Management of hypertension in the community

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Specialists in Family Medicine Update

Heart Failure Awareness Week 2025

Conflicts of interest

- None

ESC European Society of Cardiology
European Heart Journal (2024) **45**, 3912–4018
https://doi.org/10.1093/eurheartj/ehae178

ESC GUIDELINES

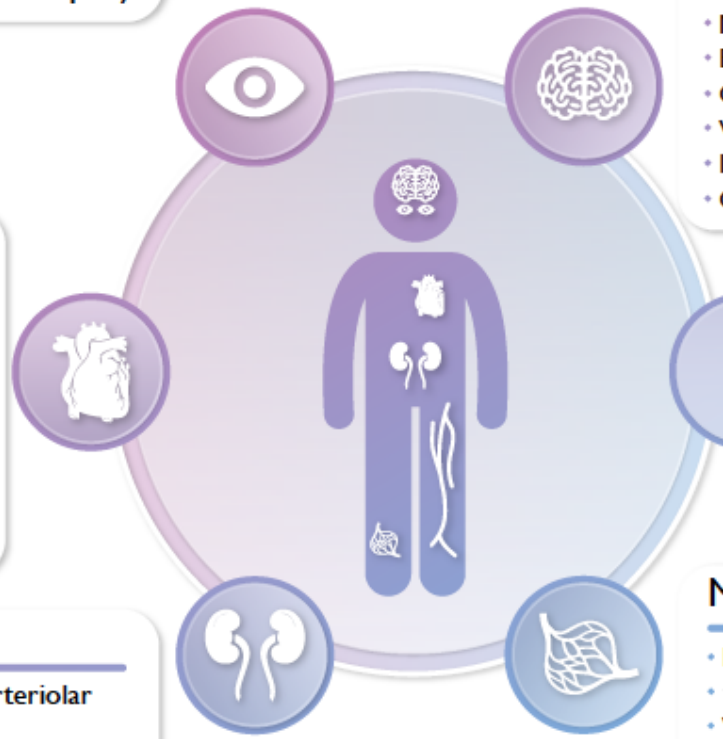
2024 ESC Guidelines for the management of elevated blood pressure and hypertension

Why?

When?

How?

Hypertension-mediated organ damage



Eye
- Microvascular remodelling
- Hypertensive retinopathy

Brain
- White matter lesions
- Silent microinfarcts
- Microbleeds
- Brain atrophy
- Cognitive impairment
- Vascular dementia
- Ischaemic stroke
- Cerebral haemorrhage

Heart
- LVH
- LA and LV dilatation
- AF
- Obstructive and non-obstructive CAD
- Myocardial Infarction
- Diastolic and/or systolic heart failure

Large and medium arteries
- Atherosclerosis
- Vascular calcification
- Arterial stiffness

Kidney
- Glomerular arteriolar hypertension
- Glomerulosclerosis
- Albuminuria/Proteinuria
- ↓GFR

Microcirculation
- Endothelial dysfunction
- ↑Vasoreactivity
- Vascular remodelling
- Fibrosis and inflammation
- ↑Peripheral vascular resistance

See footnote for information on sex-differences

We need you!

Mr S Claus

- 73yr old male
- Active & fully independent
- No regular R_x

- GP check-up after a long time = **160/95mmHg**
- Told to exercise + lose weight
- Comes back 2 weeks later = **BP unchanged**

What is your BP lowering treatment advice?

Mr Sel Fie

- 50yr old male
- T1DM since mid-teens
- Gym classes 5 times/week; healthy diet
- GP checks every 6 months
- Latest bloods:
  - HbA1c = 6.9%
  - TC = 5.0mmol/l; HDL = 0.5mmol/l
  - eGFR = 90ml/min/1.73m^2
- BP in clinic = **132/80mmHg**

What is your BP lowering treatment advice?

Ms Mildred

- 83yr old spinster
- Lives alone in an old 2-storey house
- Recently tripped in a carpet – sprained her ankle!
- On no R_x
- Rarely goes to the doctor!

- BP = **170/100mmHg** (similar after 2 weeks)

What is your BP lowering treatment advice?

Diagnosing elevated BP / hypertension

OPPORTUNISTIC BLOOD PRESSURE CHECKS!!!

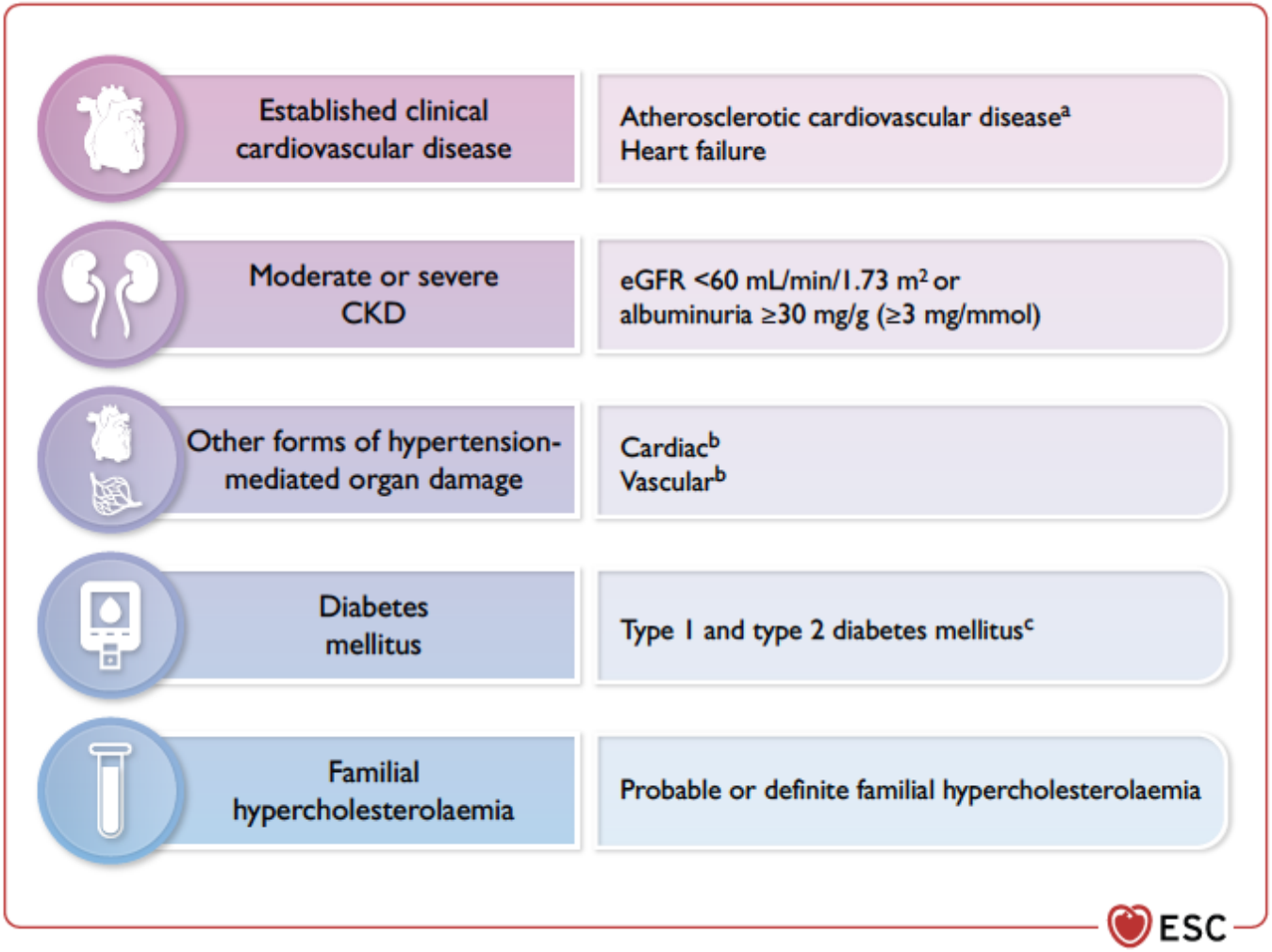
Blood pressure classification

	Non-elevated blood pressure	Elevated blood pressure	Hypertension
Office BP	SBP <120 mmHg and DBP <70 mmHg	SBP 120–139 mmHg or DBP 70–89 mmHg	SBP ≥140 mmHg or DBP ≥90 mmHg
HBPM	SBP <120 mmHg and DBP <70 mmHg	SBP 120–134 mmHg or DBP 70–84 mmHg	SBP ≥135 mmHg or DBP ≥85 mmHg
ABPM	Daytime SBP <120 mmHg and Daytime DBP <70 mmHg	Daytime SBP 120–134 mmHg or Daytime DBP 70–84 mmHg	Daytime SBP ≥135 mmHg or Daytime DBP ≥85 mmHg
	Insufficient evidence confirming the efficacy and safety of BP pharmacological treatment	Risk stratify to identify individuals with high cardiovascular risk for BP pharmacological treatment	Cardiovascular risk is sufficiently high to merit BP pharmacological treatment initiation

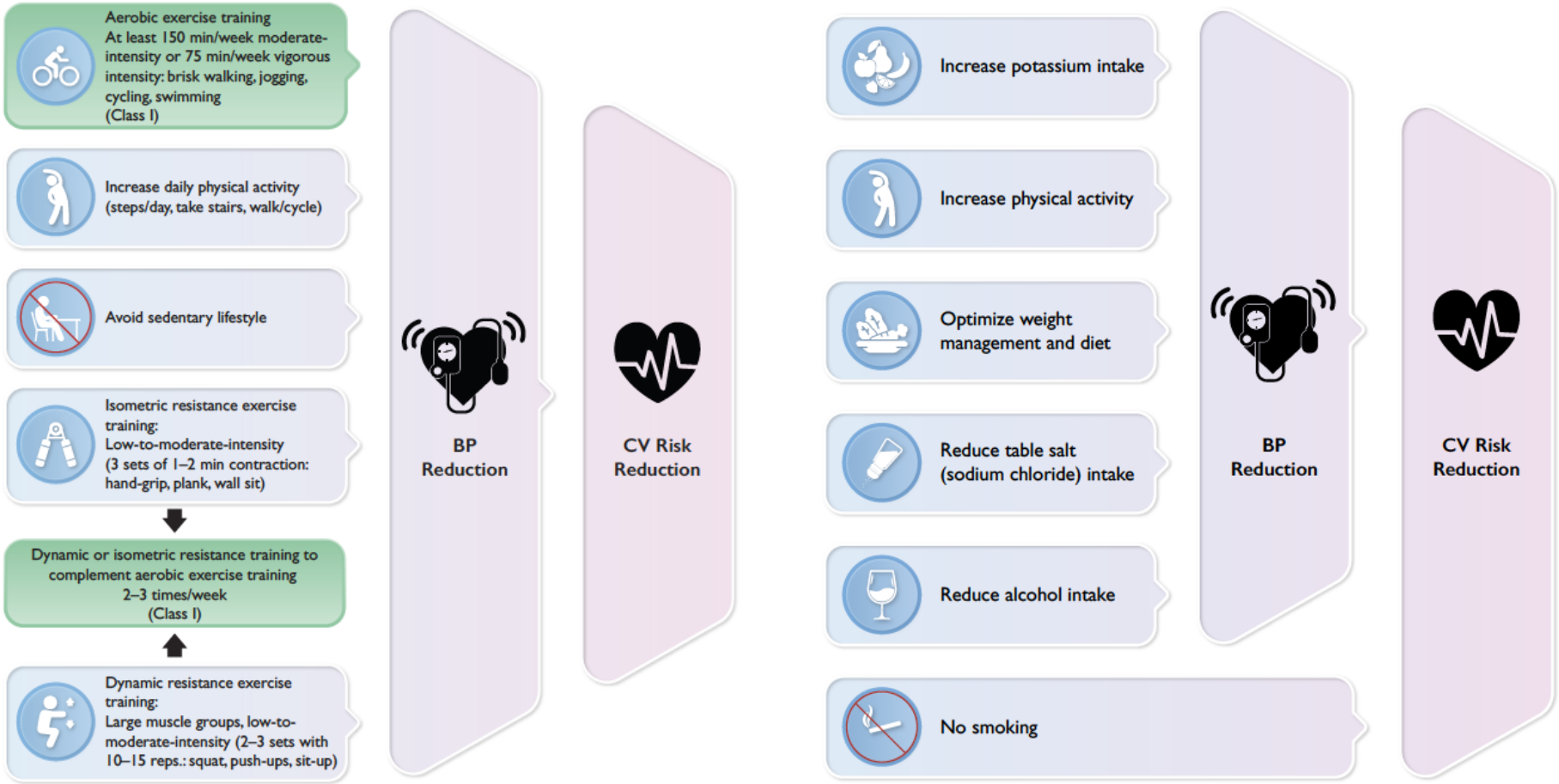
The diagnosis of hypertension and elevated BP requires confirmation using out-of-office measurements (HBPM or ABPM) or at least one additional subsequent office measurement

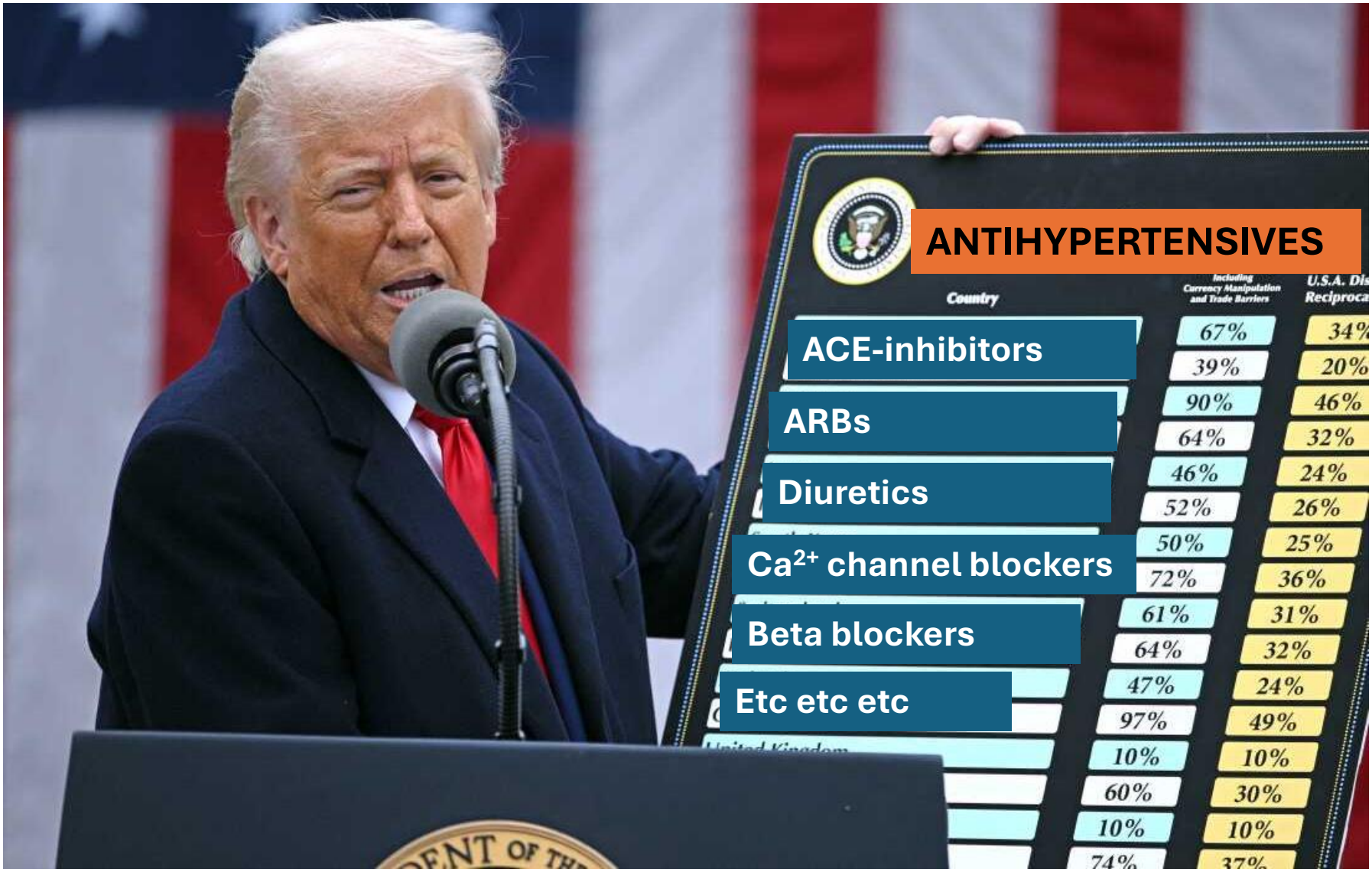
ESC

High cardiovascular risk conditions that warrant BP-lowering R_x in adults with elevated BP



Non-pharmacological interventions




ANTIHYPERTENSIVES
ACE-inhibitors
ARBs
Diuretics
Ca2+ channel blockers
Beta blockers
Etc etc etc
Country
Including Currency Manipulation and Trade Barriers
67%
39%
90%
64%
46%
52%
50%
72%
61%
64%
47%
97%
10%
60%
10%
34%
20%
46%
32%
24%
26%
25%
36%
31%
32%
24%
49%
10%
30%
10%

Pharmacological interventions

FIRST LINE OPTIONS FOR BP LOWERING

Robust evidence for BP-mediated reduction in CVD events

1. **Angiotensin converting enzyme inhibitors (ACE-Is)**
   e.g.perindopril, enalapril, ramipril, lisinopril

2. **Angiotensin receptor blockers (ARBs)**
   e.g. valsartan, candesartan, losartan, irbesartan

3. **Dihydropyridine calcium channel blockers (CCBs)**
   e.g. amlodipine, nifedipine, felodipine

4. **Diuretics (thiazides & thiazide-like)**
   e.g. indapamide, hydrochlorthiazide, bendroflumethiazide

Pharmacological interventions

ADD-ON IN SPECIFIC CIRCUMSTANCES

Beta-blockers (β-blockers)

- Angina
- Recent myocardial infarction
- Heart failure (mainly HFrEF)
- Patients needing concomitant heart rate control

Second-generation (cardioselective)

e.g. atenolol, metoprolol, bisoprolol

OR

Third generation (vasodilating) - PREFERRED

e.g. nebivolol, labetalol, carvedilol

Pharmacological interventions

Drugs to be used only as add-on therapy in resistant hypertension

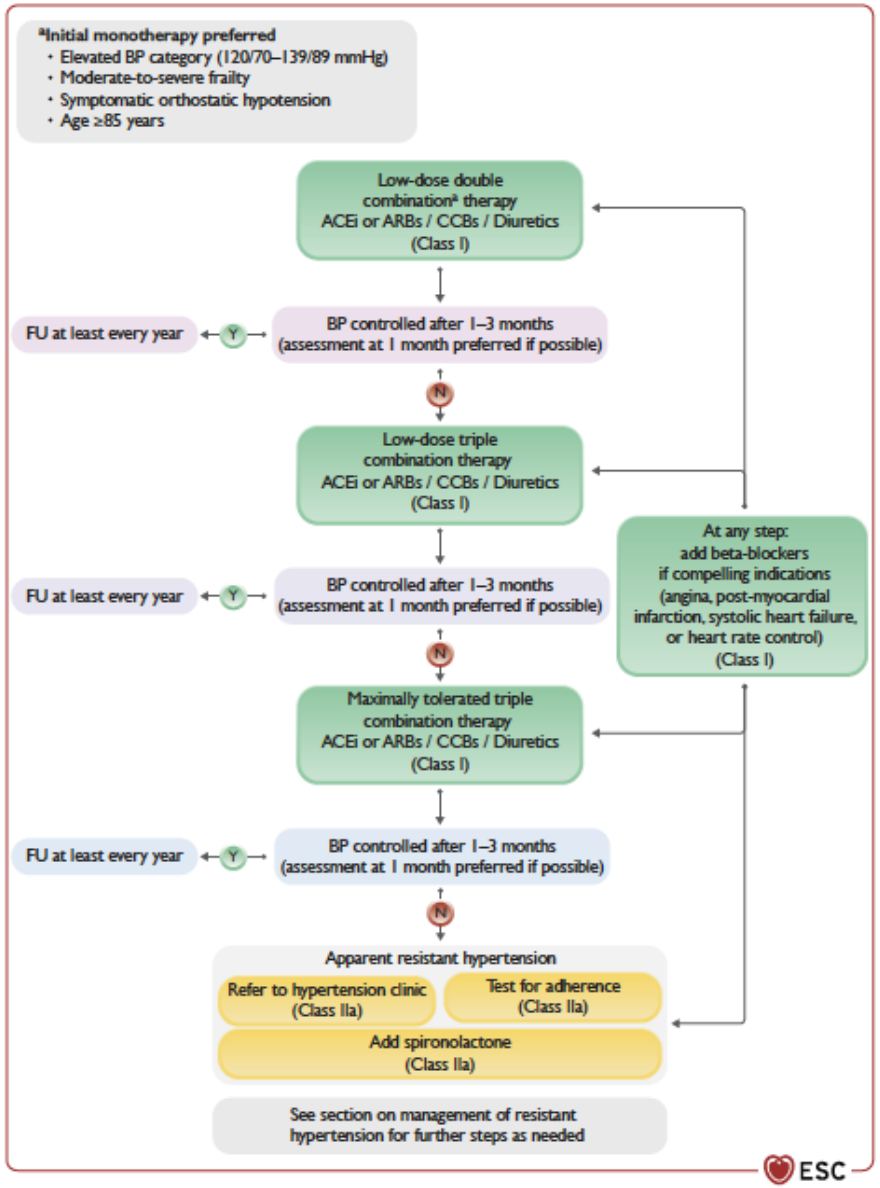
Mineralocorticoid receptor antagonists
e.g. spironolactone

Alpha-blockers e.g. doxazosin

Direct acting vasodilators - hydralazine

Centrally acting agents e.g. clonidine, methyldopa, moxonidine

Treatment algorithm



Low-dose DOUBLE combination R_x
ACEi or ARB / CCB / Diuretic

Low-dose TRIPLE combination R_x
ACEi or ARB / CCB / Diuretic

Maximally tolerated TRIPLE combination R_x
ACEi or ARB / CCB / Diuretic

Add spironolactone
Ensure adherence
Refer

Initial monotherapy preferred

- Elevated BP category (120-139 / 70-89mmHg)
- Moderate-severe frailty
- Age ≥ 85 years
- Symptomatic orthostatic hypotension

Problems with treatment compliance

Initiation

Never starts R_x

Implementation

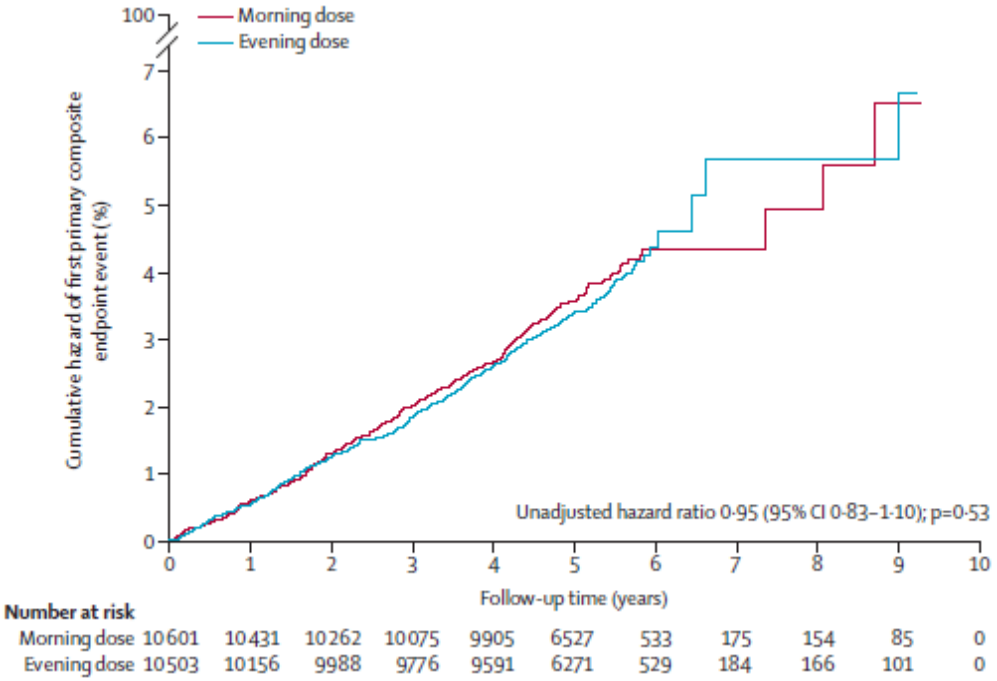
Erratic dosing

Persistence

Feels fine & stops R_x

Cardiovascular outcomes in adults with hypertension with evening versus morning dosing of usual antihypertensives in the UK (TIME study): a prospective, randomised, open-label, blinded-endpoint clinical trial

*Isla S Mackenzie, Amy Rogers, Neil R Poulter, Bryan Williams, Morris J Brown, David J Webb, Ian Ford, David A Rorie, Greg Guthrie, J W Kerr Grieve, Filippo Pigazzani, Peter M Rothwell, Robin Young, Alex McConnachie, Allan D Struthers, Chim C Lang, Thomas M MacDonald, on behalf of the TIME Study Group**

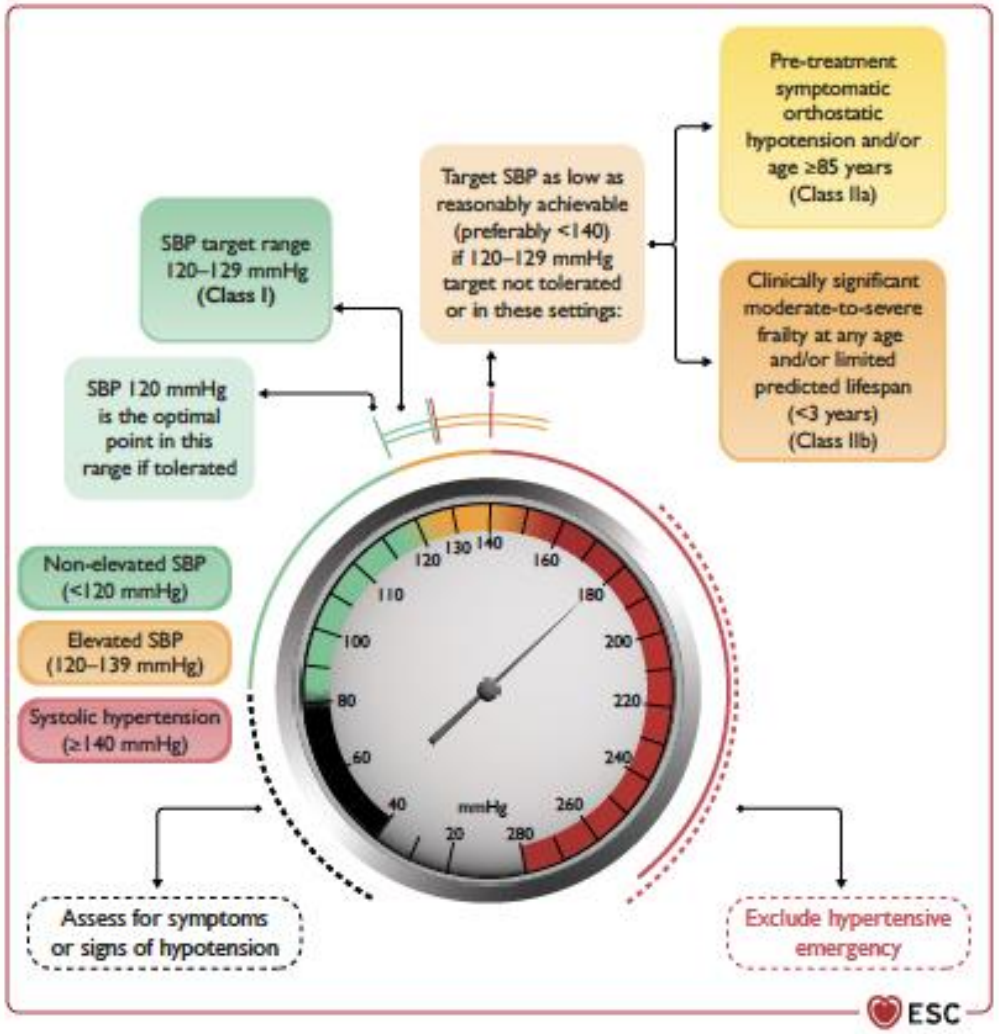


Number at risk

Morning dose	10601	10431	10262	10075	9905	6527	533	175	154	85	0
Evening dose	10503	10156	9988	9776	9591	6271	529	184	166	101	0

Lancet 2022; 400: 1417-25

Targets



120-129 / 70-79 mmHg

Mr S Claus

Low-dose ACE-I
+
low-dose CCB

Mr Sel Fie

Low-dose ACE-i

Ms Mildred

Low-dose CCB


Thank you!