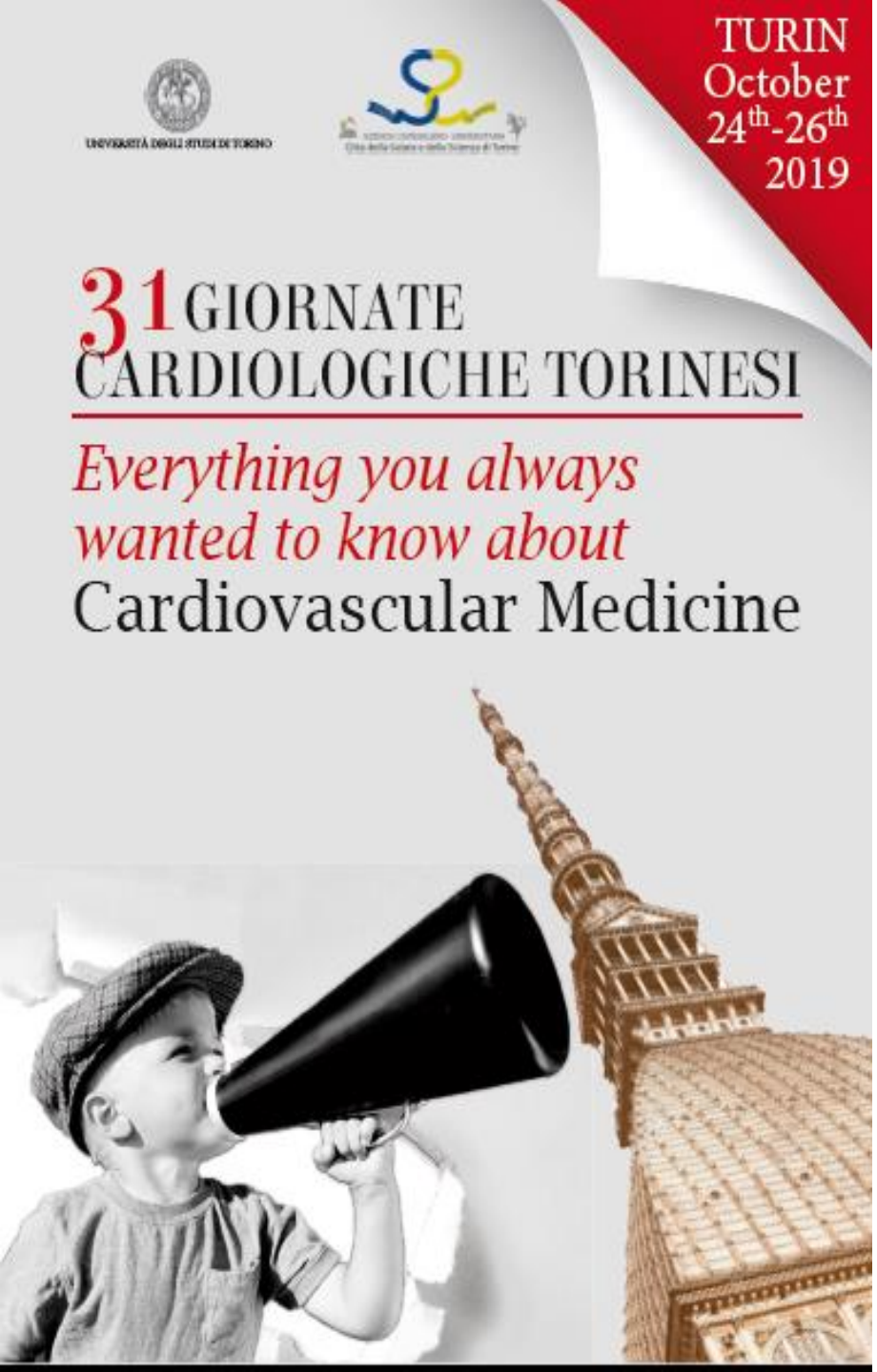

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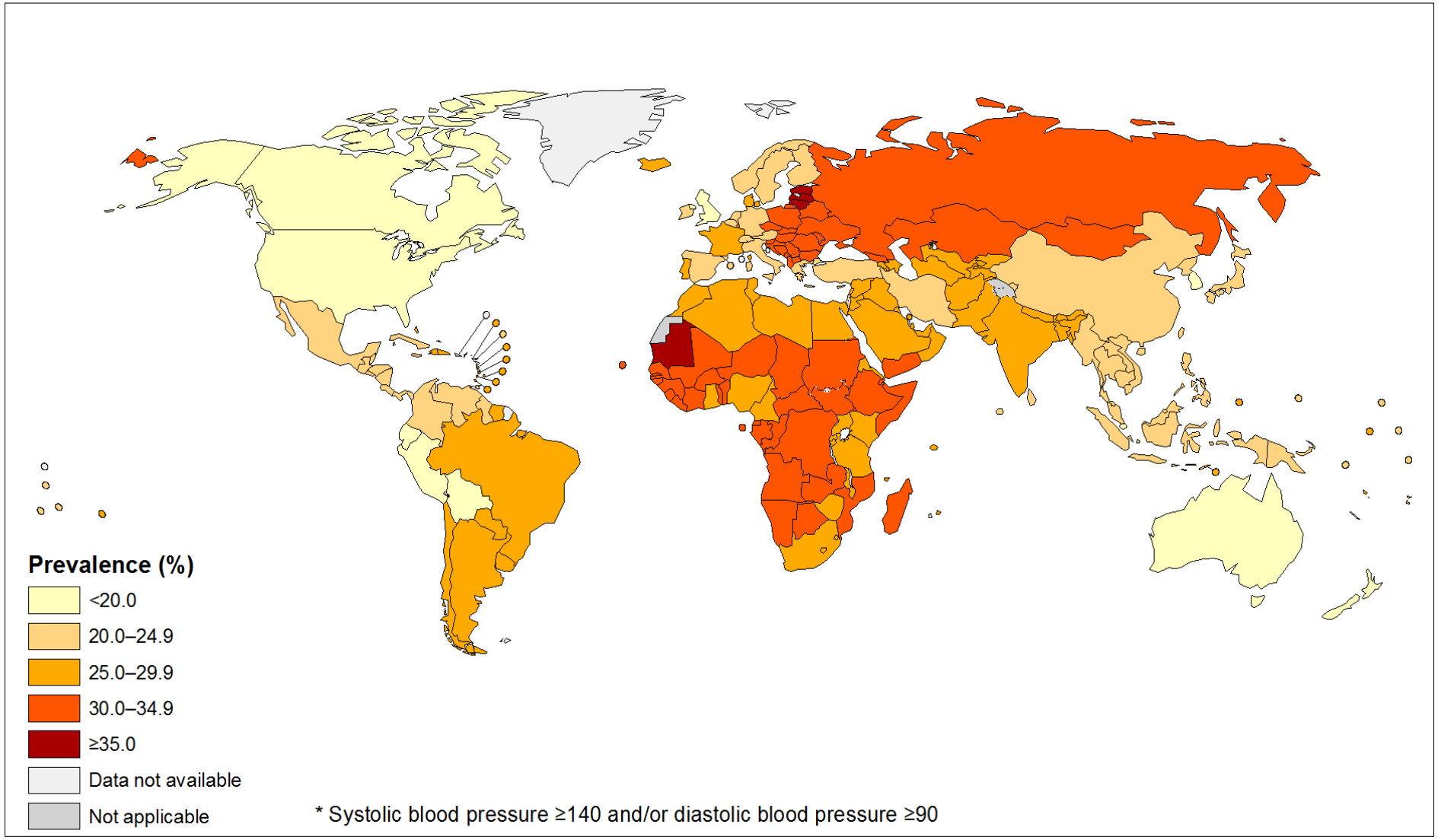
Practical implications of hypertension Guidelines

Franco Veglio

HYPERTENSION IN EUROPE 150 MILLION PEOPLE, PREVALENCE BY 15% TO 20% IN 2025



The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.

Data Source: World Health Organization
Map Production: Health Statistics and Information Systems (HSI)
World Health Organization

World Health Organization

Ten Commandments of the 2018 ESC/ESH HTN Guidelines on Hypertension in Adults

A first look at the new European Guidelines for the treatment of high blood pressure (BP) was presented at the European Society of Hypertension meeting in Barcelona on 9 June 2018. These long-awaited guidelines have been jointly developed by clinicians representing the European Society of Cardiology (ESC) and the European Society of Hypertension (ESH). The guidelines provide recommendations for doctors across Europe to diagnose hypertension, evaluate risk, when and how to treat hypertension and reduce risk, with both lifestyle advice and medications. The development of the guidelines was led by Prof. Bryan Williams (ESC Chairperson), London UK and Prof. Giuseppe Mancia (ESH Chairperson), Milan, Italy, as lead authors.

(1) **Definition of hypertension:** Hypertension is defined as a persistent elevation in office systolic BP ≥140 and/or diastolic BP ≥90mmHg, which is equivalent to a 24 h ambulatory BP monitoring (ABPM) average of ≥130/80mmHg or a home BP monitoring (HBPM) average ≥135/85mmHg.

(2) **Screening and diagnosis of hypertension:** Screening programmes should be established to ensure that office BP is measured in all adults, at least every 5 years and more frequently in people with a high normal BP. When hypertension is suspected the diagnosis of hypertension should be confirmed either by repeated office BP measurements, over a number of visits, or by 'out of office' BP measurement using 24h ABPM or HBPM.

(3) **When to consider drug treatment of hypertension:** Adults with Grade 1 hypertension (office BP 140-159/90-99) aged up 80years, should receive drug treatment if their BP is not controlled after a period of lifestyle intervention alone. For high-risk patients with Grade 1 hypertension, or patients with higher grades of hypertension (e.g. Grade 2 hypertension; ≥160/100mmHg), drug treatment should be initiated alongside lifestyle interventions.

(4) **Special considerations in frail and older patients:** For people over the age of 80years, who have not yet received treatment for their BP, BP treatment should be considered when office systolic BP is ≥160 mmHg. Frailty, dependency and expectations of treatment benefit will influence the decision treat people aged >80 years, on an individual patient basis, but these patients should not be denied treatment, or have treatment withdrawn simply on the basis of age.

(5) **How low should BP be lowered?** 'A target range' for treated BP has been introduced. Office systolic BP should be lowered to <140mmHg in all treated patients, including independent older patients who can tolerate treatment. The aim should be to target systolic BP to 130mmHg for most patients, if tolerated. Even lower office systolic BP levels (<130 mmHg) should be considered in patients aged <65years but not in patients aged 65years or more. Similar BP targets are recommended for patients with diabetes. Systolic BP should not be targeted to below 120mmHg because the balance of benefit vs. harm becomes concerning at these levels of treated systolic BP. Office diastolic BP should be lowered to <80mmHg.

(6) **Treatment of hypertension—lifestyle interventions are important:** The treatment of hypertension involves lifestyle interventions and drug therapy. Lifestyle interventions are important because they can delay the need for drug treatment or complement the BP lowering effect of drug treatment. Moreover, lifestyle interventions such as sodium restriction, alcohol moderation, healthy eating, regular exercise, weight control, and smoking cessation, all have health benefits beyond their impact on BP.

(7) **Start treatment in most patients with two drugs, not one:** Monotherapy is usually inadequate therapy for most people with hypertension, especially now that the BP treatment targets for many patients, are lower than in previous guidelines. Initial therapy with a combination of two drugs should now be considered usual care for hypertension. The only exception would be in a limited number of patients with a lower baseline BP close to their recommended target, who might achieve that target with a single drug, or in some frailer old or very old patients, in whom more gentle reduction of BP may be desirable.

(8) **A single pill strategy to treat hypertension:** Poor adherence to BP-lowering medication is directly related to the number of pills and is a major factor contributing to poor BP control rates. Single pill combination therapy is now the preferred strategy for initial two-drug combination treatment of hypertension and for three drug combination therapy when required. This will control the BP in most patients with a single pill and should improve BP control rates.

(9) **A simplified drug treatment algorithm:** A combination of an ACE inhibitor or ARB with a CCB or thiazide/thiazide-like diuretic is the preferred initial therapy for most patients. For those requiring three drugs, a combination of an ACE-inhibitor or ARB with a CCB and a thiazide/thiazide-like diuretic should be used. Beta blockers should be used when there is a specific indication for their use, e.g. angina, post myocardial infarction, heart failure with reduced ejection fraction, or when heart rate control is required.

(10) **Managing cardiovascular disease risk in hypertensive patients—going beyond BP:** Hypertensive patients frequently have concomitant cardiovascular risk factors. Statin therapy should be more commonly used in hypertensive patients with established cardiovascular disease or moderate-to-high cardiovascular disease risk according to the SCORE system. Benefit from statin therapy has also been observed in hypertensive

Williams , Mancia, Eur H Journal 2018

The clinical implications of ESC/ESH guidelines

Individual cardiovascular risk stratification

BP targets to achieve

Timing to start pharmacological treatment

Role of initial combination therapy

Promotion of adherence to treatments

Cardiovascular risk stratification

SCORE system
(Systematic Coronary Risk Evaluation system)
age,sex,smoking habits,totalcholesterol level,SBP

Very high risk	**People with any of the following:**
	Documented CVD, either clinical or unequivocal on imaging. • **Clinical CVD** includes acute myocardial infarction, acute coronary syndrome, coronary or other arterial revascularization, stroke, TIA, aortic aneurysm, and PAD • **Unequivocal documented CVD on imaging** includes significant plaque (i.e. ≥50% stenosis) on angiography or ultrasound; it does not include increase in carotid intima-media thickness • **Diabetes mellitus with target organ damage**, e.g. proteinuria or a with a major risk factor such as grade 3 hypertension or hypercholesterolaemia • **Severe CKD** (eGFR <30 mL/min/1.73 m^2) • **A calculated 10 year SCORE of ≥10%**
High risk	**People with any of the following:** • **Marked elevation of a single risk factor**, particularly cholesterol >8 mmol/L (>310 mg/dL), e.g. familial hypercholesterolaemia or grade 3 hypertension (BP ≥180/110 mmHg) • **Most other people with diabetes mellitus** (except some young people with type 1 diabetes mellitus and without major risk factors, who may be at moderate-risk)
	Hypertensive LVH
	Moderate CKD eGFR 30-59 mL/min/1.73 m^2)
	A calculated 10 year SCORE of 5-10%
Moderate risk	**People with:** • **A calculated 10 year SCORE of ≥1 to <5%** • **Grade 2 hypertension** • **Many middle-aged people belong to this category**
Low risk	**People with:** • **A calculated 10 year SCORE of <1%**

Classification of hypertension disease staging

Hypertension disease staging	Other risk factors, HMOD, or disease	BP (mmHg) grading			
		High-normal SBP 130–139 DBP 85–89	Grade 1 SBP 140–159 DBP 90–99	Grade 2 SBP 160–179 DBP 100–109	Grade 3 SBP ≥ 180 DBP ≥ 110
Stage 1 (uncomplicated)	No other risk factors	Low risk	Low risk	Moderate risk	High risk
	1 or 2 risk factors	Low risk	Moderate risk	Moderate – high risk	High risk
	≥ 3 risk factors	Low – moderate risk	Moderate – high risk	High risk	High risk
Stage 2 (asymptomatic disease)	HMOD, CKD grade 3, or diabetes mellitus without organ damage	Moderate – high risk	High risk	High risk	High – very high risk
Stage 3 (symptomatic disease)	Symptomatic CVD, CKD grade ≥ 4, or diabetes mellitus with organ damage	Very high risk	Very high risk	Very high risk	Very high risk

BP office targets to achieve

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	

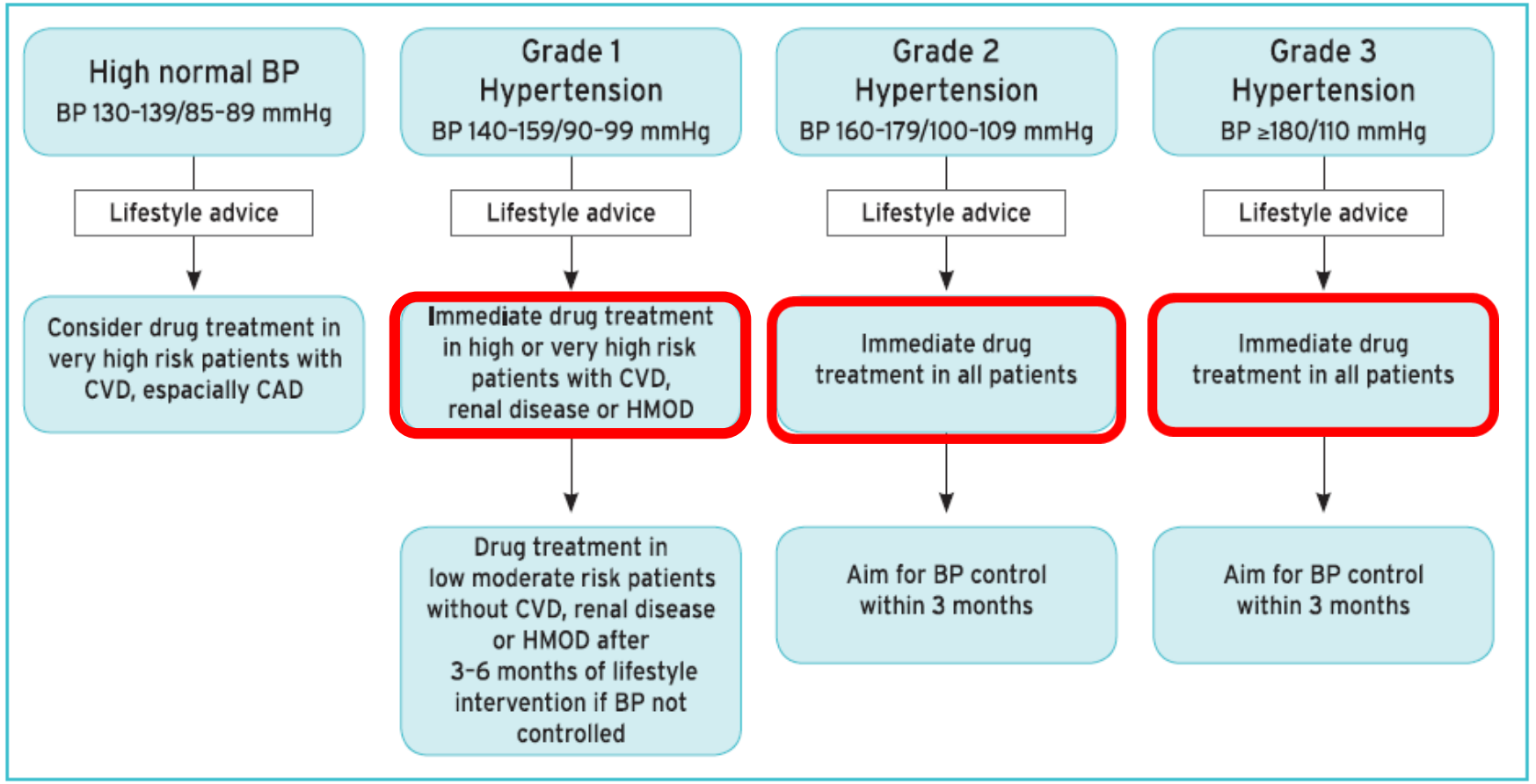
CAD = coronary artery disease; CKD = chronic kidney disease (includes diabetic and non-diabetic CKD); DBP = diastolic blood pressure; SBP = systolic blood pressure; TIA = transient ischaemic attack.

[a]Refers to patients with previous stroke and does not refer to blood pressure targets immediately after acute stroke.

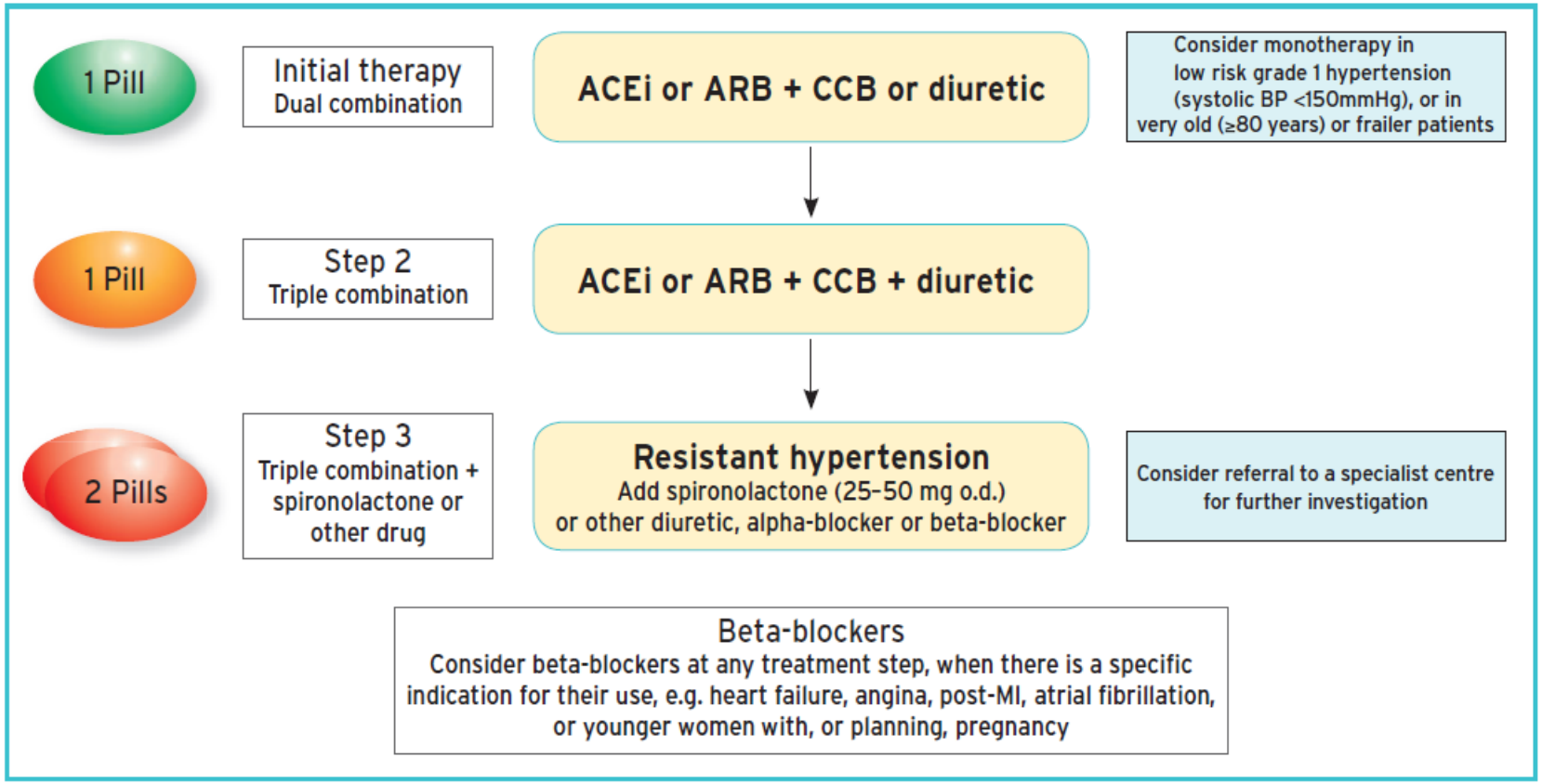
[b]Treatment decisions and blood pressure targets may need to be modified in older patients who are frail and independent.

2018 ESC/ESH Guidelines

Timing to start pharmacological treatment



Role of initial combination therapy



Interventions that may improve drug adherence in hypertension

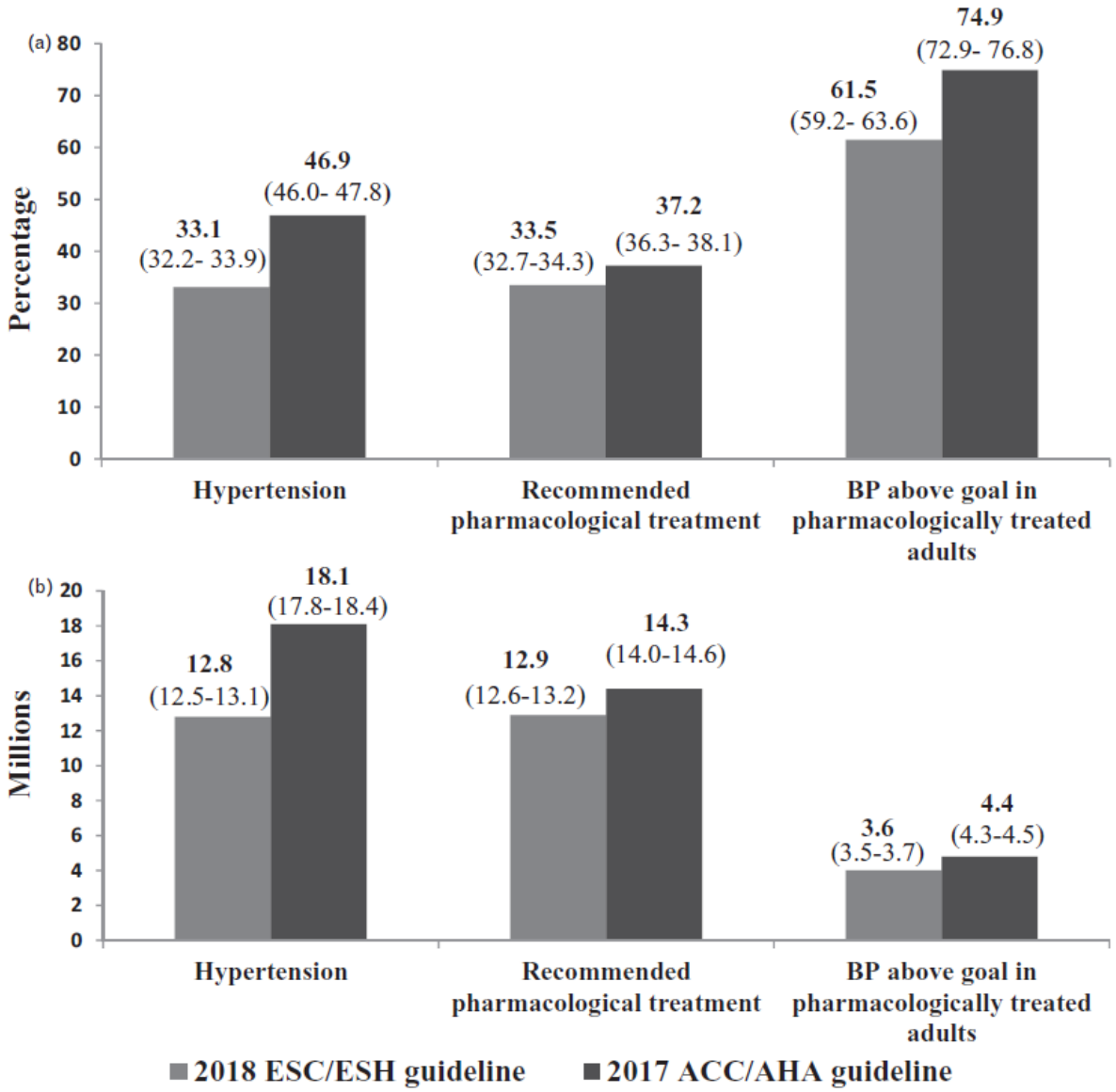
Physician level
Provide information on the risks of hypertension and the benefits of treatment, as well as agreeing a treatment strategy to achieve and maintain BP control using lifestyle measures and a single-pill-based treatment strategy when possible (information material, programmed learning, and computer-aided counselling)
Empowerment of the patient
Feedback on behavioural and clinical improvements
Assessment and resolution of individual barriers to adherence
Collaboration with other healthcare providers, especially nurses and pharmacists
Patient level
Self-monitoring of BP (including telemonitoring)
Group sessions
Instruction combined with motivational strategies
Self-management with simple patient-guided systems
Use of reminders
Obtain family, social, or nurse support
Provision of drugs at worksite
Drug treatment level
Simplification of the drug regimen favouring the use of SPC therapy
Reminder packaging
Health system level
Supporting the development of monitoring systems (telephone follow-up, home visits, and telemonitoring of home BP)
Financially supporting the collaboration between healthcare providers (e.g. pharmacists and nurses)
Reimbursement of SPC pills
Development of national databases, including prescription data, available for physicians and pharmacists
Accessibility to drugs

Therapeutic Management of BP in European and American Guidelines

2018 ESC/ESH GUIDELINES						2017 ACC/AHA GUIDELINES			
	High-normal BP 130–139/85–89 mm Hg	Grade 1 hypertension 140–159/90–99 mm Hg	Grade 2 hypertension 160–179/100–109 mm Hg	Grade 3 hypertension ≥180/110 mm Hg		Normal BP <120/80 mm Hg	Elevated BP 120–129/<80 mm Hg	Stage-1 hypertension 130–139/80–89 mm Hg	Stage-2 hypertension ≥140/90 mm Hg
High or very high CV risk	Promote optimal lifestyle habits and consider drug treatment, especially in CAD	Pharmacological treatment should be immediately started	Pharmacological treatment should be immediately started	Pharmacological treatment should be immediately started	10-y ASCVD risk >10%	Promote optimal lifestyle habits and reassess in 1 y	Nonpharmacological therapy and reassess in 3–6 mo	Nonpharmacological therapy and BP-lowering medication	Nonpharmacological therapy and BP-lowering medication
Low-to-moderate CV risk	Lifestyle advice	Pharmacological treatment should be started after 3–6 mo of lifestyle intervention			10-y ASCVD risk <10%			Nonpharmacological therapy and reassess in 3–6 mo	

Volpe, Circ Res 2019

Impact of the European and American guidelines on hypertension prevalence, treatment



Conde, J Hypertension, 2019

Thanks

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