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New European guidelines for the management of arterial hypertension. Comments of Russian experts

During the European Congress of Cardiology held in August 2018, new guidelines on arterial hypertension were presented. They included a revision of the cardiovascular risk estimation, algorithms of antihypertensive therapy combinations and management for certain groups of patients. First of all, we expected possible changes in target blood pressure levels followed by the US recommendations. The opinion of the leading Russian experts on the main states of the new European guidelines for the management of arterial hypertension is presented.

Key words: *arterial hypertension, new European guidelines, target blood pressure levels.*

Conflicts of interest: nothing to declare.

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The Russian medical community has been waiting for the publication of new European guidelines for the management of arterial hypertension (AH) [1]. It was interesting to see the its differences compared with American Heart Association guidelines, primarily regarding target blood pressure (BP) levels, the list of main antihypertensive drugs, the classification of hypertension. The leading Russian experts gave their comments on main states of new European guidelines that are listed below.

Sergei G. Kanorskii (Krasnodar)

2018 ESC/ESH guidelines for the management of AH kept previous classification — AH starts from office systolic BP (SBP) of 140 mmHg and/or office diastolic BP (DBP) of 90 mmHg [1]. ACC/AHA 2017 guidelines are more progressive and suggest to define AH from 130/80 mmHg [2]. It is necessary to expand the practice of measuring BP while patient is relaxed, as it was illustrated during SPRINT trial, which affected the opinion of American experts. There is no need to delay non-pharmacological and pharmacological treatment and wait until BP reaches 140/90 mmHg when target organs may be damaged and the tolerance for BP of 115–130/70–80 mmHg is lower [3].

Authors of European guidelines suggest to treat most patients with two-drug combination therapy initially to compensate the «late start» of the therapy. But the risk of hypotension in this case is higher, therefore, monotherapy is not prohibited.

It is remarkable that target DBP is 70–80 mmHg, but SBP should not be lower than 120 mmHg, because it may lead to adverse consequences.

New European guidelines pay more attention to individualization of antihypertensive therapy in elderly patients compared with American guidelines. Treatment of elderly patients without taking into account their biological age can be inadequate and poor tolerated.

New European guidelines show that it is important to eliminate excessive (according to available data) BP decrease, therefore, target BP has upper and lower limits. Intense antihypertensive treatment tends to be used among wider groups of patients, including elderly patients. In near future we might be able to reduce the progression of atherosclerosis in population with 1–2 injections of Inclisiran per year, improve tolerance to low BP and inhibit age-related changes in arteries.

European experts proposed several algorithms for AH pharmacotherapy in different clinical situations with priority to fixed combinations of medications that will improve the quality of physician's routine and provide more efficient achievement and maintenance of target BP. Uncontrolled arterial hypertension is usually the result of poor adherence to prescribed therapy. Authors of European guidelines fairly consider this problem as one of the most important and pay special attention to it. It is even more relevant for Russia.

Grigory G. Arabidze, professor (Moscow)

European experts announced BP target levels. The objective of treatment should be to lower BP <140/90 mmHg in all patients and, provided that the treatment is well tolerated, treated BP values should be target to 130/80 mmHg or lower in most patients, although "in some groups the evidence is less compelling".

The recommendations are mainly based on data of meta-analysis of 123 studies with 613,815 participants, published 2 years ago that showed 20 % reduction of major cardiovascular events and 13 % of all-cause mortality when an SBP reached <130 mmHg, and meta-analysis of 50 studies with 190362 participants published in 2016 that showed a 25 % reduction of major cardiovascular events when SBP reached <130 mm Hg, but risk reduction effectiveness decreased with lower blood pressure baseline. Thus, BP reduction below 130/80 mmHg will be more effective in patients with initially higher BP.

Meta-analysis data included elderly patients, but BP decrease below 130/80 mmHg is limited by known comorbidities, adverse effects, including impaired cognitive function.

The increase in patients with initial two-drug combination therapy is reasonable due to more aggressive treatment targets and a possibility to use combinations of drugs in various dosages (also due to economic reasons) that increase therapy adherence.

We found misprinting in the text of guidelines, for example, in section 8.14.1 "... target BP of approximately <130/80 mmHg in patients with coronary artery disease (CAD) appears safe and can be recommended, but achieving a BP <120/80 mm Hg is not recommended", considering the meaning of previous text the BP should be <120/70 mm Hg.

The section devoted to the management of resistant hypertension is based on a good evidence data, but completeness, quality of analysis, structure of algorithms for the management of these patients is lower compared with the AHA guidelines, published in September 2018 [2].

Galina A. Baryshnikova, professor (Moscow)

AH classification did not change on the level of BP — there are still three grades of BP, although the stages of AH have been added to stratification table. For many years in Russia we indicated not only the grade, but the stage of AH in the diagnosis.

We were afraid that beta-blockers would be excluded from the list of basic antihypertensive treatment, but they are still the first-line treatment for concomitant CAD, chronic heart failure (CHF), arrhythmias, aortic aneurysm, and AH in pregnant women, although it is not recommended to start treatment of uncomplicated hypertension with them.

More extensive use of home blood pressure monitoring is recommended, a major advantage of which is the exclusion of white-coat hypertension. It is remarkable that in this case the criteria for AH is BP≥ 135/85 mmHg, not ≥ 140/90 mmHg.

Target BP remains lower than 140/90 mmHg. After reaching this level of BP, it is recommended to continue decrease of SBP below 130 mmHg in case of good tolerance. Concomitant diseases should not limit the physician in decreasing BP below 130 mmHg including concomitant CAD, stroke / increase of intima-media complex thickness (IMT) in history, diabetes mellitus (DM). Only in case of chronic kidney disease (CKD) is it recommended to lower BP below 140 mmHg and leave it in the range from 130 to 140 mm Hg. It is remarkable that there is no requirement to reduce SBP

under 120 mmHg (target BP during SPRINT study, the results of which were used as the basis for new guidelines for the diagnosis and treatment of hypertension in Australia and China), it was also recommended not to reduce SBP under 120 mmHg [3].

DBP was previously recommended to reduce below 90 mm Hg (in case of DM — below 85 mm Hg); new recommendations, regardless of age and concomitant diseases, recommend to maintain DBP in the range of 70–80 mmHg.

We are glad to see maximum simplification of algorithms for the treatment of uncomplicated AH, two-drug combination therapy (ACE inhibitors + calcium antagonists or diuretics) are recommended initially, and three-drug combination therapy at the next stage of treatment (ACE inhibitors + calcium antagonists + diuretics). The next stage is adding spironolactone, alpha-blockers and beta-blockers to therapy. Monotherapy can be used in a limited range of patients with AH: 1 grade of AH and low risk of cardiovascular complications (CVC), which include the absence of risk factors, target organs damage, DM, CKD, and cardiovascular diseases (CVD).

It is recommended to monitor patients' adherence to prescribed therapy, as the main reason for low efficacy of antihypertensive therapy, and to use fixed combinations of antihypertensive drugs, which are widespread in Russia, especially since there is fixed three-drug combination therapy (RAAS blocker + calcium antagonist + diuretic).

It is surprising that imidazoline receptor agonists (moxonidine and rilmenidine) were not mentioned in the new recommendations. These drugs (especially moxonidine) have become widely spread as part of combination therapy for the treatment of AH in patients with insulin resistance, obesity, and the management of hypertensive crisis (sublingual). Moxonidine was mentioned only once (in the list of drugs that should not be used in patients with AH and concomitant CHF).

Olga A. Koshelskaya, professor (Tomsk)

New European guidelines for the management of AH are significantly different compared with last recommendations of American experts, despite the same classes and data level of evidence [1].

Both guidelines recommend to use home blood pressure monitoring and ambulatory blood pressure monitoring to confirm the diagnosis of AH and to control adherence and compliance to therapy, pay attention to the role of nurses and pharmacists in teaching patients, have similar point of view on the treatment of resistant hypertension and on more intensive treatment of AH in elderly with reference to their safety.

However, European experts are conservative in determining AH and intensity of therapy. According to American guidelines, BP of 130–139 / 80–89 mm Hg referees to grade 1 of AH, ESC / ESH guidelines define grade 1 from 140–159 / 90–99 mmHg.

New European recommendations, name not only the upper threshold of target BP, but its target ranges compared with previous European guidelines. There is also a tendency to decrease target BP level in patients under 65 years: from "below 140/90 mm Hg" to "130 / 70–79 mm Hg with good tolerance" with BP lower limit of 120/70 mm Hg. However, since the regulation of systolic and diastolic BP is not independent and can have discordant dynamics during treatment in some patients, it is important to identify priorities in achieving both components of target BP.

In contrast to the ACC/AHA 2017 guidelines, a more cautious approach is recommended for SBP lowering in patients over 65 years, and its target level is determined as the range "from 140 to 130 mmHg", which is reasonable due to common vascular comorbidities in these patients. The recommendations for treatment of patients with CAD and very high risk of CVC, as well as patients with 3–4 stages of CKD are more conservative and include target range of blood pressure of 130–139 / 85–89 mmHg, while American experts recommend target level of BP for these categories of patients <130/80 mm Hg, which is reasonable only for patients with proteinuria [2]. Thus, the available data on the pathogenesis of non-proteinuric CKD, often found in patients with AH and DM, allow us to consider an intense decrease in systolic BP in patients with CKD without high albuminuria / proteinuria as the cause of renal hypoperfusion.

It is remarkable that specific therapy algorithms instead of "choosing among any five classes of antihypertensive drugs" and the use of fixed combinations, including two-drug combination therapy at the initial stage will increase patient's adherence and improve prognosis of the disease.

Yury A. Bunin, professor (Moscow)

ESC guidelines for the management of AH are balanced, clear and, in our opinion, their structure, scientific and practical significance have been between the best ones over the last twenty years. Guidelines safe many previous states (classification of AH, risk factors and associated diseases, approaches to drug

combinations, etc.), and give reasonable BP levels from which we should start treatment of patients of various age (18–65 years — from 140/90 mm Hg and more; 65–79 years — 140/90 mm Hg and more; 80 years and older — 160/90 mm Hg and more). In contrast to ACC/AHA 2017 guidelines, pharmacological treatment of high normal BP (130–135 / 85–89 mmHg), even at very high risk of complications is not effective sufficiently (class IIb) [2].

Target BP levels (DBP regardless of age should be less than 80 mmHg — 70–79 mmHg; SBP in patients under 65 years — 120–129 mmHg; SAD in patients over 65 years — 130–139 mmHg) are based on the data of randomized clinical trials, which showed the improvement of the prognosis (reduction of all-cause mortality, stroke, etc.) at these levels of BP.

The problem of BP level and the development of dementia in different age groups is more difficult: only in patients aged 50 years (not older) SBP ≥ 130 mmHg increases the risk of its occurrence. Therefore, this section requires clarification and, future changes may occur in recommended target BP levels primarily in elderly patients — over 65 years.

The section on the antihypertensive drugs include calcium antagonists, ACE inhibitors, angiotensin II receptor blockers, thiazides and thiazide-like diuretics as the first-line treatment for most patients (patients with uncomplicated AH, CAD, CKD). Beta-blockers can be considered as treatment only if there are specific indications, such as CHF, CAD or in young women planning pregnancy (with dihydropyridines), and sometimes can be reserved for add-on therapy as well as with spironolactone and alpha blockers. Guidelines emphasize that beta-blockers prevent the development of stroke less effective compared with other antihypertensive drugs.

The section on secondary AH contains useful additional information, but, unfortunately, it is unreasonably brief.

Thus, in the opinion of Russian experts, the new European guidelines in most cases have practical evidence-based recommendations that can be used in our country by various physicians for the management of AH. Practical use of new European guidelines will improve the effectiveness of treatment of AH in Russia and eventually reduce cardiovascular mortality.

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