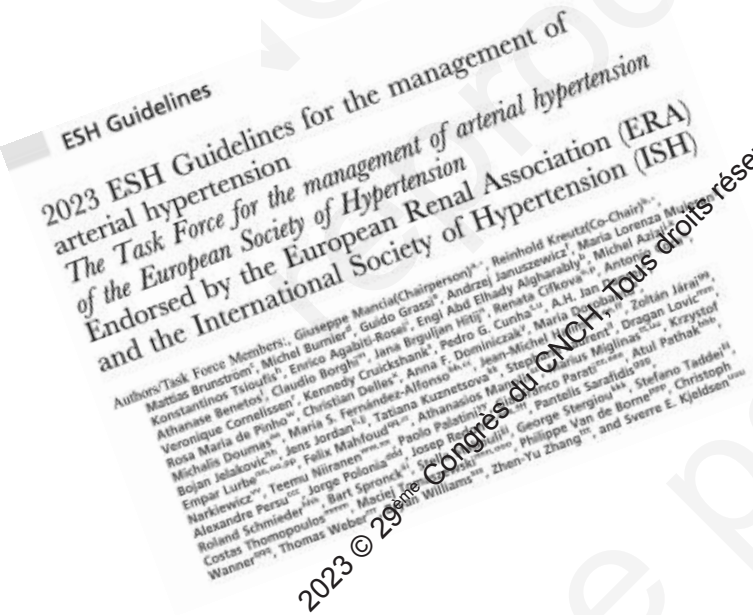
ESH Guidelines

2023 ESH Guidelines for the management of arterial hypertension

The Task Force for the management of arterial hypertension of the European Society of Hypertension

Endorsed by the European Renal Association (ERA) and the International Society of Hypertension (ISH)

Quoi de neuf dans la prise en charge de l'HTA après les nouvelles recommandations ESH 2023 ?

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DÉCLARATION DE LIENS D'INTÉRÊT POTENTIELS

Zenith pharma

Afric phar

Bottu

Sterifil

Pharma 5

Polymedic

Phi Kelix bio

Atlas pharm

Définitions de l’ HTA

- PA sup ou égale à 140/90 mmhg
- Sup où égale à 130/80 si Patient coronarien

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Méthodes de mesure

Recommendations and statements	CoR	LoR
Automatic electronic, upper-arm cuff devices are recommended for office and out-of-office BP measurement (home and ambulatory).	I	B
Hybrid manual auscultatory devices with LCD or LED display, or digital countdown, or shock-resistant aneroid devices can be used for office BP measurement if automated devices are not available.	I	B
Only properly validated devices should be used. www.stridebp.org	I	B
Cuffless BP devices should not be used for the evaluation or management of hypertension in clinical practice.	III	C

Prise de PA sans surveillance

- Patient seul en salle d' examen
- Sans présence médicale
- 3 prises automatiques
- Silence sans parler
- Chiffres tensionnels plus bas
- Eviter l'effet blouse blanche
- Faisabilité ???
- Efficacité du traitement démontrée dans la seule étude Sprint

La méthode surveillée reste la plus raisonnable et la plus pratique

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Mesure de la PA à l’ effort

- Pas de consensus sur les valeurs normales
- Plus élevée chez l’ homme , obésité abdominale , rigidité artérielle , sujet âgé
- fonction de la PA prétest
- Prédispose à l’ HTA permanente
- PA> 220 mmhg chez l’ Homme et > 200 mmhg chez la femme : surveiller , faire MAPA
- PA à l’effort sous max et plus intéressante en terme de pronostic que la PA au pique
- Hypotension à l’ effort : existence de maladie cardiaque

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Nouveaux FR Cardio-Vx

- Bruit et pollution de l’air
- Augmentent l’ inflammation et la dysfonction endothéliale
- Augmentent la PA
- Augmente les atteinte des organes cibles
- Augmentent la rigidité artérielle
- Réduire ces FRVx , réduit la PA et ses conséquences

HTA secondaire

Sténose des AR athéromateuse

Prevalence:
6–14%[a]

Suggestive symptoms, signs and findings

Resistant hypertension
Flash pulmonary edema
Rapidly declining kidney function
Acute renal function degradation on ACEI or ARB
Generalized atherosclerosis[b]

1st choice screening test

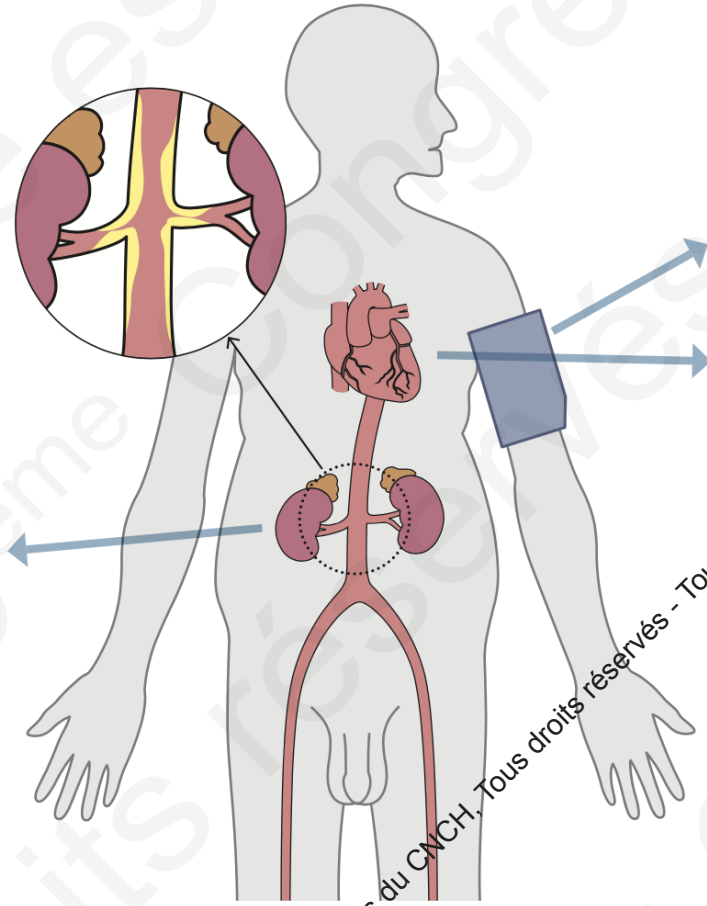
Renal artery duplex ultrasound; otherwise CT or MR-angiography

Further work-up

Angio-CT or angio-MR
Invasive catheter angiography

Treatment[c,d]

Antihypertensive treatment
Strict control of CV risk factors
Revascularization (selected cases)



Cardiovascular phenotype

24h ABPM – resistant hypertension, frequent non-reverse dipping

- LVH
- Decreased diastolic function
- Decreased systolic function

Increased CV Risk and mortality

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Sténose fibromusculaire des AR

Prevalence:
<1 to 6%[a]

Suggestive symptoms, signs and findings

Early-onset/ severe hypertension
Migraine
Pulsatile tinnitus

1st choice screening test[b]

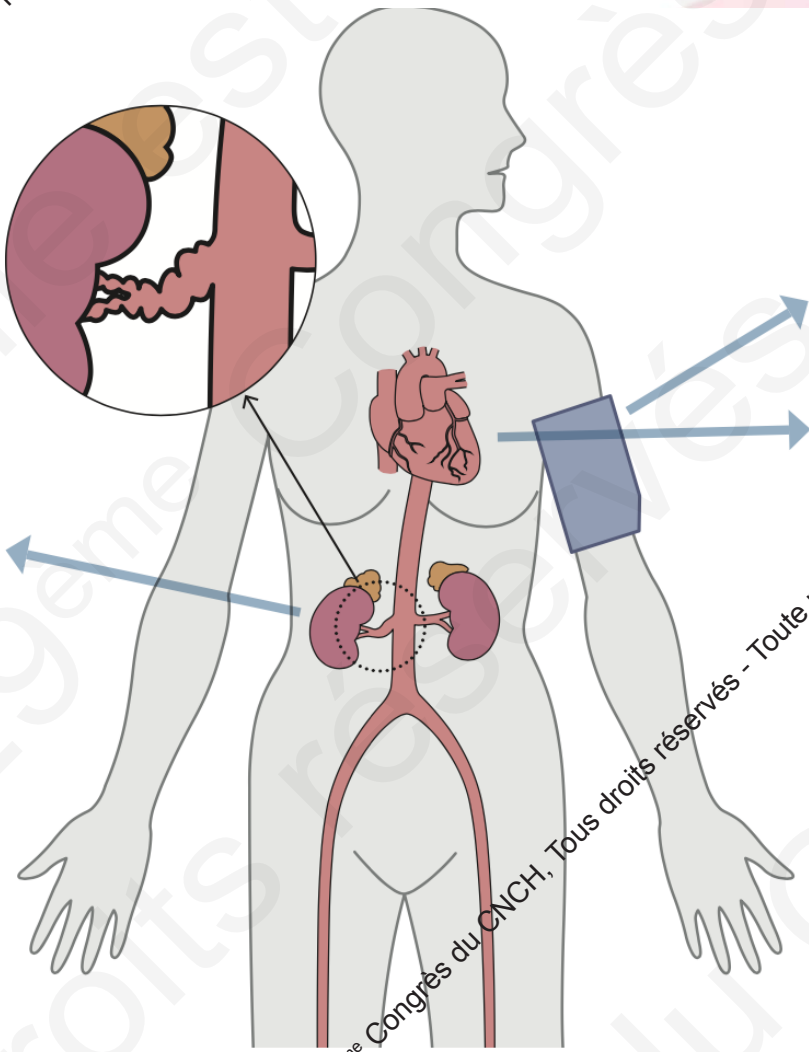
Renal artery duplex ultrasound; otherwise CT or MR-angiography

Treatment

Antihypertensive treatment
Angioplasty without stenting[c,d]

Follow-up

- Whole body CT- or MR-angiography at diagnosis[e]
- Indefinite follow-up



Cardiovascular phenotype

24h ABPM – early onset or resistant hypertension

Frequent in patients with Spontaneous Coronary Artery Dissection (SCAD)

May affect all medium sized arteries (most frequent: renal and cervical arteries)

Often associated with arterial dissections and aneurysms

Cardiovascular phenotype:
From asymptomatic to resistant hypertension, stroke, renal, mesenteric or myocardial infarction

Hyperaldostéronisme primaire

Prevalence:
6–20%[a]

Suggestive symptoms, signs and findings

- Resistant hypertension
- Grade 2 or 3 hypertension
- Hypokalemia/Potassium in the low-normal range
- Atrial fibrillation
- OSA
- Adrenal incidentaloma[b]
- Family history of PA/early stroke

1st choice screening test[c]

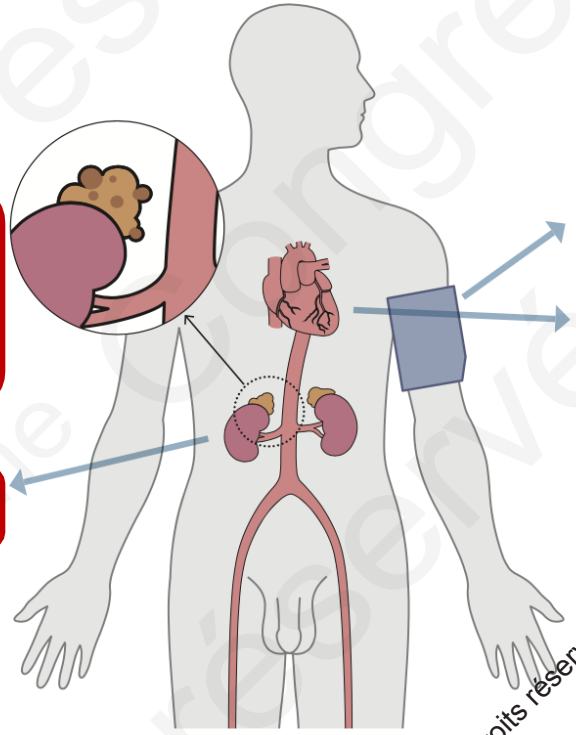
- Plasma aldosterone to renin ratio (ARR)

Further work-up[d]

- CT scanning
- IV saline infusion test (SIT)
- Fludrocortisone suppression test (FST)
- Oral sodium loading test (SLT)
- Captopril challenge test (CCT)
- Adrenal vein sampling
- Genetic testing in selected cases[e]

Treatment

- Surgical treatment (laparoscopic adrenalectomy) – unilateral PA
- Medical treatment – bilateral adrenal disease[f]



Cardiovascular phenotype

- 24 ABPM – true resistant hypertension, frequent non-reverse dipping
- LVH
- Decreased diastolic function
- Myocardial fibrosis (MRI)

Increased CV Risk and mortality

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Cushing

Prevalence: 2–5%[a]

Suggestive symptoms and signs

- Resistant hypertension
- Easy bruising, facial plethora, ‚moon' face, skin thinning
- Proximal myopathy
- Weight gain with centripetal distribution of body fat
- Diabetes mellitus

1st choice screening test[b]

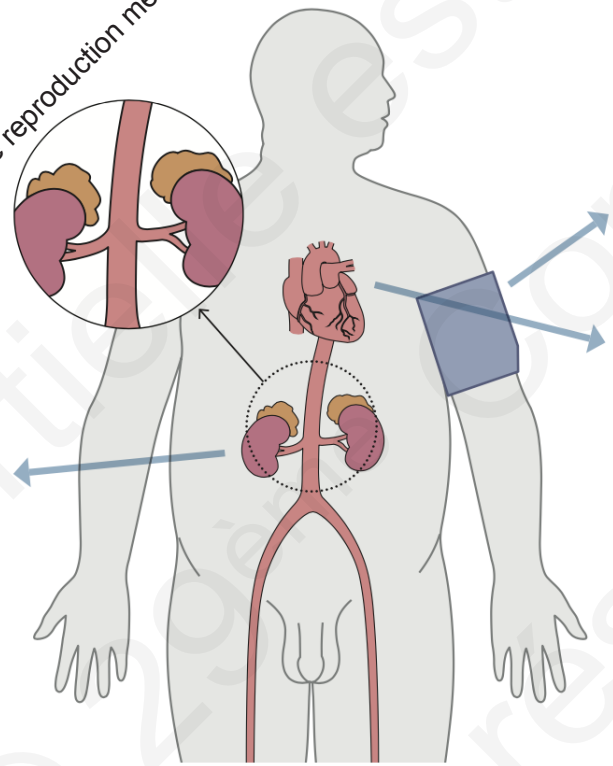
- Overnight 1 mg dexamethasone suppression test
- 24-h urinary free cortisol
- Late-night salivary cortisol

Further work-up

- Morning plasma ACTH
- ACTH stimulation by CRH or desmopressin
- CT

Treatment

- Medical – normalization of cortisol levels
- Surgical – first line treatment for Cushing's disease , ectopic Cushing's syndrome and ACTH-independent hypercortisolism



Cardiovascular phenotype

24h ABPM – frequent non-reverse dipping
Short-term BP variability

- LVH
- Decreased systolic function
- Decreased diastolic function

Increased CV Risk and mortality

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Phéochromocytome et paraganglioiome

Prevalence:
<1%[a]

Suggestive symptoms and signs[b]

- paroxysmal symptoms (such as headache, sweating, palpitation, increased HR)
- large BP variation
- CV manifestations (eg, MI, arrhythmias, Takotsubo cardiomyopathy)

1st choice screening test

Plasma or urinary free metanephrines

Further work-up

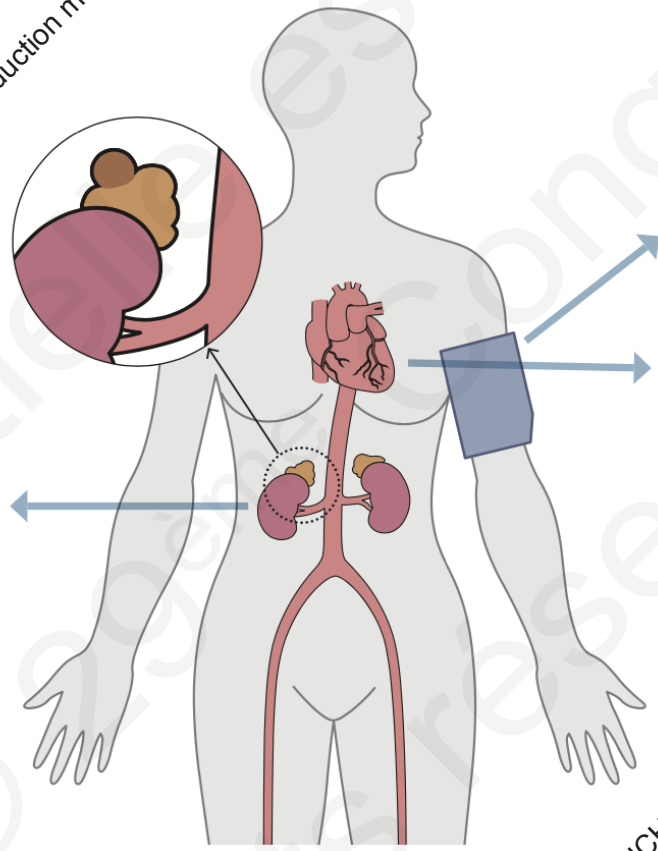
Contrast enchanced CT or MRI
Functional imaging
Genetic testing[c]

Treatment[d]

Surgical resection
(Pheochromocytoma: minimally invasive laparoscopic adrenalectomy)

Follow-up[e]

In most cases > 10 yrs



Cardiovascular phenotype

24h ABPM – frequent non-reverse dipping

- LVH
- Decreased systolic function
- Myocardial fibrosis (MRI)

Increased CV Risk and mortality

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Prise en charge thérapeutique

Augmenter l’ apport en potassium

- Supplémentation adéquate : 75-125 mmol/J
- Baisse de la PA : adulte avec HTA , consommation élevée de Na , Race noire
- Pilule de K+ où alimentation riche en potassium
- Fruits et légumes , produits pauvres en matières grasses

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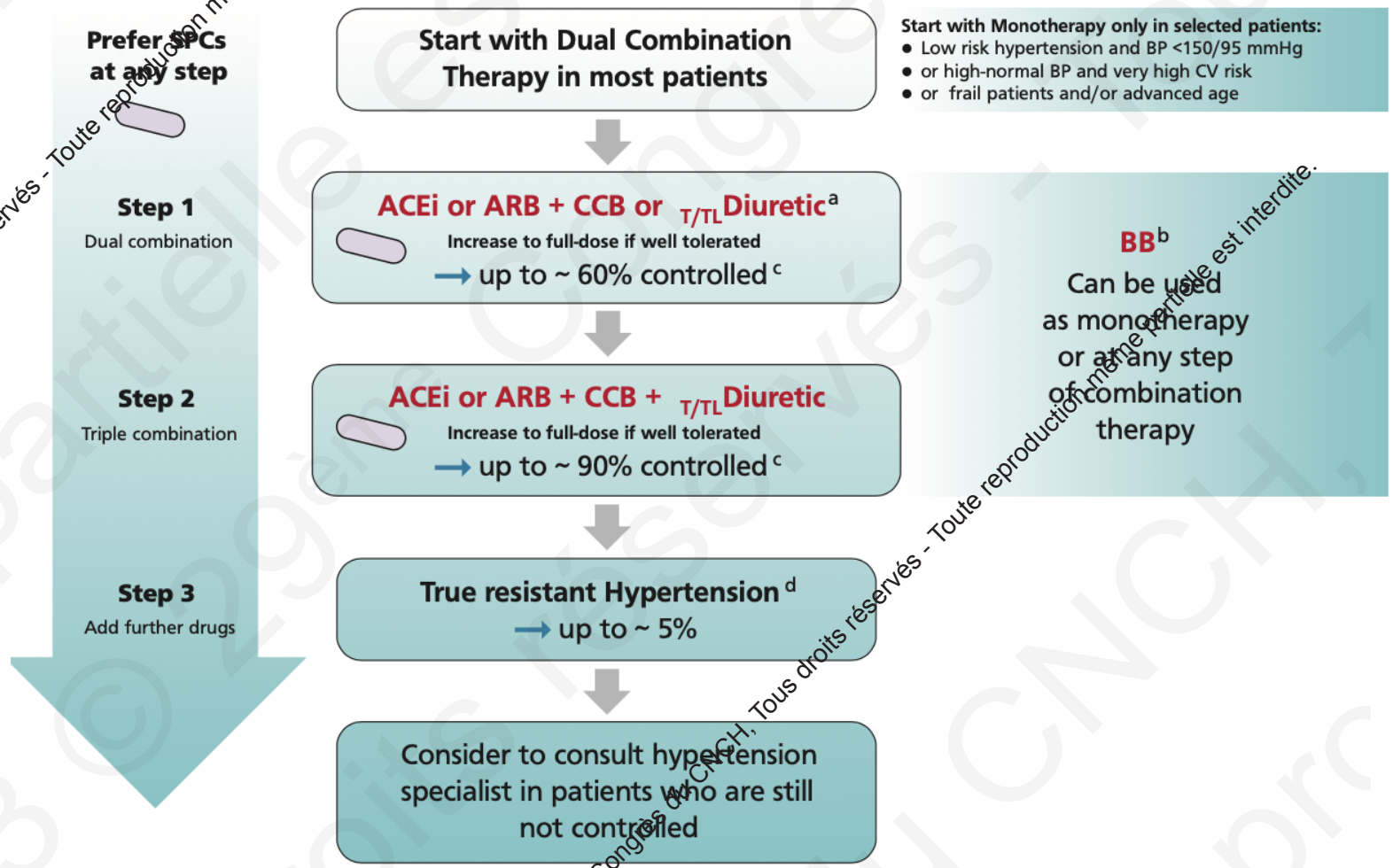
Les chiffres tensionnels pour démarrer un traitement

Recommendations and statements	CoR	LoE
In patients 18 to 79 years, the recommended office threshold for initiation of drug treatment is 140 mmHg for SBP and/or 90 mmHg for DBP.	I	A
In patients ≥80 years, the recommended office SBP threshold for initiation of drug treatment is 160 mmHg.	I	B
However, in patients ≥80 years a lower SBP threshold in the range 140 – 160 mmHg may be considered.	II	C
The office SBP and DBP thresholds for initiation of drug treatment in frail patients should be individualized.	I	C
In adult patients with a history of CVD, predominantely CAD, drug treatment should be initiated in the high-normal BP range (SBP ≥130 or DBP ≥80 mmHg).	I	A

Traitement médicamenteux de l’ HTA



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La vraie HTA résistante

- Diurétique + IC + ISRA à dose optimale où à meilleure dose tolérée
- MAPA où Automesure

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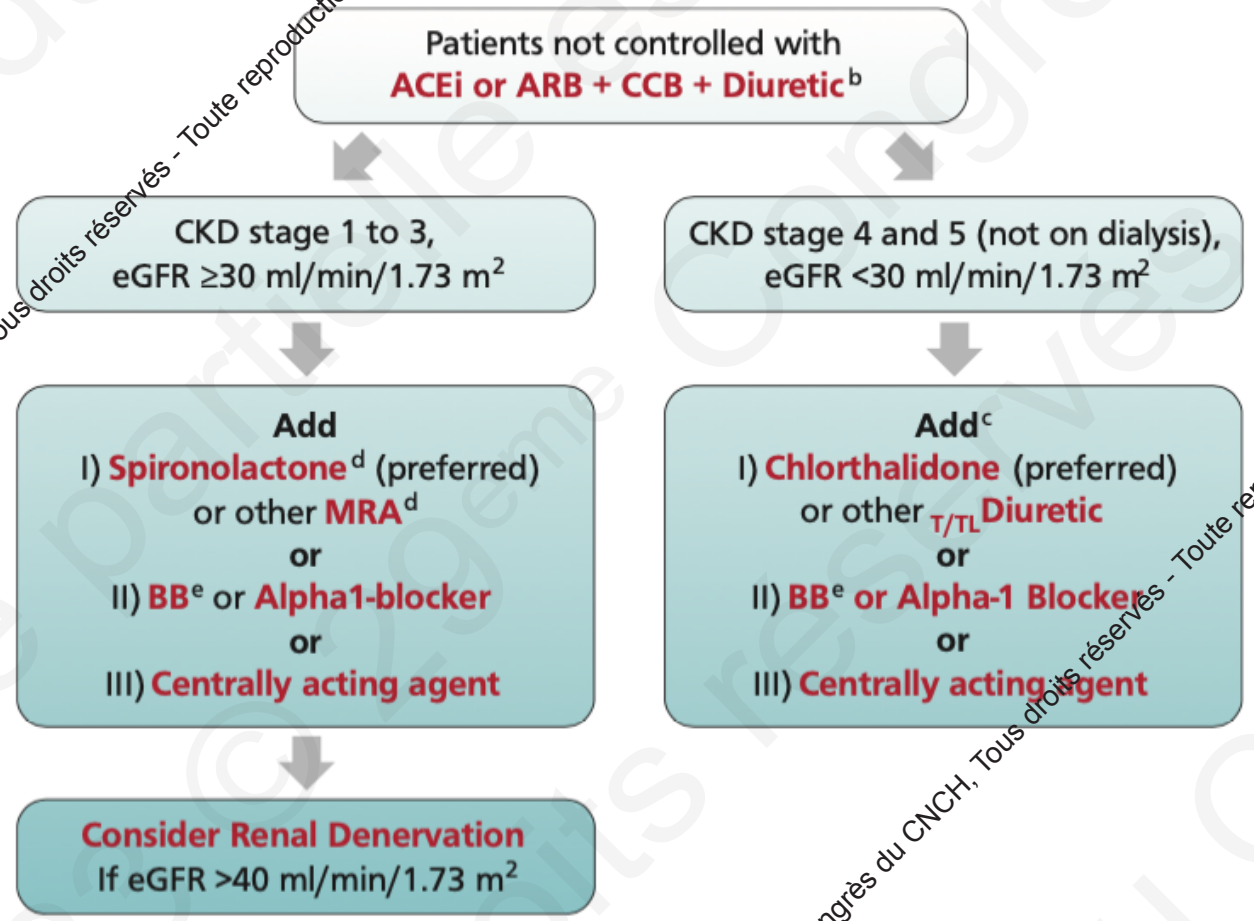
La vraie HTA résistante



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La dénervation rénale un regain d' intérêt

Recommendations and statements	CoR	LoE
RDN can be considered as a treatment option in patients an eGFR >40 ml/min/1.73m² who have uncontrolled BP despite the use of antihypertensive drug combination therapy, or if drug treatment elicits serious side effects and poor quality of life.	II	B
RDN can be considered as an additional treatment option in patients with resistant hypertension if eGFR is >40 ml/min/1.73m².	II	B
Selection of patients to whom RDN is offered should be done in a shared decision-making process after objective and complete patient's information.	I	C
Renal denervation should only be performed in experienced specialized centers to guarantee appropriate selection of eligible patients and completeness of the denervation procedure.	I	C

HTA et IC

Treatment of hypertension is recommended to effectively prevent heart failure.	I	A
Hypertension treatment with all major antihypertensive drug classes, including ACEis, ARBs, BBs, CCBs and Thiazide/Thiazide-like diuretics, can be used for the prevention of heart failure.	I	A
Alpha-1 blockers (e.g. doxazosin) can be used for the prevention of heart failure in hypertension, preferably in combination with Thiazide/Thiazide-like diuretics and BBs to avoid fluid retension and tachycardia.	I	B
SGLT2is should be used for the prevention of heart failure in patients with type-2 diabetes.	I	A

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HTA et FA

At least three office BP measurements by auscultation are recommended in patients with AF to account for the varying BP values.	I	B
Automated oscillatory methods can be used for BP measurement in patients having AF, because they satisfactorily measure SBP and only modestly overestimate DBP.	II	B

RAS-blockers and BBs may be considered in patients with AF to prevent recurrent AF.	II	B

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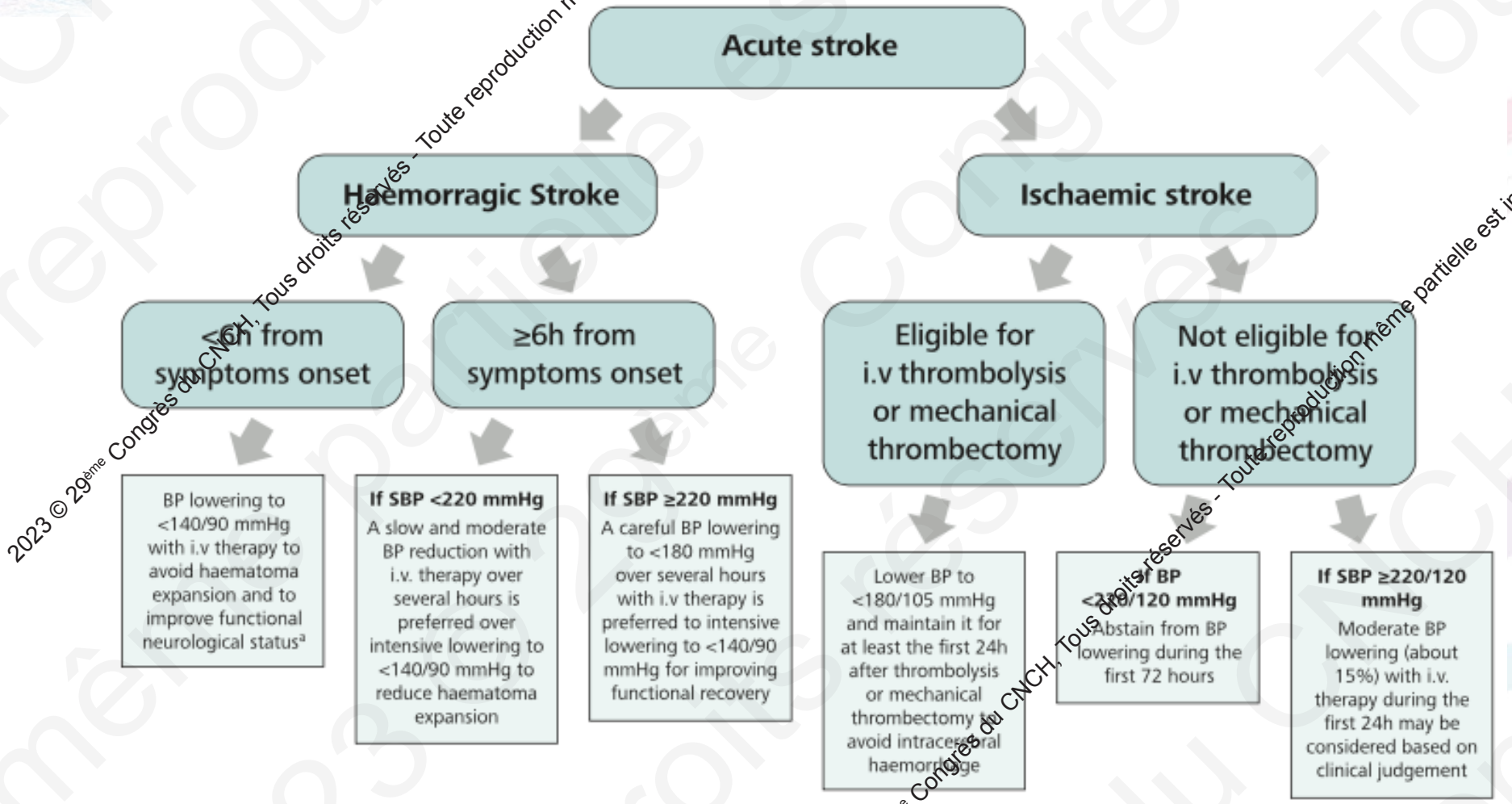
HTA et AVC



HTA et DT2

Non-dipping or elevated night-time BP are frequent in type 2 diabetes and should be monitored by ABPM or HBPM.	I	B

Drug treatment strategies in patients with type 2 diabetes should be the same as for patients without diabetes but the primary aim is to lower BP below <130/80 mmHg	I	A

SGLT2is are recommended to reduce cardiac and kidney events in type 2 diabetes. These agents have a BP lowering effect.	I	A

The non-steroidal MRA finerenone can be used, because of its nephroprotective and cardioprotective properties in patients with diabetic CKD and moderate to severe albuminuria. Finerenone has a BP lowering effect.	I	A

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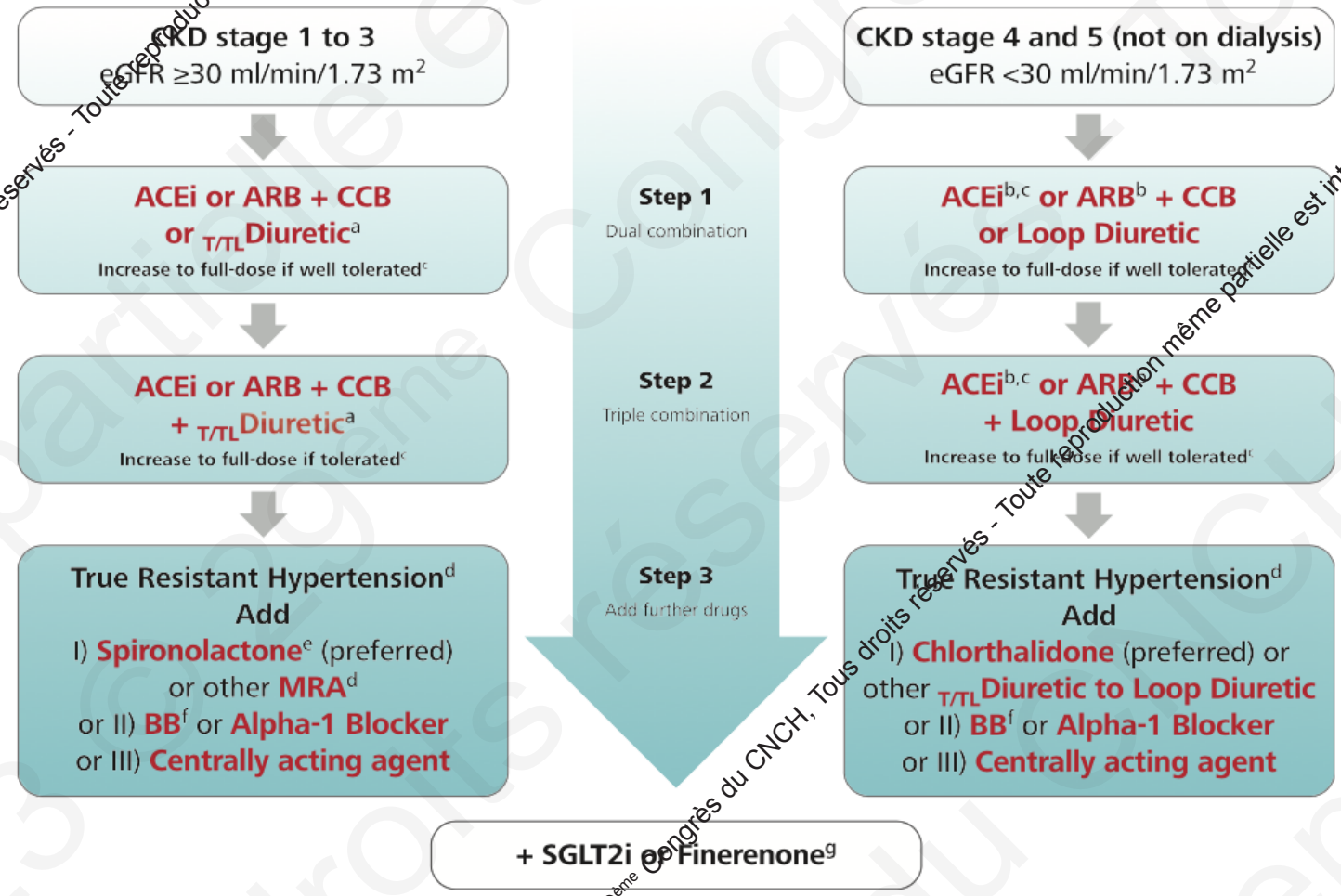
HTA et atteinte rénale



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HTA du sujet jeune

Due to the frequent presence of a pronounced white-coat effect, out-of-office BP measurement is recommended.	I	C
Central BP measurement can be considered to identify ISHY individuals at low CV risk to detect spurious hypertension, if available.	II	C
Close follow-up and lifestyle interventions are recommended.	I	C
In individuals with high out-of-office BP or high central BP, particularly with other CV risk factors or HMOD, BP lowering drug treatment can be considered.	II	C

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HTA diastolique isolée

Periodic BP evaluation and lifestyle interventions are recommended for all patients with IDH.	I	C
Despite the absence of dedicated RCTs in IDH, it is recommended that the BP lowering drug treatment should follow the general treatment strategy.	IIa	C

HTA et traitement anti cancéreux

Drug class	Selected example drugs	Selected malignancies	Potential mechanisms	Hypertension	Comments
VEGF inhibitors	Axitinib, Bevacizumab, Cabozantinib, Dasatinib, Lenvatinib, Nilotinib, Pazopanib, Ponatinib, Ramucirumab, Regorafenib, Sorafenib, Sunitinib, Tivozanib, Vandetanib	Renal, hepatocellular, thyroid, gastrointestinal stromal cancer	↑Endothelin-1 bioavailability ↓ NO bioavailability Oxidative stress Endothelial dysfunction Microvascular rarefication ↓Lymphangiogenesis Kidney injury	**[illegible]0%-90%**	
Bruton TK inhibitors	Acalabrutinib, Ibrutinib	Chronic lymphocytic leukemia, mantle cell lymphoma	↓Heat shock protein ↓NO bioavailability	**71%**	Long-term effects
Platinum-based compounds	Carboplatin, Cisplatin, Oxaliplatin	Mesothelioma, testicular, bladder, gynaecological, colorectal, and lung cancers	↓NO bioavailability Endothelial dysfunction Kidney injury	**53%**	Long-term effects
Alkylating compounds	Busulfan, Cyclophosphamide, Ifosfamide	Haematologic and solid organ malignancies	↓VEGF bioavailability and vascular/kidney toxicity (Cyclophosphomide)	**36% in adults 15%-58% in children**	Possible confounding by concomitant use of glucocorticoids; long-term effects
Calcineurin inhbitors	Cyclosporin, Tacrolimus	After stem cell transplantation	↑Vasoconstriction (↑RAS and Endothelin-1) ↓NO bioavailability ↑SNS	**30%–60%**	Long-term effects
Proteasome inhibitors	Bortezomib, Carfilzomib	Multiple myeloma	↓NO bioavailability Endothelial dysfunction	**10%-32%**	
BRAF/MEK inhibitors	Binimetinib, Cobimetinib, Dabrafenib, Encorafenib, Trametinib, Vemurafenib	Melanoma, colorectal cancer	CD47 upregulation ↓cGMP, ↓NO Endothelial dysfunction	**19.5%**	
RET kinase inhibitors	Pralsetinib, Selparcatinib, Vandetanib	Thyroid, non–small cell lung cancer	CD47 upregulation ↓cGMP, ↓NO Endothelial dysfunction	**21%-43%**	
PARP inhibitors	Niraparib, Olaparib[a]	Breast, ovarian cancer	Inhibition of dopamine, norepinephrine, and serotonin re-uptake	**19%**	
mTOR inhibitors	Everolimus, Sirolimus	Renal cell, breast, PNET cancer	↓VEGF bioavailability	**No data**	
Androgen synthesis inhibitors	Abiraterone	Metastatic prostate cancer Prostate cancer	Mineralocorticoid activity of accumulated steroid precursors	**26%**	
Androgen receptor blockers	Enzalutamide	Metastatic prostate cancer	Unknown	**11%**	

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HTA et patient cancéreux

In patients with cancer, the same definition of hypertension, thresholds, targets, lifestyle interventions and drug treatment strategies are recommended as for the general hypertension population.	I	C
In patients with uncontroilled hypertension and BP values ≥180 mmHg for systolic and/or ≥110 mmHg for diastolic BP, it is not recommended to initiate anticancer therapy.	III	C
In patients with uncontrolled hypertension and BP values ≥180 mmHg for systolic and/or ≥110 mmHg for diastolic BP, measures to control BP and symptoms should be initiated by team-based multidisciplinary care to allow initiation of anticancer therapy as early as possible.	I	C
Thiazide/Thiazide-like diuretics may be used only if needed for BP control and in patients with fluid retention, because of their potential to cause unwanted effects in cancer patients including increases in serum calcium concentration in patients with bone metastasis, increased risk of cardiac arrhythmias due to prolonging the QT interval by inducing hypokalaemia, increase the risk of hyponatremia, and potential worsening of hypovolaemic states or dehydration.	II	C
Non-DHP CCBs should be avoided in cancer patients who are treated with anticancer drugs that are susceptible to pharmacokinetic interactions mediated by CYP3A4 and/or P-gp.	III	B
Hypertension induced by VEGF inhibitors may be treated with either RAS-inhibitors (ACEis or ARBs) or DHP-CCBs.	II	B
In severely ill cancer patients, treatment of hypertension should be individualised according to symptoms, comorbidities and polypharmacy in a shared-decision making process.	I	C

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conclusion

- HTA : problème de santé publique
- Prise en charge personnalisée
- HTA secondaire : plus fréquente , bilan plus élargi
- HTA résistantes: Tenir compte du DFG
- Dénervation rénale: Une option réadmise +++
- Attention à l' HTA chez le patient cancéreux !!!
- Ne pas oublier les iSGLT2 et la FIINERENONE

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