

# HTA de difícil manejo

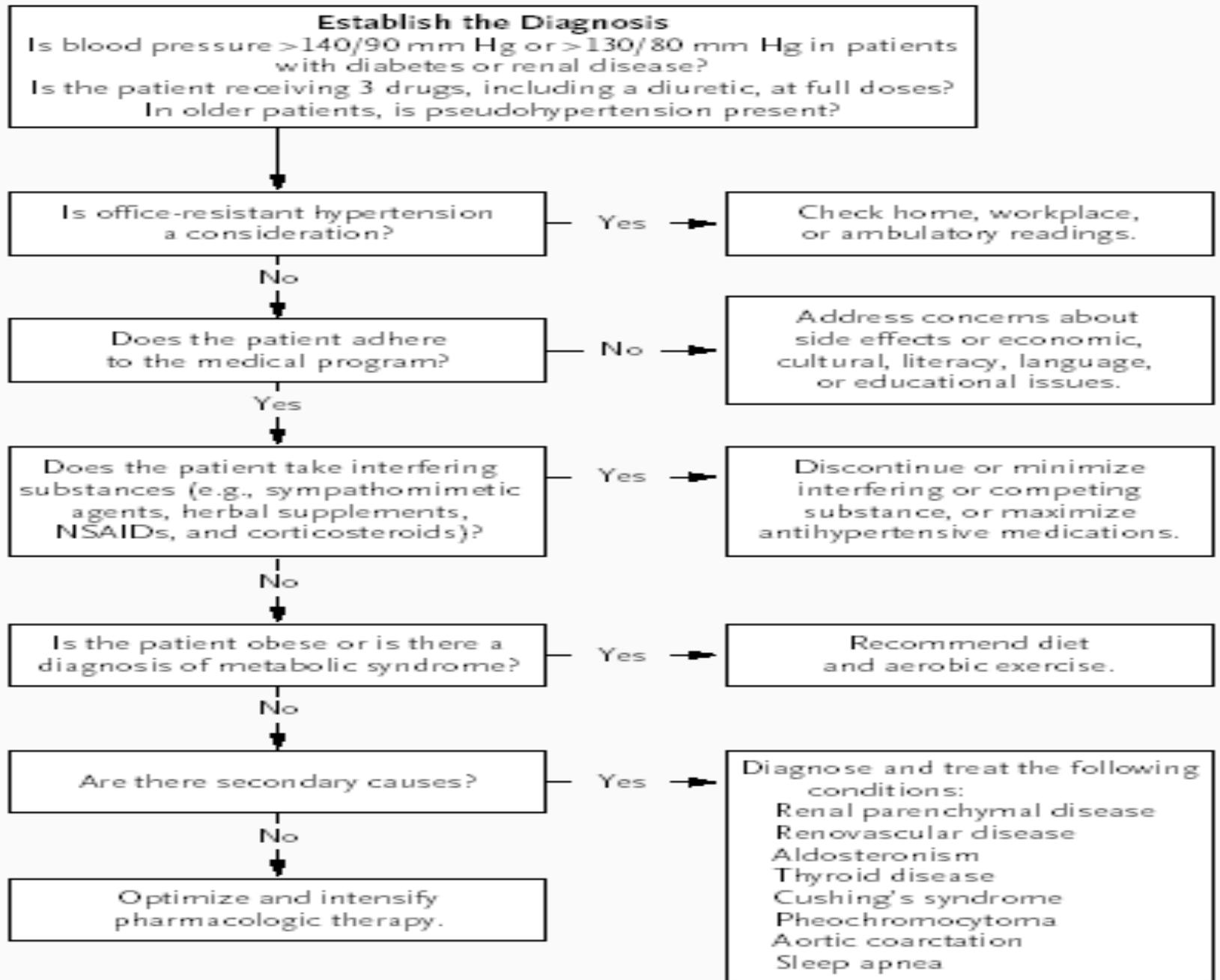
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- Se define HTA refractaria a una TA de 140 /90 o 130/80 mmHg en paciente DBT o enfermedad renal (Se define x Cr > 1.5 mg , o Proteinuria > 300 mg / 24 h)
  
  - A pesar de dosis completa y adherencias al tto. de 3 medicaciones Incluyendo diuréticos

- HTA sistólica + frecuente en > 60 años
- Se define como HTA de difícil control a una TA persistentemente elevada con tto 2 a 3 drogas, sin llegar a cumplir otro criterio
- Es más frecuente que la refractaria



**Figure 1. Treatment of Resistant Hypertension.**  
 NSAIDs denotes nonsteroidal antiinflammatory drugs.

# Diagnóstico

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- Reposo 5 minutos antes de la toma
- En brazo derecho a altura corazón
- Interrogar sobre café, cigarrillos previos TA
- Dx 2 tomas aleatorias o una  $> 160 / 100$  mmHg
- A pesar de tratamiento anti HTA

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- Examen físico dirigido a buscar daño órganos diana:

**Table 1.** Recommended Evaluation of Patients with Hypertension.\*

**Basic studies**

History taking and physical examination (with a particular focus on the identification of cardiac enlargement, abdominal bruits, peripheral pulses, and funduscopic changes)

Urinalysis (for evidence of microalbuminuria)

Blood chemical analysis, including creatinine, blood glucose, potassium, uric acid, and lipids

Electrocardiography

**Additional studies in patients with resistant or difficult-to-treat hypertension**

Repeated measurement of home or ambulatory blood pressures

Echocardiography

Consideration of tests for causes of secondary hypertension

\* Data are adapted from the Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure<sup>1</sup> and Wofford et al.<sup>11</sup>

- Sobrecarga de volumen y el aumento de tono simpático producen taquicardia
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- Los niveles de renina no son útiles en sobrecarga de volumen

- Pero si en causa secundarias de HTA

- Se debe solicita MAPA

- En anciano tener en cuenta PseudoHTA

# Adherencia al Tratamiento

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- Se debe evaluar en forma rutinaria
- Estudios han mostrado que a + del 50 % de pactes no se les incrementó dosis a pesar de múltiple visitas
- La falta de adherencia es muy difícil de reconocer ( taquicardia y Beta-bloq)

# Sustancias exógenas en HTA

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- Simpaticomiméticos ( efedrina, cocaína, fenilefrina, anfetaminas)
- Herbales ( yumbina y ginsen)
- Anabólicos
- Supresores del apetito
- EPO, AINES, COX 2 ( aumentan ambas)
- Alcohol y dieta rica en Na (NaU >150mEq/día)
- Obesos (> 40%, requieren mayor dosis de medicación)

# Evaluación HTA secundaria

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- En un estudio 4000 pacientes fueron evaluados durante 18 años
- Las causas secundarias fueron globalmente del 10%
- En mayores de 60 años 17%

**Table 2. Secondary Causes of Resistant Hypertension.\***

Secondary Cause	Symptoms and Signs	Estimated Prevalence %	Screening Tests or Findings	Treatment
Renal parenchymal disease	Nocturia, edema	1.0–8.0 (depending on the creatinine level)	Proteinuria, cells, and casts; elevated levels of serum creatinine	ACE inhibitor or ARB plus loop diuretic; beta-blocker; calcium-channel blocker
Renal artery disease	Recent onset of elevated blood pressure in older patients or hypertension in patients under 5 yr; loss of previously good blood-pressure control; use of tobacco; widespread vascular disease; multidrug-resistant hypertension; severe hypertension in young patients; epigastric or abdominal bruit	3.0–4.0	Increased serum creatinine level during treatment with an ACE inhibitor or ARB; MRA; Doppler; ACE-inhibitor renography; disparity in kidney size	Angioplasty with stenting in patients with unilateral disease and in selected patients with bilateral disease; balloon angioplasty for fibromuscular dysplasia; ACE inhibitor or ARB with diuretic
Aldosteronism	Fatigue; hypokalemia (not always present); lack of response to potassium supplementation	1.5–15.0 (higher in recent series)	Abnormal ratio of aldosterone to renin (>25:1); abnormal response to sodium loading; imaging studies (CT or MRI)	Aldosterone antagonists; ACE inhibitor or ARB with hyperplasia; surgery for adenoma
Pheochromocytoma	Palpitations; headache; diaphoresis; paroxysms of hypertension	<0.5	Abnormal urinary catecholamine excretion (including norepinephrine, >80 µg/24 hr, and VMA, >5 mg/24 hr); plasma metanephrines; imaging studies (CT or MRI)	Alpha-adrenergic inhibitor; beta-blocker; surgical removal
Cushing's syndrome	Obesity; striae; muscle weakness; increased serum glucose level; fluid retention	<0.5	Increased levels of urinary cortisol (>55 µg/24 hr); positive results on a dexamethasone suppression test; imaging studies (CT or MRI)†	Surgical intervention
Hyperthyroidism or hypothyroidism	Tachycardia; weight loss; anxiety (in hyperthyroidism); weight gain; fatigue (in hypothyroidism)	1.0–3.0	Increased systolic blood pressure (hyperthyroidism); increased diastolic blood pressure (hypothyroidism)	Treatment of underlying disorders
Sleep apnea	Interrupted sleep; snoring; daytime somnolence; obesity	NA	Sleep studies	Weight loss; continuous positive airway pressure; possibly, aldosterone antagonists
Coarctation of the aorta	Brachial or femoral pulse differential; systolic bruits (back and chest)	<1.0	Echocardiography; imaging studies (CT or MRI)	Surgery; balloon angioplasty

\* ACE denotes angiotensin-converting enzyme, ARB angiotensin-receptor blocker, MRA magnetic resonance angiography, VMA vanillylmandelic acid, CT computed tomography, MRI magnetic resonance imaging, and NA not available.

† Positive results on a dexamethasone suppression test denote an absence of the lowering of plasma cortisol levels below 3 µg per deciliter after the administration of 1 mg of dexamethasone.

# Tratamiento

- Administrar varias drogas en un solo comprimido
- Utilizar diuréticos + frecuentemente por sobrecarga de volumen
- Tiazidas más efectivas en dosis de 12 a 25 mg con función renal normal
- Cr >1.5 o CI < 30-50 ml/min diuréticos de Asa
- Diuréticos de acción corta (Asa como Furosemida) deben ser administrados 2 a 3 veces por día
- Natriuresis intermitente estimula el sistema RATA
- Otra opción es la utilización de Torasemida que es de acción larga

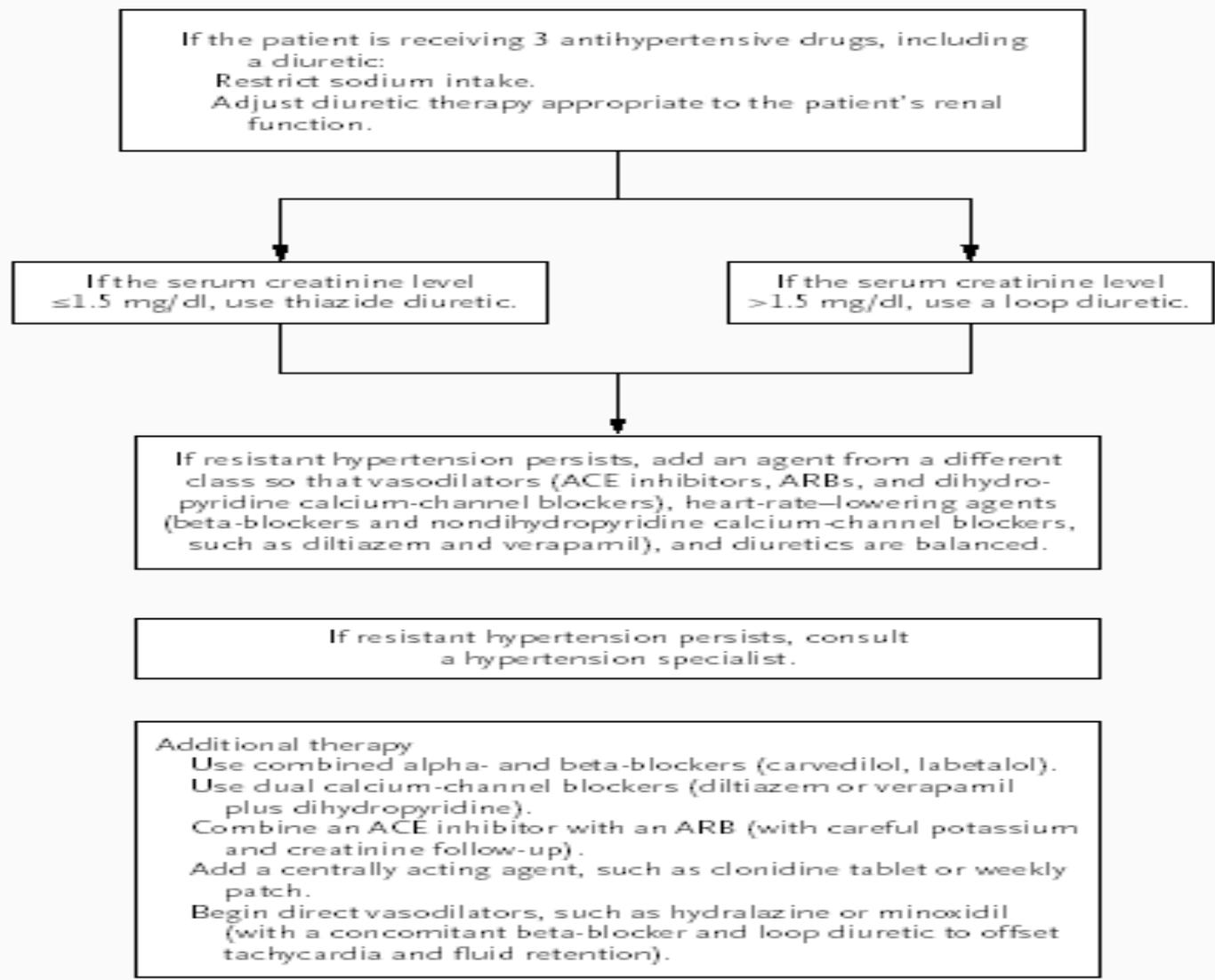
- Combinar agentes de distintas clases:

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- Ejemplos:

- Diuréticos + IECAS
- Diuréticos + Beta Bloq
- Diuréticos + AR II
- Diuréticos + Bloq Ca

- Se debe aumentar dosis, frecuencia o adicionar otra droga



**Figure 2. Optimization of Drug Therapy for Resistant Hypertension.** If resistant hypertension persists, patients can augment their therapy with an agent from a different class of drugs. For example, if the patient is receiving an angiotensin-converting-enzyme (ACE) inhibitor or an angiotensin-receptor blocker (ARB) plus a diuretic and a beta-blocker, a dihydropyridine calcium-channel blocker can be added. If the patient is receiving an ACE inhibitor or an ARB plus a diuretic and a dihydropyridine calcium-channel blocker, a beta-blocker can be added. The practitioner may consider adding an aldosterone antagonist to any of the combinations (but with extreme caution if the patient is receiving an ACE inhibitor or an ARB because of concern regarding hyperkalemia).

