inhibitors may cost less.

^cIf eGFR <40 mL/min, a loop diuretic (eg, furosemide or torsemide) may be needed.

^dNote: If history of myocardial infarction, a β -blocker and ARB/or ACE inhibitor are indicated regardless of blood pressure.

^eNote: If using a diuretic, there is good evidence for indapamide (if available).

So sánh các
khuyến cáo
về mục tiêu
HA và
thuốc khởi
đầu điều trị

TL: James PA et al. 2014
JNC – JAMA. Doi: 10.
1001/jama 2013. 284427

Guideline	Population	Goal BP, mm Hg	Initial Drug Treatment Options
2014 Hypertension guideline	General ≥60 y	<150/90	Nonblack: thiazide-type diuretic, ACEI, ARB, or CCB
	General <60 y	<140/90	Black: thiazide-type diuretic or CCB
	Diabetes	<140/90	Thiazide-type diuretic, ACEI, ARB, or CCB
	CKD	<140/90	ACEI or ARB
ESH/ESC 2013 ³⁷	General nonelderly	<140/90	β-Blocker, diuretic, CCB, ACEI, or ARB
	General elderly <80 y	<150/90	
	General ≥80 y	<150/90	
	Diabetes	<140/85	ACEI or ARB
	CKD no proteinuria	<140/90	ACEI or ARB
	CKD + proteinuria	<130/90	
CHEP 2013 ³⁸	General <80 y	<140/90	Thiazide, β-blocker (age <60y), ACEI (nonblack), or ARB
	General ≥80 y	<150/90	
	Diabetes	<130/80	ACEI or ARB with additional CVD risk ACEI, ARB, thiazide, or DHPCCB without additional CVD risk
	CKD	<140/90	ACEI or ARB
ADA 2013 ³⁹	Diabetes	<140/80	ACEI or ARB
KDIGO 2012 ⁴⁰	CKD no proteinuria	≤140/90	ACEI or ARB
	CKD + proteinuria	≤130/80	
NICE 2011 ⁴¹	General <80 y	<140/90	<55 y: ACEI or ARB
	General ≥80 y	<150/90	≥55 y or black: CCB
ISHIB 2010 ⁴²	Black, lower risk	<135/85	Diuretic or CCB
	Target organ damage or CVD risk	<130/80	

Tiến bộ mới trong điều trị tăng huyết áp

➤^W Renal sympathetic denervation in patients with treatment-resistant hypertension (The Symplicity HTN-2 Trial): a randomised controlled trial

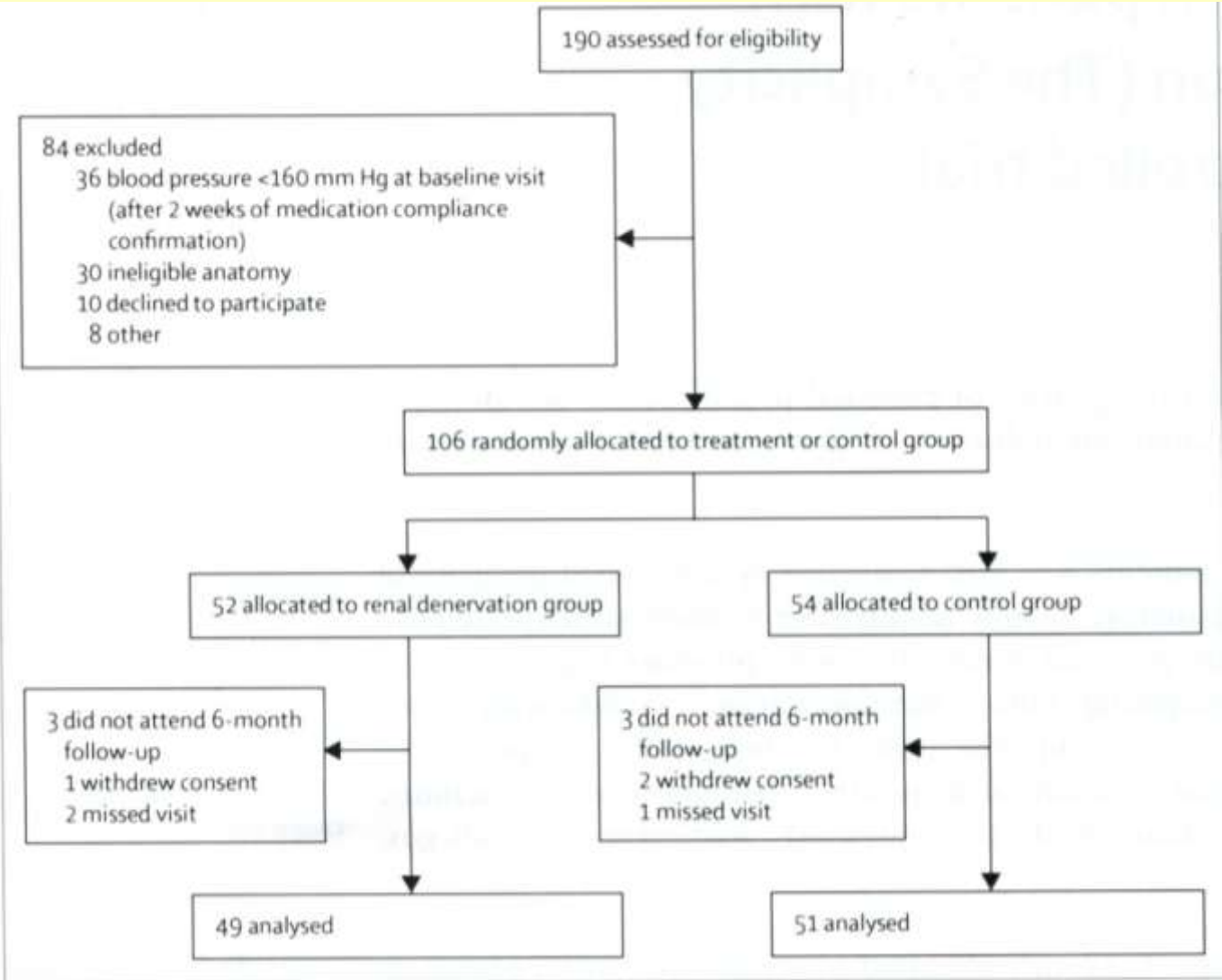
Symplicity HTN-2 Investigators

Lancet 2010; **376**: 1903–09

Published Online November 17, 2010

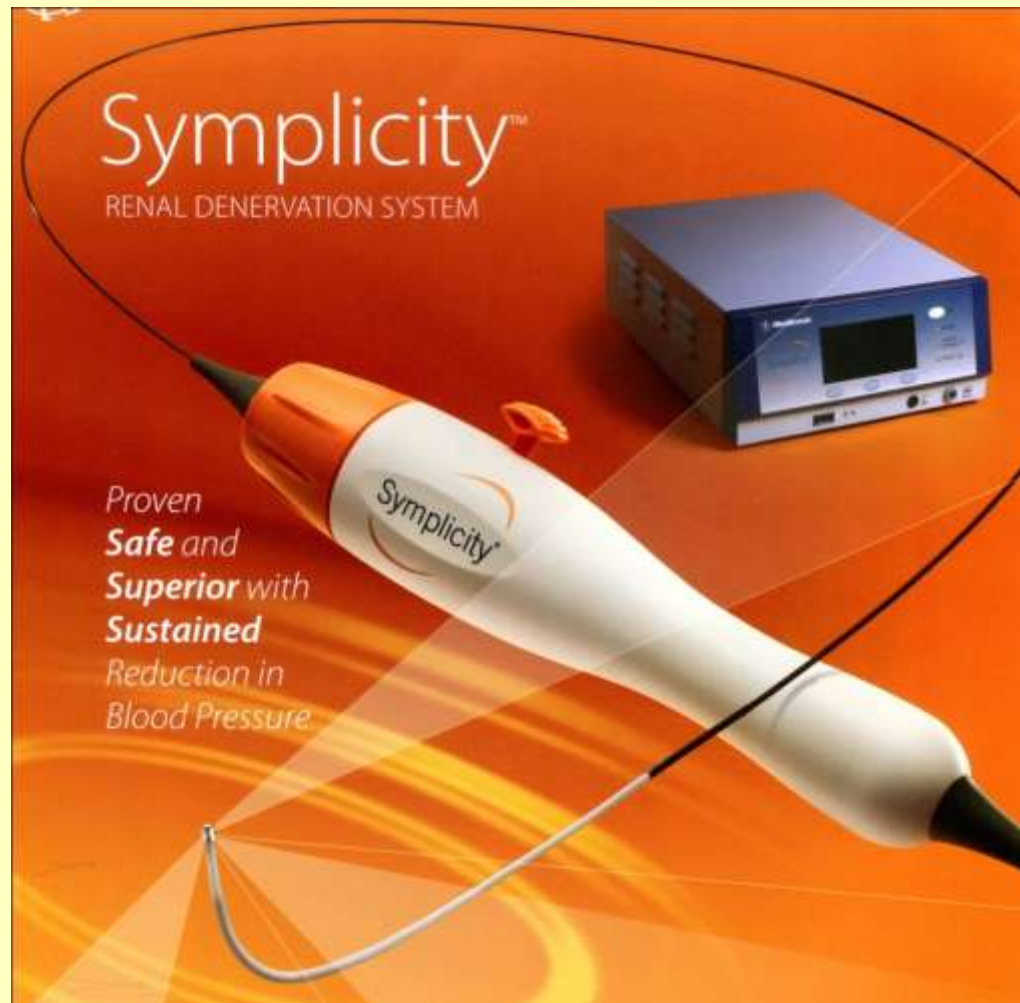
DOI:10.1016/S0140-6736(10)62039-9

Lưu đồ nghiên cứu

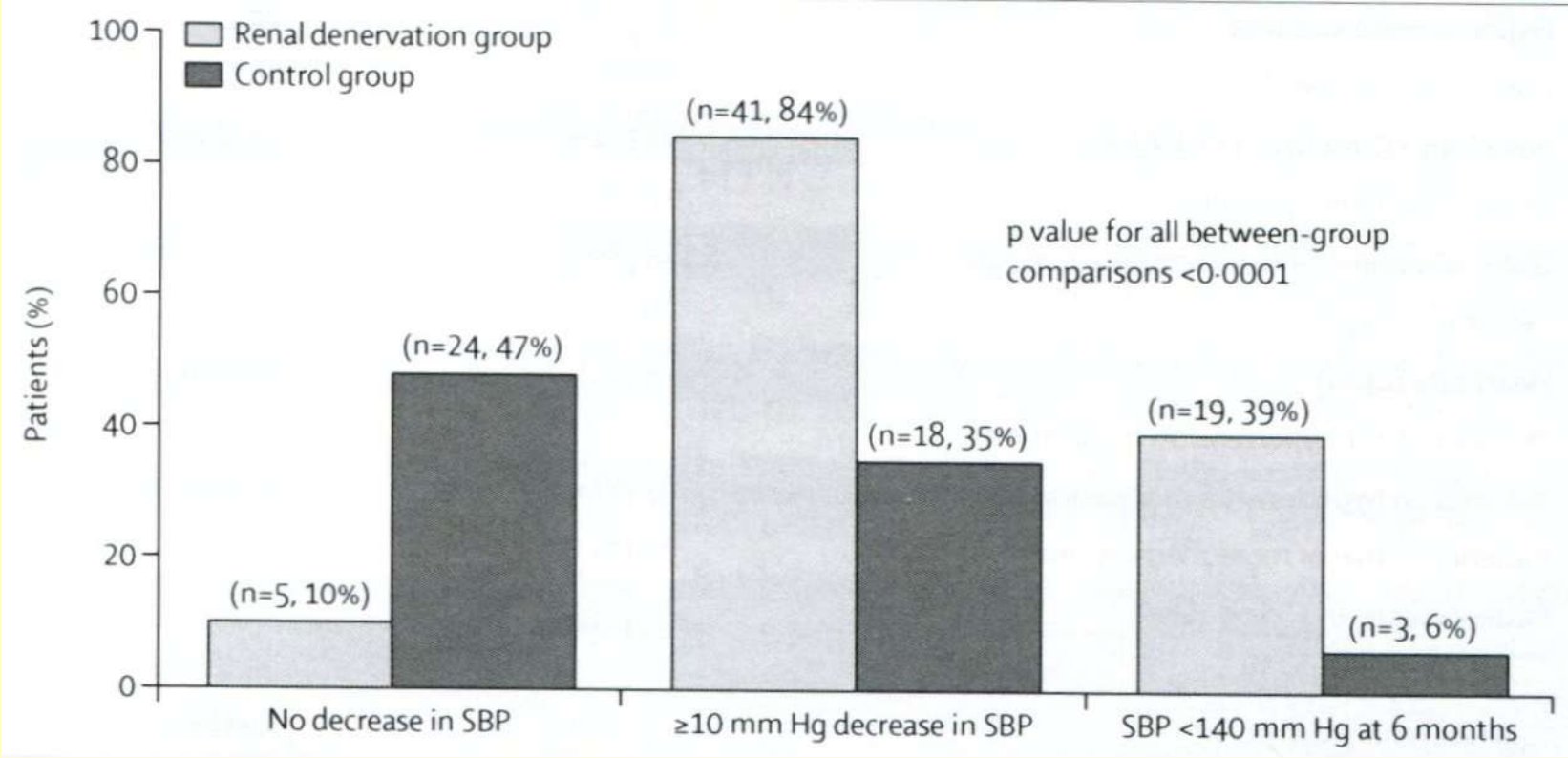


□ TL: Symplicity HTN-2 Investigators, Lancet 2010; 376: 1903-1909

Hệ thống hủy thần kinh giao cảm thận (Renal denervation system)



Kết quả sau 6 tháng



✧ TL: Symplicity HTN-2 Investigators, Lancet 2010; 376: 1903-1909

Biến đổi các chỉ điểm sinh học thận/điều trị hủy giao cảm thận so với placebo

	Renal denervation group		Control group		Difference in mean change (95% CI)	p value
	Patients (n)	Mean change (SD)	Patients (n)	Mean change (SD)		
eGFR* (mL/min per 1.73 m ²)	49	0.2 (11)	51	0.9 (12)	-0.7 (-5.4 to 3.9)	0.76
Serum creatinine (μmol/L)	49	0.2 (17.6)	51	-1.1 (10.3)	1.3 (-4.5 to 7.0)	0.67
Cystatin C (mg/L)	37	0.1 (0.2)	40	0.0 (0.1)	0.0 (0.0 to 0.1)	0.31

eGFR=estimated glomerular filtration rate. *Calculated on the basis of Modification of Diet in Renal Disease Study criteria.¹²

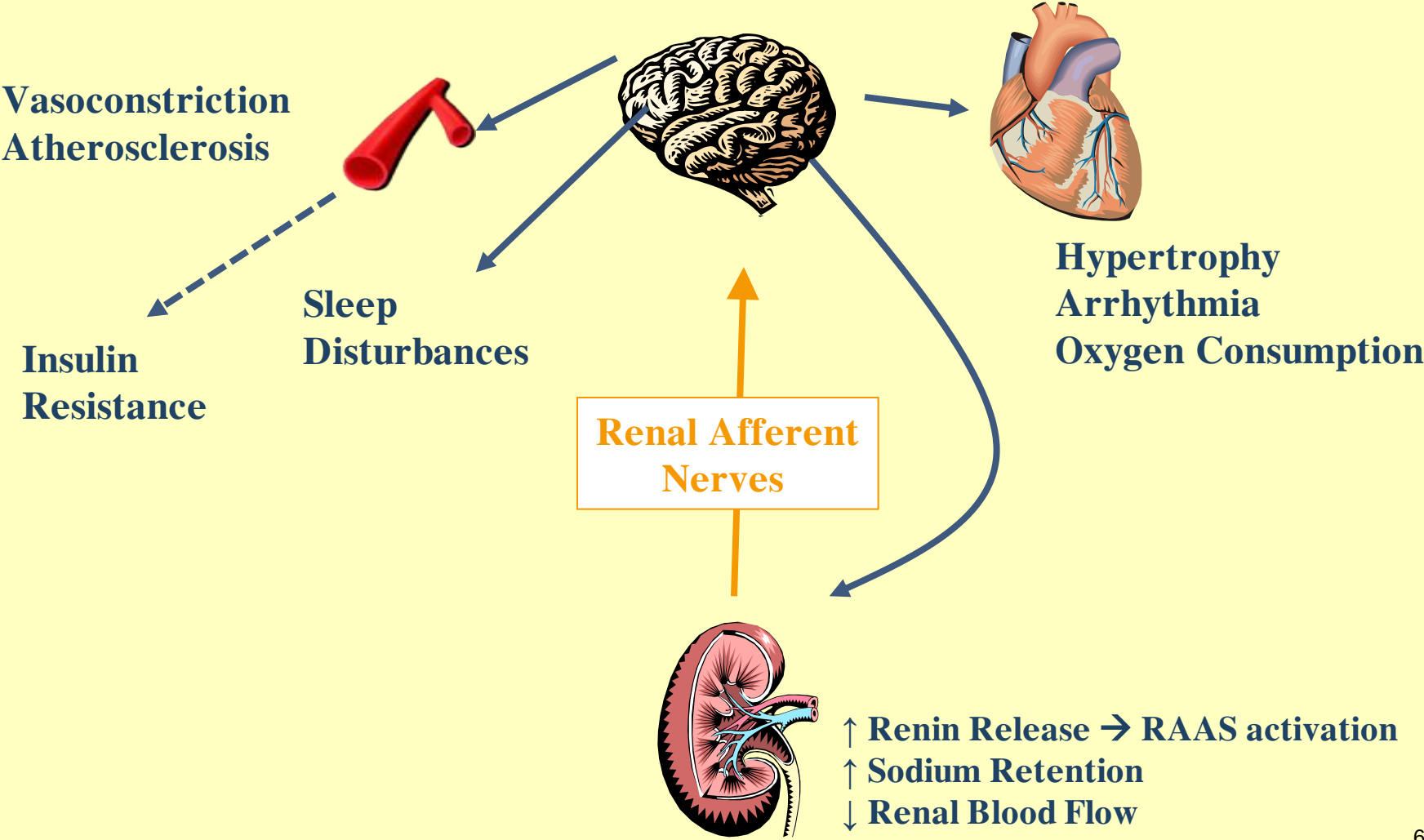
✳ TL: Symplicity HTN-2 Investigators, Lancet 2010; 376: 1903-1909

Hiệu quả của huỷ giao cảm động mạch thận/THA kháng trị: Nghiên cứu phân tích gộp

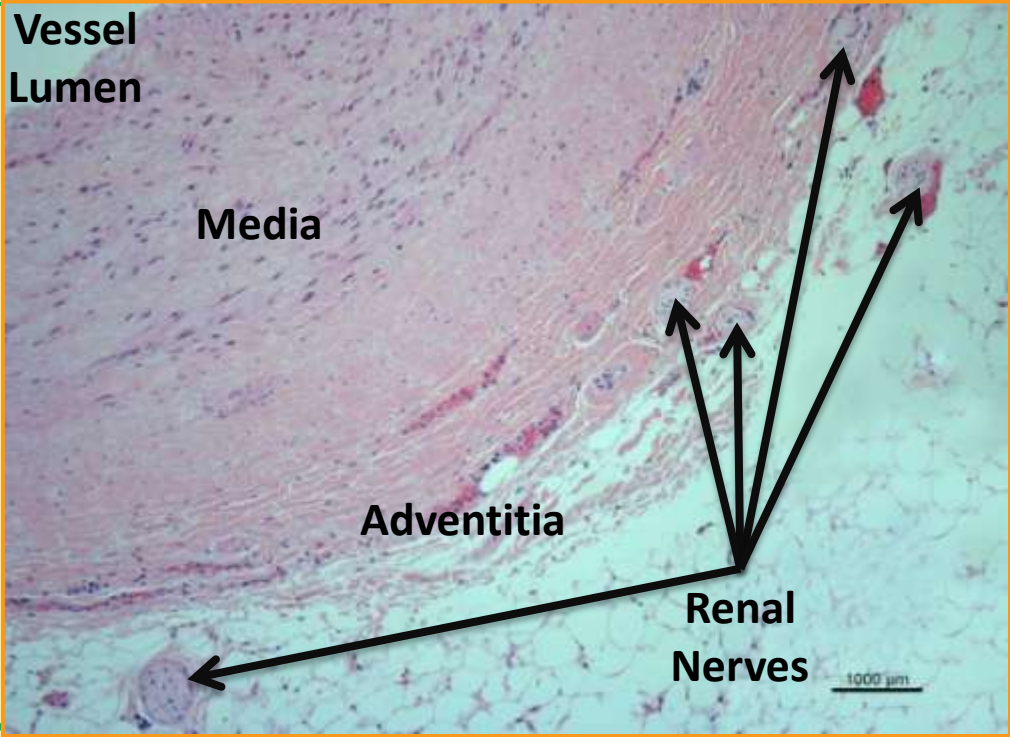
- ❑ Phân tích 2 nghiên cứu phân phối ngẫu nhiên (N = 133), 1 nghiên cứu quan sát (N = 50) và 9 nghiên cứu quan sát không kiểm soát (N = 396)
- ❑ Kết quả:
- ❑ Huỷ giao cảm ĐM thận có hiệu quả qua theo dõi trung bình 6 tháng
- ❑ Hiệu quả ở cả n/c phân phối ngẫu nhiên và n/c quan sát.

Renal Sympathetic Activation: Afferent Nerves

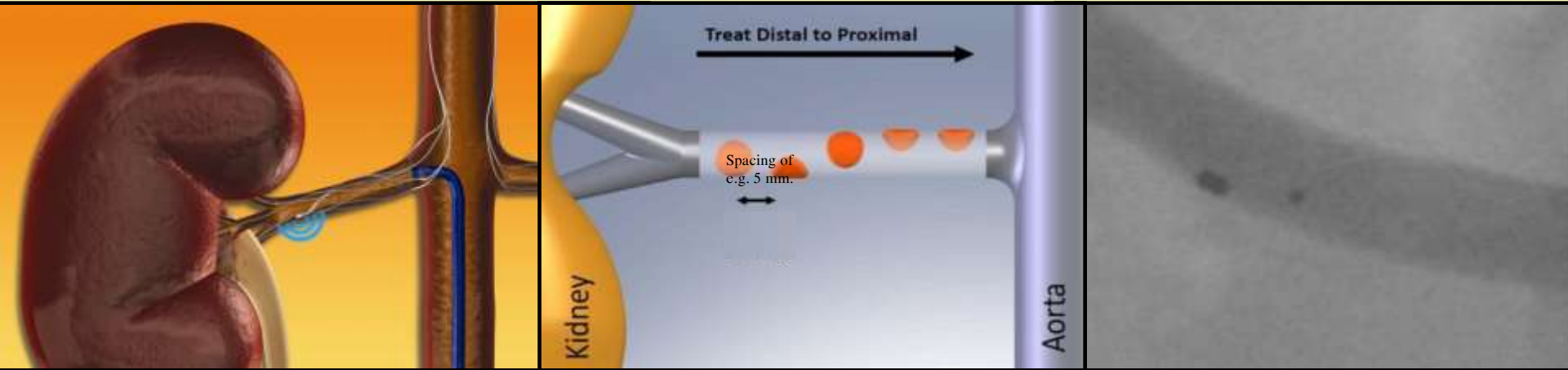
Kidney as Origin of Central Sympathetic Drive



Renal Nerve Anatomy



Renal Nerve Anatomy Allows a Catheter-Based Approach



- Renal artery access via standard interventional technique
- 4-6 two-minute treatments per artery
- Proprietary RF generator
 - Automated
 - Low power
 - Built-in safety algorithms



Nghiên cứu SYMPLICITY HTN-3: kết quả không như mong đợi

Nghiên cứu Symplicity HTN-3

- ❑ 535 b/n THA kháng trị, Hatth > 160 mmHg
- ❑ Phân phối ngẫu nhiên, 2 nhóm sham- control, chỉ chụp mạch
- ❑ Tiêu chí chính: mức giảm huyết áp 2 nhóm/ tháng thứ 6
- ❑ Kết quả: tương đương giữa 2 nhóm
- ❑ Thất vọng ++

Kết luận

- ❑ Điều trị THA 2014:
 - Điều trị toàn diện
 - Mục tiêu huyết áp linh hoạt hơn
 - Phối hợp thuốc là cần thiết
 - Viên thuốc phối hợp: tăng tuân thủ điều trị
- ❑ Biện pháp của tương lai
 - Điều trị theo cá thể hướng di truyền
 - Huỷ giao cảm: biện pháp hứa hẹn trong THA kháng trị, còn nhiều chông gai