

Prise en charge du patient hypertendu en 2021



www.swisshypertension.ch

Service de médecine de
premier recours
30.06.2021

Vignette clinique

Patient de 49 ans, fumeur, BMI 33 kg/m², consulte à votre cabinet. Vous mettez en évidence une TA à 133/86mmHg.

- Sur la base de cette valeur, le patient est-il hypertendu?
- Quel suivi de la TA proposez-vous?
- Comment affirmer/écarter le Dx d'HTA?

Blood Pressure Categories



BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)		DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120 – 129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130 – 139	or	80 – 89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120



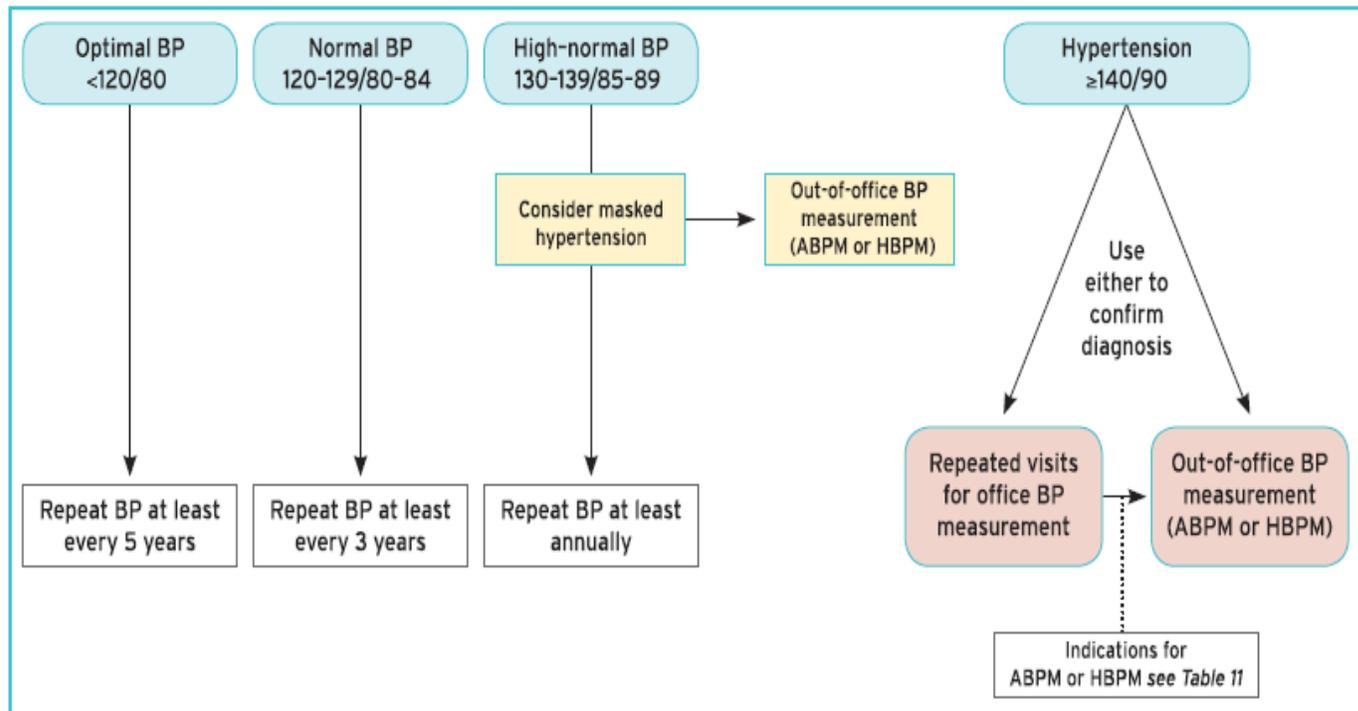
Category	Systolic (mmHg)		Diastolic (mmHg)
Optimal	<120	and	<80
Normal	120–129	and/or	80–84
High normal	130–139	and/or	85–89
Grade 1 hypertension	140–159	and/or	90–99
Grade 2 hypertension	160–179	and/or	100–109
Grade 3 hypertension	≥180	and/or	≥110
Isolated systolic hypertension ^b	≥140	and	<90

ISH Guidelines 2020

Category	Systolic (mm Hg)		Diastolic (mm Hg)
Normal BP	<130	and	<85
High-normal BP	130–139	and/or	85–89
Grade 1 hypertension	140–159	and/or	90–99
Grade 2 hypertension	≥160	and/or	≥100

Diagnostic de l'hypertension: Où, quand, comment?

Changes in recommendations	
2013	2018
Diagnosis Office BP is recommended for screening and diagnosis of hypertension.	Diagnosis It is recommended to base the diagnosis of hypertension on: <ul style="list-style-type: none"> Repeated office BP measurements; or Out-of-office BP measurement with ABPM and/or HBPM if logistically and economically feasible.



Définitions hypertension	
Cabinet de consultation	HTA si $\geq 140/90$ mmHg
MAPA moyenne jour	HTA si $\geq 135/85$ mmHg
MAPA moyenne de nuit	HTA si $\geq 120/70$ mmHg
MAPA moyenne de 24h	HTA si $\geq 130/80$ mmHg
Automesure	HTA si $\geq 135/85$ mmHg

MAPA Vs automesures

MAPA

- Détection HTA blouse blanche et masquée
- Valeur pronostique validée
- Mesures nocturnes, conditions «réelles»
- Evaluation phénotype de TA (dipping, variabilité, ...)

Mais

- Examen couteux
- Inconfortable

Automesures

- Détection HTA blouse blanche et masquée
- Bon marché, facilement accessible
- Engagement du patient
- Mesures sur plusieurs jours

Mais

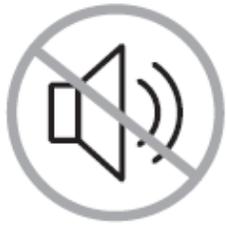
- Mesures statiques
- Erreurs de mesure → Instructions!
- Pas de mesures nocturnes

Automesures: Appareil validé, instruction/éducation, mesure 6-7 jours consécutifs, 2 fois matin, 2 fois le soir avant la consultation www.swisshypertension.ch

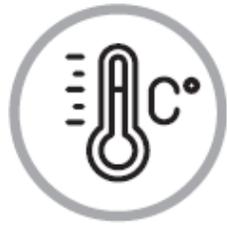
2021 European Society of Hypertension practice guidelines for office and out-of-office blood pressure measurement



**NO SMOKING,
CAFFEINE, FOOD,
EXERCISE 30MIN
BEFORE**



**QUIET
ROOM**



**COMFORTABLE
TEMPERATURE**



**3-5 MIN
REST**



**NO TALKING
DURING OR
BETWEEN
MEASUREMENTS**

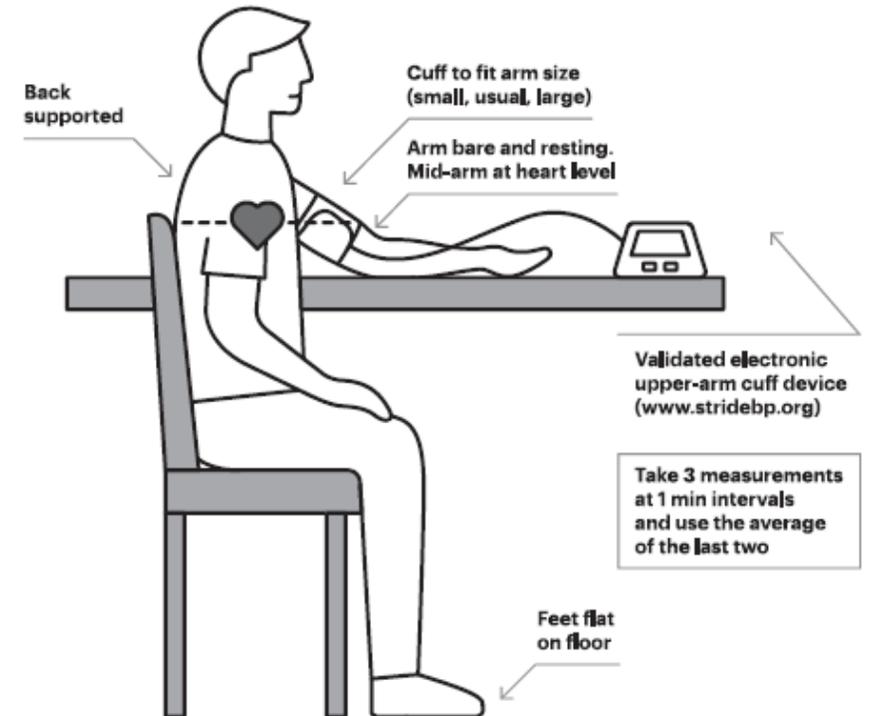


TABLE 4. Interpretation of average OBP (at least 2-3 visits with 2-3 measurements per visit)

	Normal-optimal BP (<130/85 mmHg)	High-normal BP (130–139/85–89 mmHg)	Hypertension Grade 1 (140–159/90–99 mmHg)	Hypertension Grade 2 and 3 (≥160/100 mmHg)
Diagnosis	Normotension highly probable	Consider MH	Consider WCH	Sustained hypertension highly probable
Action	Remeasure after 1 year (6 months in those with other risk factors)	Perform HBPM and/or ABPM. If not available confirm with repeated office visits		Confirm within a few days or weeks ^a . Ideally use HBPM or ABPM

^aTreat immediately if OBP is very high (e.g. ≥180/110 mmHg) and there is evidence of target organ damage or CVD.

Office BP	High	White-coat hypertension 15-25%	Sustained hypertension
	Low	Normotension	Masked hypertension 10-20%
		Low	High

Home or Ambulatory BP

TABLE 12. Clinical utility of office and out-of-office BP measurement methods

Clinical use	Office	Home	24 h ambulatory	Pharmacy
Screening	+++	+	-	++
Initial diagnosis	+	++	+++	-
Treatment titration	+	++	++	-
Follow-up	++	+++	+	+
Main indication	Screening of untreated individuals. Follow-up of treated patients	Long-term follow-up of treated patients (preferred method)	Initial diagnosis (preferred method)	Screening of untreated individuals. Follow-up of treated patients
Hypertension (mmHg)	≥140/90	≥135/85	≥130/80	≥135/85 (?)

Vignette clinique

Patient de 49 ans, fumeur, BMI 33 kg/m²

Au cabinet: TA 133/86mmHg, 138/91mmHg, 137/90mmHg

MAPA: HTA stade I

- Quels examens complémentaires pour ce patient hypertendu?

Bilan d'atteinte d'organe cible (screening de base)

Tests de base pour détecter AOC	Indication et interprétation
ECG 12-dérivations	Dépistage HVG et autres anomalies cardiaques FC, rythme
Rapport albumine/créatinine (spot)	Détection albuminurie indiquant possible maladie rénale
Créatinine plasmatique et eDFG	Détection maladie rénale
Examen fond d'oeil	Détection rétinopathie hypertensive, surtout dans les stade 2 et 3 d'hypertension

AOC: atteinte d'organe cible; HMOD: hypertension-mediated organe damage

Bilan d'atteinte d'organe cible (screening détaillé)

Examen	Indication et interprétation
Echocardiographie	Evaluation structure et fonction cardiaque, si cette information influence la décision de traiter
US doppler carotido-vertébral	Recherche plaques et sténoses carotidiennes, surtout si maladie cérébro-vasculaire ou autre atteinte vasculaire
US doppler rénal et abdominal	-Taille (asymétrie) et structure des reins (cicatrices) -Doppler artères rénales (sténose) -Recherche dilatation anévrysmale de l'aorte abdominale -Masse surrénalienne (CT, IRM)
PWV (vitesse onde de pouls)	Index de rigidité aortique et ATS sous-jacente
ABI (index bras cheville)	Recherche maladie artérielle périphérique
Test fonction cognitive	Evaluation fonction cognitive si symptômes suggestifs
Imagerie cérébrale	Recherche lésion ischémique ou hémorragique surtout si antécédents cérébro-vasculaires ou déclin cognitif

Importance d'évaluer le risque CV global

Risque très élevé

MCV documentée: Cardiopathie ischémique, revascularisation artérielle, AVC, AIT, anévrysme aortique, IAMI; plaques ATS significatives (sténose $\geq 50\%$)

DM II + AOC (protéinurie) / Dyslipidémie, HTA stade 3

Maladie rénale chronique sévère: DFG < 30 ml/min/1.73m²

SCORE à 10 ans $\geq 10\%$

Risque élevé

1 FR $\uparrow\uparrow$: cholestérol >8 mmol/l (ou familiale), HTA stade 3

DM II

Hypertrophie ventricule gauche

Maladie rénale chronique modérée: DFG 30-59 ml/min/1.73m²

SCORE à 10 ans 5 - 10%

Risque modéré

HTA stade 2, Sujets d'âge moyen

SCORE à 10 ans 1 - 5%

Risque faible

SCORE à 10 ans $< 1\%$

Other Risk Factors, HMOD, or Disease	High-Normal SBP 130–139 DBP 85–89	Grade 1 SBP 140–159 DBP 90–99	Grade 2 SBP ≥ 160 DBP ≥ 100	
No other risk factors	Low	Low	Moderate	High
1 or 2 risk factors	Low	Moderate	High	
≥ 3 risk factors	Low	Moderate	High	High
HMOD, CKD grade 3, diabetes mellitus, CVD	High	High	High	



Vignette clinique

Patient de 49 ans, fumeur, BMI 33 kg/m²

Au cabinet: TA 133/86mmHg, 138/91mmHg, 137/90mmHg

MAPA: HTA stade I

Bilan: absence d'atteinte d'organe, prédiabète

- Introduisez-vous un traitement antihypertenseur?
- Quelles valeurs tensionnelles visez-vous?

Seuils pour initier le traitement

Obtenir contrôle en 3 mois

FRCV, AOC, Maladie associée	Pression artérielle (mmHg)			
	Normale hte PAS 130-139 PAD 85-89	Stade 1 PAS 140-159 PAD 90-99	Stade 2 PAS 160-179 PAD 100-109	Stade 3 PAS ≥180 PAD ≥110
∅ autre FR	∅ TTT	MHD et TTT après 3-6 mois	MHD + TTT	MHD + TTT
1-2 FR	MHD ∅ TTT	MHD + TTT	MHD + TTT	MHD + TTT
≥ 3 FR	MHD ∅ TTT	MHD + TTT	MHD + TTT	MHD + TTT
AOC, MRC st. 3, DM II sans AOC	MHD + TTT	MHD + TTT	MHD + TTT	MHD + TTT
MCV, MRC st. ≥ 4, DM+ AOC	MHD + TTT	MHD + TTT	MHD + TTT	MHD + TTT

Sujets âgés

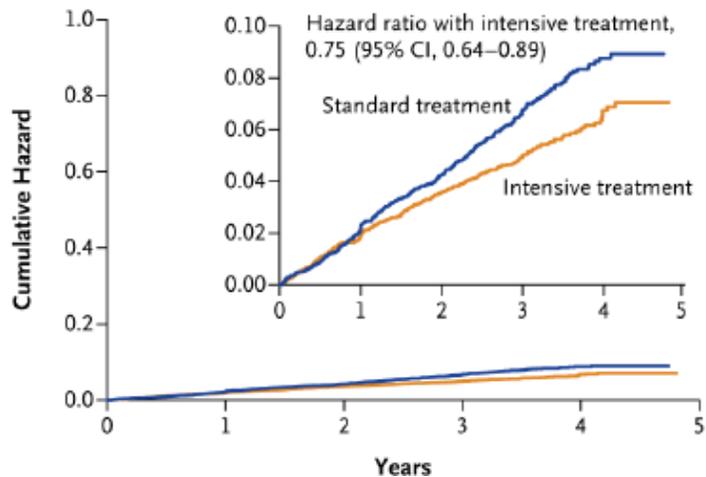
In fit older patients with hypertension (even if aged >80 years), BP-lowering drug treatment and lifestyle intervention are recommended when <u>SBP is >160 mmHg</u> . ^{210,220,221}	I	A
BP-lowering drug treatment and lifestyle intervention are recommended for fit older patients (>65 years but not >80 years) when SBP is in the grade 1 range (<u>140–159 mmHg</u>), provided that treatment is well tolerated. ²¹²	I	A
Antihypertensive treatment may also be considered in frail older patients if tolerated. ²¹⁵	IIb	B
Withdrawal of BP-lowering drug treatment on the basis of age, even when patients attain an age of ≥ 80 years, is not recommended, provided that treatment is well tolerated. ²¹³	III	A

Cibles tensionnelles - Etude SPRINT

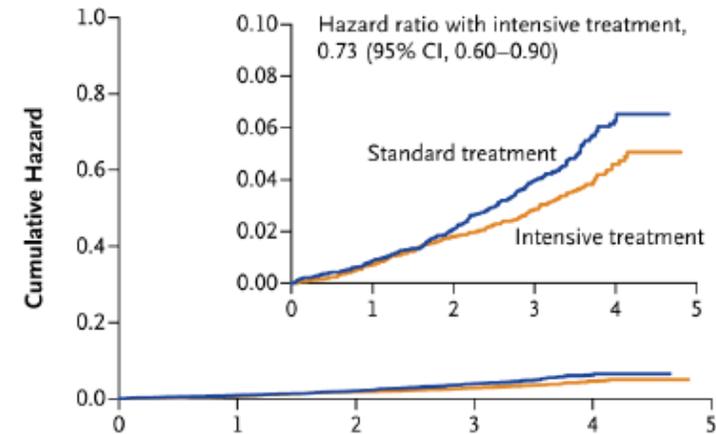
N= 9'000 à haut risque CV. Exclu diabétiques, antécédents d'AVC, DFG <20 ml/min/1.73 m².
Alloués 2 cibles TAS <140 vs <120 mmHg . Arrêt précoce

-0.25% endpoint primaire

IM non fatal+ sy coron. aigu + AVC + IC hosp + décès CV



-0.27% décès toute cause



Unattended measure of BP

→ les valeurs rapportées dans SPRINT ont été recalibrées à TAS 130-140 (intense) vs 140-150 (standard).

Cibles tensionnelles ESH 2018

Age group	Office SBP treatment target ranges (mmHg)					Office DBP treatment target range (mmHg)
	Hypertension	+ Diabetes	+ CKD	+ CAD	+ Stroke ^a /TIA	
18-65 years	Target to 130 or lower if tolerated Not <120	Target to 130 or lower if tolerated Not <120	Target to <140 to 130 if tolerated	Target to 130 or lower if tolerated Not <120	Target to 130 or lower if tolerated Not <120	70-79
65-79 years ^b	Target to 130-139 if tolerated	Target to 130-139 if tolerated	Target to 130-139 if tolerated	Target to 130-139 if tolerated	Target to 130-139 if tolerated	70-79
≥80 years ^b	Target to 130-139 if tolerated	Target to 130-139 if tolerated	Target to 130-139 if tolerated	Target to 130-139 if tolerated	Target to 130-139 if tolerated	70-79
Office DBP treatment target range (mmHg)	70-79	70-79	70-79	70-79	70-79	

CAD = coronary artery disease; CKD = chronic kidney disease (includes diabetic and non-diabetic CKD); DBP = diastolic blood pressure; SBP = systolic blood pressure; TIA = transient ischaemic attack.

^aRefers to patients with previous stroke and does not refer to blood pressure targets immediately after acute stroke.

^bTreatment decisions and blood pressure targets may need to be modified in older patients who are frail and independent.

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Cibles tensionnelles USA 2017

I	SBP: B-R ^{RR} DBP: C-EO	1. For adults with confirmed hypertension and known CVD or 10-year ASCVD event risk of 10% or higher (see Section 8.1.2), a BP target of less than 130/80 mm Hg is recommended (S8.1.5-1–S8.1.5-5).
IIb	SBP: B-NR DBP: C-EO	2. For adults with confirmed hypertension, without additional markers of increased CVD risk, a BP target of less than 130/80 mm Hg may be reasonable (S8.1.5-6–S8.1.5-9).

Cibles tensionnelles WHO 2021

RECOMMENDATION ON TARGET BLOOD PRESSURES

The WHO recommends a target blood pressure treatment goal of **<140/90 mmHg** in all patients with hypertension without comorbidities.

Strong recommendation, moderate-quality evidence

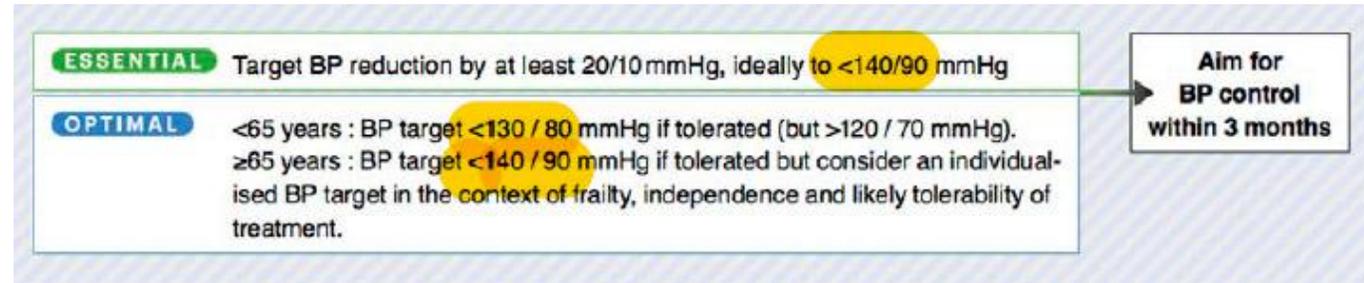
The WHO recommends a target systolic blood pressure treatment goal of **<130 mmHg** in patients with hypertension and known cardiovascular disease (CVD).

Strong recommendation, moderate-quality evidence

The WHO suggests a target systolic blood pressure treatment goal of **<130 mmHg** in high-risk patients with hypertension (those with high CVD risk, diabetes mellitus, chronic kidney disease).

Conditional recommendation, moderate-quality evidence

Cibles tensionnelles ISH 2020



Et les cibles hors cabinet?...

TABLE 11 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.

Vignette clinique

Patient de 49 ans, fumeur, BMI 33 kg/m²

Au cabinet: TA 133/86mmHg, 138/91mmHg, 137/90mmHg

MAPA: HTA stade I

Bilan: pas d'atteinte d'organe, prédiabète

- Quels conseils hygiéno-diététiques?
- Quel médicament introduisez-vous en premier?

Lifestyle interventions for patients with hypertension or high-normal BP

Recommendations	Class ^a	Level ^b
Salt restriction to <5 g per day is recommended. ^{2,48,250,253,258}	I	A
It is recommended to restrict alcohol consumption to: <ul style="list-style-type: none"> • Less than 14 units per week for men. • Less than 8 units per week for women.³⁵ 	I	A
It is recommended to avoid binge drinking.	III	C
Increased consumption of vegetables, fresh fruits, fish, nuts, and unsaturated fatty acids (olive oil); low consumption of red meat; and consumption of low-fat dairy products are recommended. ^{2,62,2,65}	I	A
Body-weight control is indicated to avoid obesity (BMI >30 kg/m ² or waist circumference >102 cm in men and >88 cm in women), as is aiming at healthy BMI (about 20–25 kg/m ²) and waist circumference values (<94 cm in men and <80 cm in women) to reduce BP and CV risk. ^{2,62,271,273,290}	I	A
Regular aerobic exercise (e.g. at least 30 min of moderate dynamic exercise on 5–7 days per week) is recommended. ^{26,2,278,279}	I	A
Smoking cessation, supportive care, and referral to smoking cessation programs are recommended. ^{2,86,288,291}	I	B

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BMI = body mass index; BP = blood pressure; CV = cardiovascular.

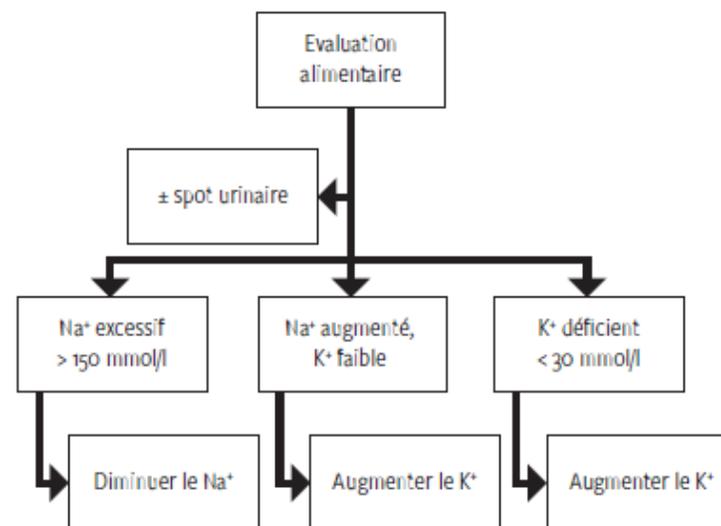
^aClass of recommendation.

^bLevel of evidence mostly based on the effect on BP and/or CV risk profile.

FIG 2

Recommandations alimentaires pour le contrôle de la PA

Adaptées au profil diététique du patient.



Aliments à teneur très élevée en potassium (> 12,5 meq/100 g)

- Fruits secs
- Noisettes
- Avocats
- Céréales de son
- Germes de blé
- Haricots secs

Aliments à teneur élevée en potassium (> 6,2 meq/100 g)

- Épinards
- Tomates
- Brocolis
- Courges
- Betteraves
- Carottes
- Choux-fleurs
- Pommes de terre
- Bananes
- Kiwis
- Oranges



European Society of Hypertension

Salt reduction	There is strong evidence for a relationship between high salt intake and increased blood pressure. ⁴⁷ Reduce salt added when preparing foods, and at the table. Avoid or limit consumption of high salt foods such as soy sauce, fast foods and processed food including breads and cereals high in salt.
Healthy diet	Eating a diet that is rich in whole grains, fruits, vegetables, polyunsaturated fats and dairy products and reducing food high in sugar, saturated fat and trans fats, such as the DASH diet (http://www.dashforhealth.com). ⁴⁸ Increase intake of vegetables high in nitrates known to reduce BP, such as leafy vegetables and beetroot. Other beneficial foods and nutrients include those high in magnesium, calcium and potassium such as avocados, nuts, seeds, legumes and tofu. ⁴⁹
Healthy drinks	Moderate consumption of coffee, green and black tea. ⁵⁰ Other beverages that can be beneficial include karkadé (hibiscus) tea, pomegranate juice, beetroot juice and cocoa. ⁴⁹
Moderation of alcohol consumption	Positive linear association exists between alcohol consumption, blood pressure, the prevalence of hypertension, and CVD risk. ⁵¹ The recommended daily limit for alcohol consumption is 2 standard drinks for men and 1.5 for women (10 g alcohol/standard drink). Avoid binge drinking.
Weight reduction	Body weight control is indicated to avoid obesity. Particularly abdominal obesity should be managed. Ethnic-specific cut-offs for BMI and waist circumference should be used. ⁵² Alternatively, a waist-to-height ratio <0.5 is recommended for all populations. ^{53,54}
Smoking cessation	Smoking is a major risk factor for CVD, COPD and cancer. Smoking cessation and referral to smoking cessation programs are advised. ⁵⁵
Regular physical activity	Studies suggest that regular aerobic and resistance exercise may be beneficial for both the prevention and treatment of hypertension. ^{56–58} Moderate intensity aerobic exercise (walking, jogging, cycling, yoga, or swimming) for 30 minutes on 5–7 days per week or HIIT (high intensity interval training) which involves alternating short bursts of intense activity with subsequent recovery periods of lighter activity. Strength training also can help reduce blood pressure. Performance of resistance/strength exercises on 2–3 days per week.
Reduce stress and induce mindfulness	Chronic stress has been associated to high blood pressure later in life. ⁵⁹ Although more research is needed to determine the effects of chronic stress on blood pressure, randomized clinical trials examining the effects of transcendental meditation/mindfulness on blood pressure suggest that this practice lowers blood pressure. ⁶⁰ Stress should be reduced and mindfulness or meditation introduced into the daily routine.
Complementary, alternative or traditional medicines	Large proportions of hypertensive patients use complementary, alternative or traditional medicines (in regions such as Africa and China) ^{61,62} yet large-scale and appropriate clinical trials are required to evaluate the efficacy and safety of these medicines. Thus, use of such treatment is not yet supported.
Reduce exposure to air pollution and cold temperature	Evidence from studies support a negative effect of air pollution on blood pressure in the long-term. ^{63,64}

Drug/Substance ⁶⁵⁻⁶⁷	Comments on Specific Drugs and Substances*
Nonsteroidal anti-inflammatory drugs (NSAIDs)	No difference or an increase of up to 3/1 mm Hg with celecoxib 3/1 mm Hg increase with nonselective NSAIDs No increase in blood pressure with aspirin NSAIDs can antagonize the effects of RAAS-inhibitors and beta blockers
Combined oral contraceptive pill	6/3 mm Hg increase with high doses of estrogen (>50 mcg of estrogen and 1–4 mcg progestin)
Antidepressants	2/1 mm Hg increase with SNRI (selective norepinephrine and serotonin reuptake inhibitors) Increased odds ratio of 3.19 of hypertension with tricyclic antidepressant use No increases in blood pressure with SSRI (selective serotonin reuptake inhibitors)
Acetaminophen	Increased relative risk of 1.34 of hypertension with almost daily acetaminophen use
Other medications	Steroids Antiretroviral therapy: inconsistent study findings for increased blood pressure Sympathomimetics: pseudoephedrine, cocaine, amphetamines Antimigraine serotonergics Recombinant human erythropoietin Calcineurin inhibitors Antiangiogenesis and kinase inhibitors 11 β -hydroxysteroid dehydrogenase type 2 inhibitors
Herbal and other substances ⁶⁸⁻⁶⁹	Alcohol, ma-huang, ginseng at high doses, liquorice, St. John's wort, yohimbine

Commencer le traitement avec une bithérapie!

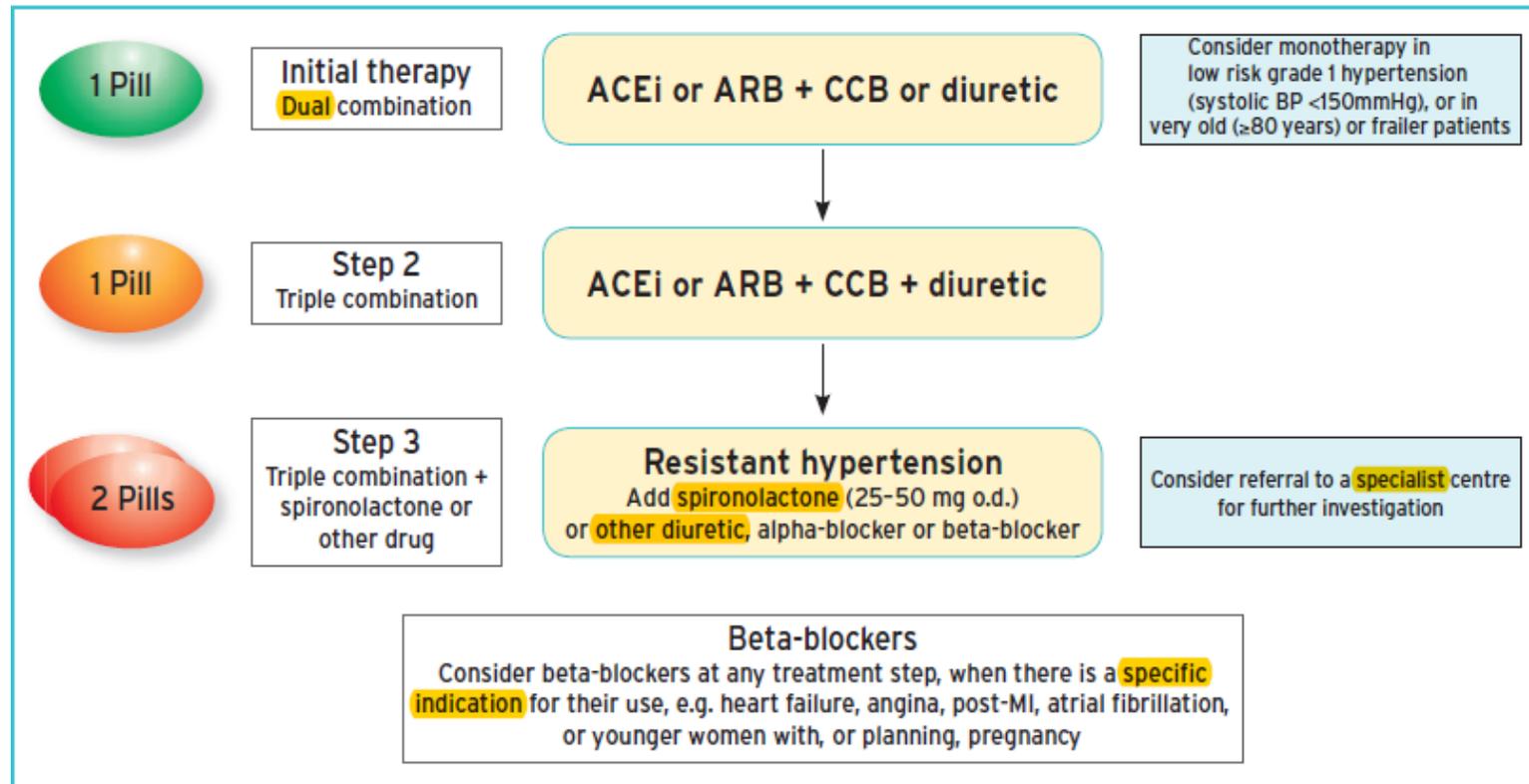
- Surtout si HTA st 2 ou si TA > 20/10 mmHg au-dessus de la cible
- De préférence en combinaison fixe, dans un seul comprimé
- Exceptions: personnes âgées, patients à bas risque CV et TA < 150 mmHg

→ Moins d'effets secondaires!

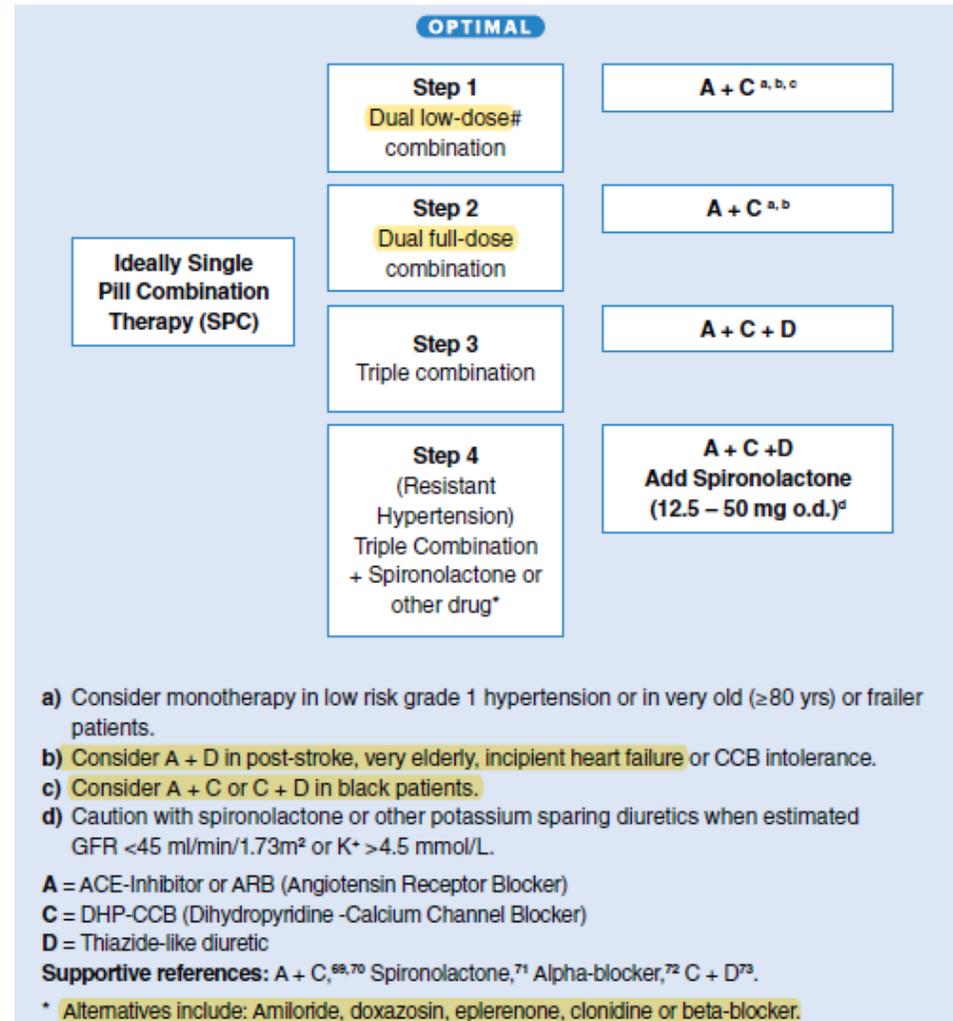
→ Meilleure observance!

→ TA cible atteinte plus rapidement!

ESH 2018: Algorithmme de traitement

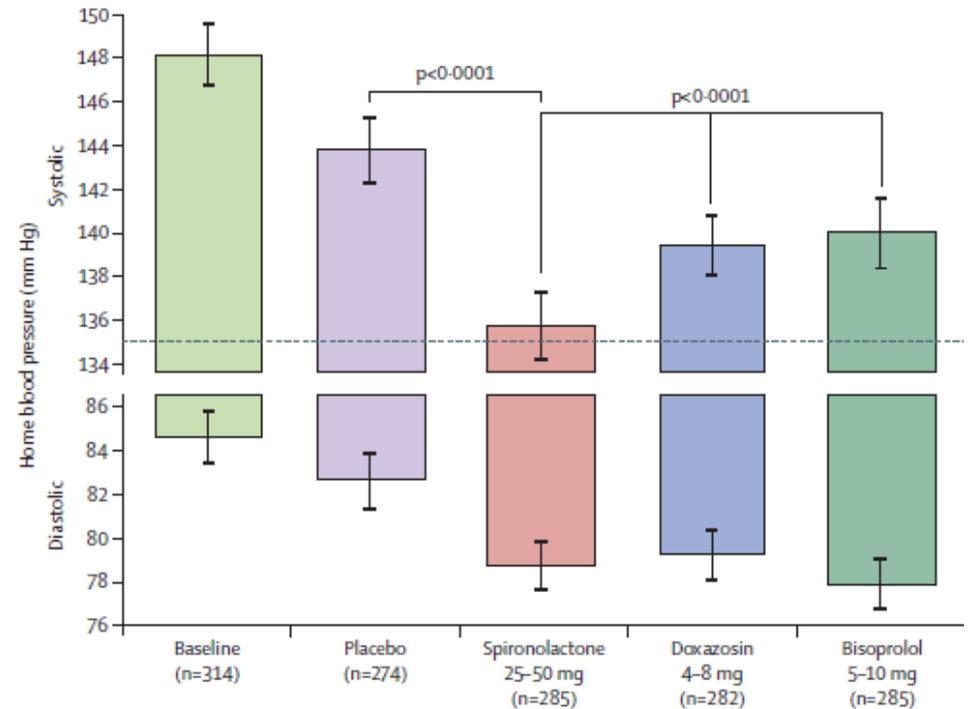


ISH 2020: Algorithme de traitement



Spironolactone versus placebo, bisoprolol, and doxazosin to determine the optimal treatment for drug-resistant hypertension (PATHWAY-2): a randomised, double-blind, crossover trial

- Sujets avec HTA résistante (sous 3ttt standard)
- Randomisés spironolactone, doxazosin, bisoprolol, placebo
- 280 patients dans chaque bras , cross over, rotation en aveugle



Sensibilité au sel, implications cliniques

Dans diverses pathologies : HTA résistante, insuffisance cardiaque, syndrome métabolique, maladies rénales chroniques

ET

Chez les sujets noirs

Sécrétion inappropriée d'aldostérone malgré une rétention hydrosodée

→HTA sensibles au sel!

→Diminution apport en sel/augmentation apports en potassium efficaces!!

→Diurétiques efficaces!!!

Lesquels? Tous...Thiazidiques et thiazidiques-like, diurétiques de l'anse si IRC avancée, spironolactone, amiloride

TABLE 3. Laboratory parameters

	Hydrochlorothiazide	Chlorthalidone	Indapamide SR
Laboratory parameters			
Serum potassium [29,52,59]	Decreased+	Decreased++	Decreased
Serum glucose [13,29,71]	Increased	Increased	Neutral
Serum lipids [13,29,71]	Increased	Mixed data	Neutral
Serum uric acid [29,52,59,71]	Increased	Increased +	Increased+
Renal function [29,71,72]	Decreased	Decreased	Neutral

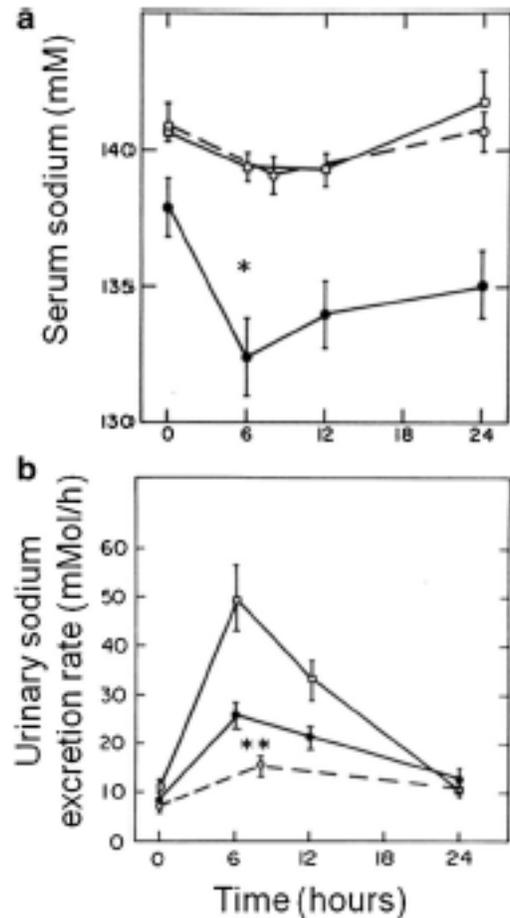
SR, sustained release. +, ++, +++ indicates the intensity of the variation from mild, moderate, intense.

TABLE 5. Differences in pathways that may mediate vasodilation

	Hydrochlorothiazide	Chlorthalidone	Indapamide
Effect on K _{Ca} channels [96,97]	+	ND	-
Desensitization to calcium via RhoA and Rho kinase [98]	+	+	ND
Calcium channel antagonism [99]	-	-	+
Carbonic anhydrase inhibition [100–103]	+	+++	++
Increase in urinary prostaglandins PGE2 and PGF2a [104,105]	ND	+	+
VEGF-C and TGF-β3 transcription decrease [106]	ND	+	ND
Oxidative stress reduction [107–109]	-	-	+
Platelet aggregation reduction [106,110]	-	+	+

K_{Ca}, potassium-activated calcium; ND, no data; PGE2, prostaglandin E2; PGF2a, prostaglandin F2alpha; TGF, transforming growth factor; VEGF, vascular endothelial growth factor.

Hyponatriémie et diurétiques thiazidiques



- Incidence 13-30%
- Peut être sévère
- FR: âge, sexe féminin, faible IMC
- Susceptibilité individuelle
- Eviter réintroduction, risque de réapparition rapide

ISH 2020, prise en charge des commorbidités

Additional Comorbidity	Recommended Drugs	Warning
Rheumatic disorders	<ul style="list-style-type: none">• RAS-inhibitors and CCBs±diuretics• Biologic drugs not affecting blood pressure should be preferred (where available)	High doses of NSAIDs
Psychiatric disorders	<ul style="list-style-type: none">• RAS-inhibitors and diuretics• Beta-blockers (not metoprolol) if drug-induced tachycardia (antidepressant, antipsychotic drugs).• Lipid-lowering drugs/ antidiabetic drugs according to risk profile	Avoid CCBs if orthostatic hypotension (SRIs)

Suivi du patient hypertendu

- Après instauration du traitement, revoir le patient min 1x dans les 2 premiers mois pour évaluer les effets du ttt
- On attend une réduction de la tension dans les 2 semaines, qui peut continuer à baisser dans les 2 mois
- Vérifier à 3 - 6 mois
- Bilan atteinte organes cible et FRCV 1x/2 ans minimum
- **HTA blouse blanche: BOC, suivi 1x/année, MHD**

Suivi de l'atteinte des organes cibles

Marker of HMOD	Sensitivity to changes	Reproducibility and operator independence	Time to changes	Prognostic value of the change
LVH by ECG	Low	High	Moderate (>6 months)	Yes
LVH by echocardiogram	Moderate	Moderate	Moderate (>6 months)	Yes
LVH by CMR	High	High	Moderate (>6 months)	No data
eGFR	Moderate	High	Very slow (years)	Yes
Urinary protein excretion	High	Moderate	Fast (weeks to months)	Moderate
Carotid IMT	Very low	Low	Slow (>12 months)	No
PWV	High	Low	Fast (weeks to months)	Limited data
Ankle-brachial index	Low	Moderate	Slow (>12 months)	Moderate

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Vignette clinique

Patient de 59 ans, fumeur, BMI 34 kg/m², dyslipidémie

Pour sa TA:

-combinaison fixe IEC/AC/diurétique

Reste hypertendu, TA cabinet 147/95mmHg, 143/93mmHg

- Proposition? Rajout spironolactone? Autre?

Parmi les patients hypertendus traités <50% atteignent la cible de < 140/90mmHg

Résistance **5-10%**

HTA résistante

- **Médicaments?** Drogues? Réglisse?
- Excès de **sel**? (rétention sodée, apport alimentaire riche en sel, IRC)

- **Hypertension 2ère?**
 - Patients jeunes, AF +
 - Atteinte d'organes disproportionnée à la durée/au niveau de l'HTA
 - élévation sévère de la TA, aggravation/début brutal
 - Absence de dipping nocturne
 - Hypokaliémie (aussi sous diurétiques), ATCD infections urinaires hautes
 - Éléments cliniques suggestifs de **SAOS**
 - HTA **gestationnelle** /PEC

HTA secondaire

Secondary Hypertension	Clinical History and Physical Examination	Basic Biochemistry and Urine Analysis	Further Diagnostic Tests
Renal parenchymal disease	<ul style="list-style-type: none"> Personal/familial history of CKD 	<ul style="list-style-type: none"> Proteinuria, hematuria, leukocyturia on dipstick urine analysis Decreased estimated GFR 	<ul style="list-style-type: none"> Kidney ultrasound
Primary aldosteronism	<ul style="list-style-type: none"> Symptoms of hypokalemia (muscle weakness, muscle cramps, tetany) 	<ul style="list-style-type: none"> Spontaneous hypokalemia or diuretic-induced hypokalemia on blood biochemistry (50%–60% of patients are normokalemic). Elevated plasma aldosterone-renin activity ratio 	<ul style="list-style-type: none"> Confirmatory testing (eg, intravenous saline suppression test) Imaging of adrenals (adrenal computed tomography) Adrenal vein sampling
Renal artery stenosis	<ul style="list-style-type: none"> Abdominal bruit Bruits over other arteries (ie, carotid and femoral arteries) Drop in estimated GFR >30% after exposure to ACE-inhibitors/ARBs For suspected atherosclerotic RAS, history of flash pulmonary edema or history of atherosclerotic disease or presence of cardiovascular risk factors For suspected fibromuscular dysplasia, young women with onset of hypertension <30 years 	<ul style="list-style-type: none"> Decrease in estimated GFR 	<ul style="list-style-type: none"> Imaging of renal arteries (duplex ultrasound, abdominal computed tomography or magnetic resonance angiograms depending on availability and patient's level of renal function)
Pheochromocytoma	<ul style="list-style-type: none"> Headaches Palpitations Perspiration Pallor History of labile hypertension 	<ul style="list-style-type: none"> Increased plasma levels of metanephrines Increased 24-hour urinary fractional excretion of metanephrines and catecholamines 	<ul style="list-style-type: none"> Abdominal/pelvic computational tomography or MRI

HTA secondaire

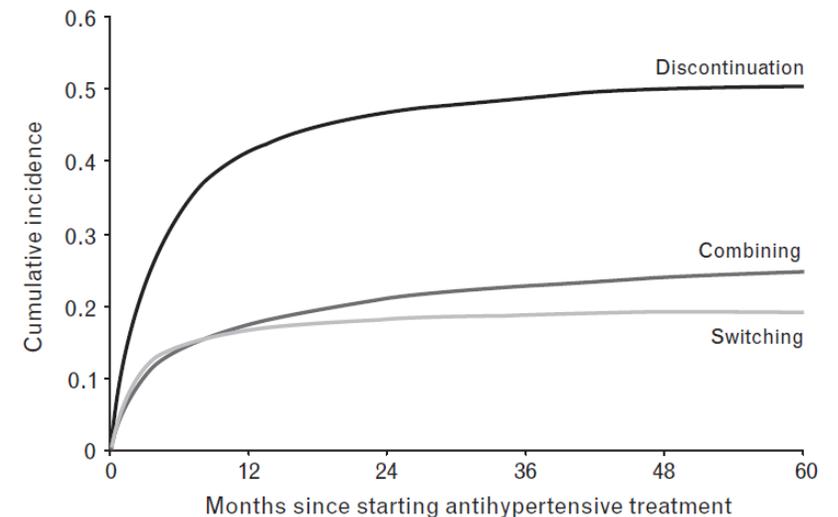
<p>Cushing's syndrome and disease</p>	<ul style="list-style-type: none"> • Central obesity • Purple striae • Facial rubor • Signs of skin atrophy • Easy bruising • Dorsal and supraclavicular fat pad • Proximal muscle weakness 	<ul style="list-style-type: none"> • Hypokalemia • Increased late-night salivary cortisol 	<ul style="list-style-type: none"> • Dexamethasone suppression tests¹¹⁸ • 24 hour urinary free cortisol • Abdominal/ pituitary imaging
<p>Coarctation of the aorta</p>	<ul style="list-style-type: none"> • Higher blood pressure in upper than lower extremities • Delayed or absent femoral pulses 		<ul style="list-style-type: none"> • Echocardiogram • Computational tomography angiogram • Magnetic resonance angiogram
<p>Obstructive sleep apnea</p>	<ul style="list-style-type: none"> • Increased BMI • Snoring • Daytime sleepiness • Gasping or choking at night • Witnessed apneas during sleep • Nocturia 		<ul style="list-style-type: none"> • Home sleep apnea testing (eg, level 3 sleep study) • Overnight polysomnography testing
<p>Thyroid disease</p>	<ul style="list-style-type: none"> • Symptoms of hyperthyroidism: heat intolerance, weight loss, tremor, palpitations • Symptoms of hypothyroidism: cold intolerance, weight gain, dry brittle hair 	<ul style="list-style-type: none"> • TSH, Free T4 	

Adhésion thérapeutique

- La 1^{ère} cause de résistance au traitement est la non adhésion médicamenteuse
- 57%: le taux d'adhésion thérapeutique 2 ans après l'instauration d'un ttt pour prévention CV
- 54% des patients qui se disent adhérents ont des taux sériques d'antihypertenseurs **indétectables...**
- Réduction de 37% du risque de complication CV avec la prise du traitement antiHTA, risque **proportionnel aux jours de prise du ttt**

Am J Hypertens 2006, Am J Med 2012, J Am Coll Cardiol 2014, J Hypertens 2011

Initial antihypertensive drug class ^b	Discontinuation
ACE inhibitors	1.00 (reference)
ARBs	0.92 (0.90-0.94)
CCBs	1.08 (1.06-1.09)
Diuretics	1.83 (1.81-1.85)
α -Blockers	1.23 (1.20-1.27)
β -Blockers	1.64 (1.62-1.67)



Corrao G et al, Journal of Hypertension 2008

Les concepts principaux

- Mesures tensionnelles hors cabinet
- Prise en charge de l'hypertension selon le RCV global
- Initier le ttt avec une bithérapie pour la majorité des patients
- Single pill strategy
- Algorithmes simplifiés de traitement
- Cibles tensionnelles selon âge et comorbidités
- Détection de la mauvaise observance

Merci de votre attention!

- ✓ eshonline.org
- ✓ www.swisshypertension.ch
- ✓ Stratégies SMPR: modalités pratiques HTA, Guide interprétation MAPA