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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 ≥90 mmHg, which is equivalent to a 24 h ambulatory BP monitoring (ABPM) average of ≥130/80 mmHg or a home BP monitoring (HBPM) average ≥135/85 mmHg.

(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 24 h ABPM or HBPM.

(3) **When to consider drug treatment of hypertension:** Adults with Grade 1 hypertension (office BP 140-159/90-99) aged up 80 years, 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; ≥160/100 mmHg), drug treatment should be initiated alongside lifestyle interventions.

(4) **Special considerations in frail and older patients:** For people over the age of 80 years, 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80 years, on an individual patient basis, but these patients should not be denied treatment, or have treatment withdrawn simply on the basis of age.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 <140 mmHg in all treated patients, including independent older patients who can tolerate treatment. The aim should be to target systolic BP to 130 mmHg for most patients, if tolerated. Even lower office systolic BP levels (<130 mmHg) should be considered in patients aged <65 years but not in patients aged 65 years or more. Similar BP targets are recommended for patients with diabetes. Systolic BP should not be targeted to below 120 mmHg because the balance of benefit vs. harm becomes concerning at these levels of treated systolic BP. Office diastolic BP should be lowered to <80 mmHg.

(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

patients at the border between low and moderate risk. Antiplatelet therapy, especially low dose aspirin is also indicated for secondary prevention in hypertensive patients but is not recommended for primary prevention, i.e. in patients without cardiovascular disease.

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Perspective on the New Blood-Pressure Guidelines

Large population studies demonstrate a continuum of ascending cardiovascular risk with elevations in with blood pressure starting at levels of 115/75 mmHg. Most hypertension treatment trials demonstrate a reduction in cardiovascular events with treated blood pressures down to levels of 140/90 mmHg. This changed with the publication of the Systolic Blood Pressure Intervention Trial (SPRINT) that documented a significant reduction in cardiovascular events in high risk individuals targeted to a blood pressure levels of less than 120 mmHg compared with less than 140 mmHg. This landmark trial coupled with some recent epidemiological studies has changed the paradigm on blood pressure treatment targets in high risk individuals.

The new Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults by the American College and Cardiology (ACC) and the American Heart Association (AHA) acknowledges the newer clinical trial data by redefining hypertension. The guideline defined blood pressure below 120/80 mmHg as normal blood pressure and elevated blood pressure as systolic pressure of 120–129 mmHg with a diastolic pressure below 80 mmHg. Blood pressures of 130–139 mmHg systolic or 80–89 mmHg diastolic are now defined as stage 1 hypertension, whereas those 140/90 mmHg or greater, the old definition of hypertension, is now defined as stage 2 hypertension.

The reclassification of hypertension has drawn some criticism for reclassifying a large population of individuals formally considered healthy as now having a defined disease. In the United States, the reclassification of hypertension added over 30 million adults to the category of hypertension. Conversely, this reclassification should be useful to physicians and patients by highlighting not only the blood pressure number but placing it in the context of elevated cardiovascular risk i.e. 10% or more over 10 years. Thus, placing the emphasis not only on the BP number but focusing it on lowering cardiovascular risk.

Physicians, patients and payers should take note that these lower BP numbers do not necessarily mandate more antihypertensive agents in most cases. The emphasis should be on lifestyle modification include reducing sodium intake, good sleep hygiene with at least 6 h of uninterrupted sleep nightly, daily exercise, and other factors to achieve BP goals. It has been shown in many randomized as well as in observational studies that reducing sodium levels below 2300 mg/day is equivalent to giving one antihypertensive medication. Failure to appreciate the fact of patient education is as, if not more important than adding another medication, may result in excessive or inappropriate treatments that may cause more harm than benefit.

It is important to note that the new guideline does not mandate medical treatment for all individuals with stage 1 hypertension. Moreover, for those with less than a 10% 10-year risk the treatment threshold is 140/90 mmHg not >130/80 mmHg. Lifestyle modification is recommended as the initial treatment for individuals with stage 1 hypertension and a 10-year cardiovascular risk below 10%. The 10% cardiovascular risk cut-off has been an arbitrary but well accepted risk cut-off to define high risk. This risk level, however, has not been rigorously studied in hypertension treatment trials. The SPRINT trial is the only rigorous trial to show cardiovascular event reduction in the stage 1 hypertension range and used a 15% 10-year risk as a definition for high risk. Many individuals in the stage 1 hypertension category will likely have a very low absolute cardiovascular risk. Physicians may feel compelled to begin treatment despite low risk because their patients are now defined as having a disease, but they should resist this as the goal is to better treat those at high risk likely to get a benefit.

The new guideline points out the importance of obtaining accurate blood pressure measurements. Many decisions about hypertension treatment are made on hastily and inappropriately measured blood pressures in an office setting. A reactive component to blood pressure is commonly observed in the office referred to as white coat hypertension. The guideline reviews proper blood pressure measurement technique and suggests using home blood pressure monitoring for treatment decision making. This has already been used in some recent European studies and is reliable if the patient is educated on how to measure BP at home. Thus, if home blood pressure data is to be used to diagnose hypertension it is imperative that patients are taught the proper method for obtaining accurate readings. Failure to use correct