ESC guidelines: take home messages for Swiss physicians

Management of arterial hypertension

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Summary

The new guidelines for the management of arterial hypertension were released in 2013 by the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC). The purpose of this review is to highlight some of the changes in these new guidelines compared to the previous version.

Key words: ESH; ESC; guidelines; hypertension

In 2013 the European Society of Hypertension (ESH) and the European Society of Cardiology (ESC) released their latest guidelines for the management of arterial hypertension [1]. This document was released six years after the two societies issued their last recommendations. The publications of new studies on both the diagnosis and the treatment of arterial hypertension warranted the release of a new version of these guidelines.

First of all, the definition and the cut-off values for arterial hypertension have not changed: arterial hypertension is still defined as values of systolic blood pressure >140 mm Hg and/or diastolic blood pressure >90 mm Hg. The guidelines still recommend quantifying global (absolute) cardiovascular risk because most of the hypertensive population has additional cardiovascular risk factors. However, in young hypertensive patients, treatment decision should rather be based on relative risk or target organ damage. The attention to target organ damage has increased in the document since asymptomatic alterations in the heart, the brain, the vasculature or the kidney confer an increased risk beyond that caused by traditional risk factors.

The use of out-of-the office blood pressure (OBP) measurement whether with home blood pressure measurement (HBPM) or with ambulatory blood pressure measurement (ABPM) is strongly advised because they offer a more reliable method of blood pressure assessment. This has been shown in numerous studies showing that ABPM is better correlated to target organ damage such as ventricular hypertrophy, increased carotid intima-media thickness than office blood pressure. ABPM and HBPM are also better associated with cardiovascular morbidity and mortality. Both enable the detection of white coat hypertension (OBP ≥140/90 mm Hg and out-of-office <135/85 mm Hg) and masked hypertension (OBP <140/90 and out-of-office ≥135/85 mm Hg) in untreated patients. The identification of the two latter phenomena is important as white coat hypertension carries a lower cardiovascular risk than sustained hypertension. Therefore, medical treatment is not indicated. However, these patients should be closely monitored by out-of-office blood pressure measurement because they tend to develop sustained hypertension. In contrast, masked hypertension is often associated with other cardiovascular risk factors and asymptomatic organ damage. Thus, the incidence of cardiovascular events is about two times higher in masked hypertension than in normotensive patients. No major changes concerning the assessment of target organ damage have appeared in the new guidelines. The prognostic value, availability and cost effectiveness of some markers of target organ damage are shown in table 1.

The search for secondary hypertension is not necessary for all hypertensive patients and should be guided by clinical history, physical examination and standard laboratory investigation. The knowledge of the most common causes of secondary hypertension, which are renal parenchymal disease, renal artery stenosis and primary aldosteronism should also guide the investigation of secondary causes. Obstructive sleep apnoea is not strictu sensu a secondary form of hypertension but deserves a special consideration since it is frequently found in patients with hypertension, particularly in its resistant form. Abnormalities in the dipping pattern of BP during the night should raise the possibility of obstructive sleep apnoea .

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Table 1: Predictive value, availability and cost effectiveness of some markers of organ damage (adapted from [1]).

Marker	Cardiovascular predictive value	Availability	Cost-effectiveness
ECG	+++	++++	++++
Echocardiography	++++	+++	+++
eGFR	+++	++++	++++
Microalbuminuria	+++	++++	++++
Carotid intima-media thickness	+++	+++	+++
ABI	+++	+++	+++
PWV	+++	++	+++
Cardiac MRI	++	+	++
Coronary calcium score	++	+	+

ECG = electrocardiogram; eGFR = estimated glomerular filtration rate; ABI = ankle brachial index; PWV = pulse wave velocity; MRI = magnetic resonance imaging.

The timing of the initiation of pharmacologic antihypertensive therapy is determined by the level of blood pressure and the level of cardiovascular risk. There is strong evidence that pharmacological therapy for patients with blood pressure >160/100 or high cardiovascular risk is beneficial. For low-to-moderate cardiovascular risk and grade 1 hypertension (140–159 / 90–99 mm Hg) the evidence is more difficult to obtain and would necessitate prospective studies with very long follow-up periods. The low to moderate risks explains why non-pharmacological lifestyle interventions can always be initiated for several weeks before introducing an antihypertensive therapy if necessary.

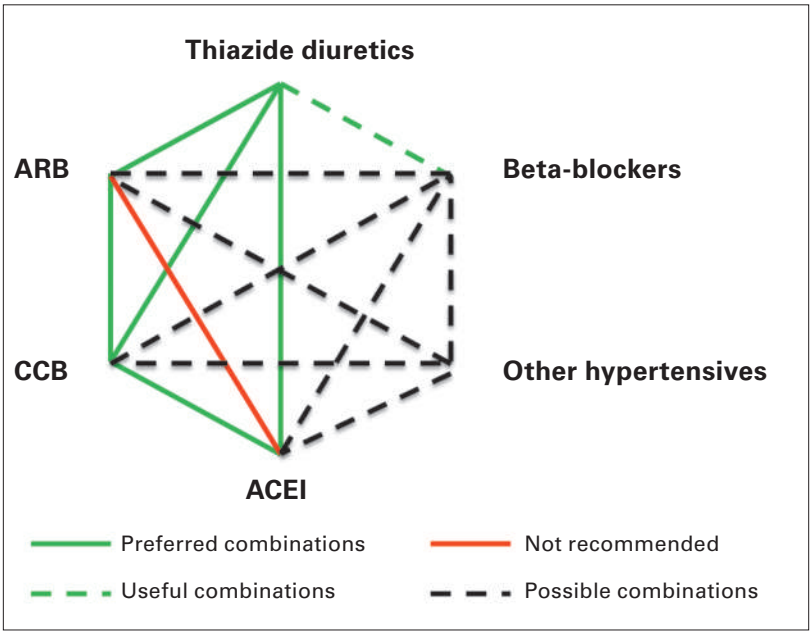

Figure 1: Possible anti-hypertensive drug combinations. (ARB = angiotensin receptor blockers; ACEI = angiotensin converting enzyme inhibitors; CCB = calcium channel blockers.)

One of the major changes in the guidelines is the blood pressure targets. A systolic blood pressure <140 is recommended for every patient except elderly patients for whom a target systolic blood pressure of 140–150 mm Hg is recommended. It is interesting to note that the Swiss hypertension guidelines have adopted this target for elderly since 2009. The diastolic blood pressure target after initiation of therapy is <90 mm Hg except for diabetic patients where diastolic blood pressure <85 mm Hg is targeted.

As initial choice of therapy, ACE inhibitor, angiotensin receptor blockers, calcium channel blockers, thiazide or thiazide-like diuretics and beta-blockers are all suitable for the initiation and maintenance of therapy based on their favourable effect on mortality and morbidity compared to placebo. Conflicting results on the use of beta-blockers as initial treatment were reported from different meta-analyses comparing first line antihypertensive drug [2, 3]. The choice of the drug should be guided by the existence of specific conditions such as heart failure, diabetes for example or the presence of contra-indications to a specific category such as pregnancy for the prescription of blockers of the renin angiotensin system. As a combination of two or more antihypertensive drugs is necessary to reach the blood pressure targets in a significant number of patients (>60% of cases), the guidelines recommend using fixed dose combinations in order to improve adherence to therapy. The only combination, which must be abandoned, is the combination of two blockers of the renin angiotensin system. Indeed, trials such as the ONTARGET (Ongoing Telmisartan Alone and in Combination with Ramipril Global Endpoints) and the ALTITUDE (ALiskiren Trial In Type 2 Diabetes Using Cardiorenal Endpoints) trial have shown that there is no added cardiovascular or renal benefit of this combination compared to a single agent blockade [4, 5]. However, the risk of adverse events such as acute renal failure or hyperkalaemia is actually increased [6]. A new figure showing the preferred drug combinations to use in order to reach the blood pressure targets emerged from these results and the publication of new studies (fig. 1) [1].

The emergence of renal denervation as treatment option in resistant hypertension has prompted special attention to this condition. Emphasis for a correct diagnosis of resistant hypertension (true resistant hypertension as opposed to apparent resistant hypertension) is highlighted in the guidelines. They recommend the judicious use of ABPM (to exclude a

white coat effect), an adequate choice and dosage of antihypertensive drugs and an assessment of the adherence of therapy, since these three items are responsible for most cases of resistant hypertension. The guidelines were released before the publication of the SYMPLICITY-HTN3 trial, which failed to show a benefit in terms of blood pressure reduction of renal denervation, compared with a sham operation [7]. Nevertheless, the guidelines acknowledged the need for more clinical data in terms of efficacy and to understand what makes renal denervation effective or ineffective.

In summary, the 2013 ESC/ESH guidelines adapted the target of systolic blood pressure and diastolic blood pressure, updated the prognostic significance of out-of-office blood pressure measurements (ABPM and HBPM) and target organ damage. Finally, they revised the schema for combination therapy and provided a new algorithm to treat hypertensive patients.

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