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New classification of arterial hypertension according to the ACC/AHA clinical guidelines-2017: opinions of Russian experts

Summary

This article includes 7 opinions of the leading experts of different regions of Russia related to new revision of arterial hypertension (AH) classification as part of clinical guidelines that have been published in the Journal of the American College of Cardiology and in the AHA Journal of Hypertension. These changes are related to the levels of systolic blood pressure (BP) 130–139 mm Hg and/or diastolic BP 80–89 mm Hg that are classified now as the Grade 1 AH. Updated guideline also contains new target values for patients undergoing AH treatment. Opinions of Russian experts differ. Some of them think that these guidelines are inappropriate for Russia, and that it is necessary to wait for the guidelines of the European Society of Cardiology. At the same time, this change of classification can be considered as a positive phenomenon for AH detection and prevention.

Key words

Arterial hypertension, new classi*fication, clinical guidelines*

New revision of arterial hypertension (AH) classification was one of the most important events of the American Heart Association (AHA) Congress that was held in Anaheim (USA) on November, 11–15, 2017. In particular, changes in the new document are related to the levels of systolic blood pressure (SBP) 130–139 mm Hg and/or diastolic blood pressure (DBP) 80–89 mm Hg that are classified now as Grade 1 AH. The updated guideline contains also new target values of blood pressure (BP) for patients undergoing AH treatment: 130/80 mm Hg.

Revised classification became the subject of wide discussion. Russian experts also shared their opinions. The comments of academician R.G. Oganov (Moscow), professor G.G. Arabidze (Moscow) and professors O.A. Koshelskaya (Tomsk), G.A. Baryshnikova (Moscow), S.G.Kanorskii (Krasnodar), V.S Zhuk (Saint

Clinical guidelines of ACC/AHA Hypertension Guidelines (2017)	SBP and DBP, mm Hg
Normal BP	<120 and < 80
Elevated normal BP	120-129 and < 80
AH 1 grade	130-139 or 80-89
AH 2 grade	≥140 or ≥90

* Clinical guidelines were published in the Journal of the American College of Cardiology and in the AHA Journal of Hypertension.
* 2 grade AH with higher BP values should be classified as a higher AH category.

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Petersburg), and Yu.A.Bunin (Moscow) are listed here below.

Rafael G. Oganov, academician of the Russian Academy of Sciences (Moscow)

Appearance of new AH classification developed by the AHA should be considered as a positive phenomenon.

Once more it will attract attention to AH problem and will become the base for new studies. At the same time one should not hurry to introduce these guidelines in routine clinical practice. According to existent AH guidelines, AH is prevalent in all countries, effectiveness of its diagnostics and treatment is low, and adverse effects of therapy are enough frequent.

It is necessary to wait for analysis and reaction of European cardiologist, the World Health Organization (WHO) and other international organizations on these American guidelines, and it's particularly important to obtain convincing arguments of efficacy and safety of antihypertensive therapy according to the criteria mentioned in new guidelines, especially in elderly and comorbid patients.

Grigory G. Arabidze, professor (Moscow)

According to the new AHA criteria of AH, pre-hypertension is included into the system of AH, and it considers cardiologic observation at more early stages of the disease. Nevertheless, we should accept that this measure has led to almost 15% increase in the number of patients with AH in the USA. According to the AHA and JNC7 guidelines (2017), total prevalence of AH in US adults is 45,6% (95% confidence interval (CI) 43,6%-47,6%) and 31,9% (95% CI 30,1%-33,7%), respectively. At the same time, performed analysis (Paul Muntner, Robert M. Carey, Samuel Gidding, Daniel W. Jones, Sandra J. Taler, Jackson T. Wright Jr. and Paul K. Whelton. Potential U.S. Population Impact of the 2017 American College of Cardiology/American Heart Association High Blood Pressure Guideline) indicated that the number of patients to whom initial pharmacological therapy should be recommended would not increase significantly reaching 36,2% (95% CI 34,2%-38,2%) and 34,3% (95% CI 32,5%-36,2%) of adult American population, respectively, so by 1,9%. In my opinion, the same situation will be observed in Russia, because at the early stages of AH treatment strategy is focused on secondary prevention that includes risk factors correction and lifestyle modification. In Russia patients undergoing medical observation since the early stages of AH will become more compliant to pharmacological treatment only after unsuccessful long-term use of preventive and non-pharmacological measures. At the same time, I hope that treatment, aiming more aggressively to reach target levels of blood pressure, will reduce the frequency of complications and admissions to hospital. It has been proved by the results of observation in the Swedish Register [1].

Olga A. Koshelskaya, professor (Tomsk)

Decrease of diagnostic BP levels associated with 1 stage AH (SBP 130–139 mm Hg or DBP 80–89 mm Hg) and elimination of "pre-hypertension" term leads to significant and doubtfully reasonable increase of prevalence of patients with AH in population not less than by 1/3, and description of BP levels in range of 120–29 mm Hg and <80 mm Hg as "elevated BP" (instead of previously used term "pre-hypertension") brings a lot of confusion with terms in use and is hardly motivated. Use of this approach for BP evaluation will go hand in hand with 2–3 fold increase of AH prevalence in individuals younger than 45 years and in the age group above 55 years AH will be diagnosed in at least 75% of men.

Since the authors of these guidelines indicate that pharmacological therapy for reaching target BP levels <130 mm Hg is still reasonable just for patients with increased and high cardiovascular risk (CVR), suggested decrease of BP values diagnostic for its "elevated level" and 1 stage AH at least for primary prevention may, from one side, motivate patients to follow healthy lifestyle, from another side it doesn't exclude negative influence of this idea on their psychological status. Due to this it is particularly important to evaluate correctly the degree of CVR. To note, in the USA this estimation is performed with another calculator that is not used in the Russian Federation (RF).

Another reason for confusion is the single universal recommendation for reaching target BP levels <130/80 mm Hg even in elderly patients without making any difference for the presence of other cardiovascular disorders and comorbid conditions. Although the experts responsible for preparation of these guidelines highlight that these guidelines are based on vigorous evidences including the SPRINT study results [2], especially the last argument is quite controversial since in this study BP levels were checked just with ambulatory methods, and this approach decreases significantly detectable BP levels comparing with office BP measurement. More than that, claimed principles of single criteria for achieving BP are contradictory with the results of several

modern meta-analyses including the most recent one that demonstrated differences in association of BP levels reached during antihypertensive therapy with decreased risk of cardiovascular morbidity and mortality for primary and secondary prevention depending on initial BP values [3]. There are evidences indicating that antihypertensive therapy aiming to reach SBP < 130 mm Hg (comparing with target levels < 140 mm Hg) has no survival or cardiovascular prognostic benefit for patients with diabetes mellitus or if pharmacological treatment is prescribed for initial BP levels below 140 mm Hg (comparing with initial BP levels >140 mm Hg), and more than that it is associated with increased risk of death due to coronary complications [3].

Intensification of pharmacological therapy suggested with recommended criteria of BP evaluation and decreased target BP levels will be applicable to many patients (approximately to 1/3 of them) that may lead to unmotivated expenses and potential growth of adverse effects frequency related to more aggressive antihypertensive therapy.

Taking into account all above-mentioned facts, I consider the use of suggested criteria of BP evaluation in the RF unmotivated and unreasonable.

Increased precision of BP measurement, necessity of ambulatory BP control and importance of non-pharmacological treatment look satisfactory and promising.

Galina A. Baryshnikova, professor (Moscow)

Revision of AH classification was not unexpected since it was pre-determined by the results of the SPRINT study [2]. This approach has its followers and enemies. Previously in 2007 it was recommended to reach target BP levels <130/80 mm Hg in the groups of high and very high risk, but soon after this recommendation was refused. The European Society of Cardiology (ESC) highlighted that just non-pharmacological treatment should be used in case of elevated normal BP. Using the old criteria, we managed to reach target BP levels just in 22–24% of patients with AH, and it's very likely that use of more strict criteria will make it impossible to reach target BP levels in the majority of patients. Nowadays it may be difficult to persuade them to accept treatment if their BP values exceed 160 mm Hg, and this task starts to look almost impossible for BP values around 130 mm Hg. It explains the motivation to use just non-pharmacological methods for treatment of pre-hypertension.

In my opinion, wide use of fixed drug combinations should be encouraged in several groups of patients including patients with low and medium CVR in order to provide higher compliance, and it is necessary to lower BP gradually taking into account individual tolerability especially in elderly patients.

Another point is that the SPRINT study demonstrated that clinical practitioners should not be afraid to lower down BP values below 125–130 mm Hg and that they should not hurry to reduce doses and number of fixed drug combination components in case of good tolerability of this BP levels by patients.

I prefer well-analyzed approaches, and it would be also interesting to know the opinion of the ESC and the European Society of Hypertension.

Sergei G. Kanorskii, professor (Krasnodar)

It is well known since a while that the risk of cardiovascular complications grows linearly with elevation of BP levels starting from 115/75 mm Hg, according to the results of several population studies (Lewington S. et al., 2002). These data contradicted with results of numerous randomized trials of antihypertensive therapy that reported J-shaped phenomenon: increased risk of cardiovascular complications in case of SBP < 130 mm Hg. At the same time it was possible to avoid the development of J-shaped phenomenon in the SPRINT study [2]. According to the opinion of several experts, it has happened due to the use of innovative method of BP registration (automatic oscillometric monitor) that tended to lower down measured BP values comparing with traditional office approach. New American AH classification (2017) eliminates contradiction between population observations and the tasks of modern antihypertensive therapy. At the same time it is important for clinical practitioner to take into account individual tolerability of lower BP levels by patients.

Vadim S. Zhuk, professor (Saint Petersburg)

The thing that we witness now is reasonable evolution of guidelines that resonated strongly in 2014. I am talking about the American document JNC8 that eliminated Grade 3 AH and established BP level of 160/90 as the final one in AH classification.

New guidelines established on November 11–15 in Anaheim make our emotive perception shift from rational acceptation to completely surrealistic feeling. Nobody knows the real aim behind the actions of American experts that has turned one third part of

healthy individuals into patients with AH! I would like to avoid thinking that the cause of it is the reformation of healthcare system or investing or financing in pharmacological industry. I would like to believe that the real goal was beneficial, but the motivation behind it remains unclear. If this decision is based on results of the SPRINT study [2] and similar ones it is worth to remember that BP was measured using ambulatory techniques different from common clinical practice. Apart from it, could more than 9000 patients reflect the real population situation with all its diversity?

Will it be easy to inform patient that BP 130/80 mm Hg is considered a disease and should be treated? Calm revision of this document helps to understand that from several points of view it is not so radical. For example, it separates target and threshold BP levels. What does it give? Although target BP values are defined as <130/80 mm Hg for everybody, old threshold BP values (140/90 mm Hg) should be used for individuals without the risk of atherosclerotic cardiovascular diseases and in patients with history of lacunar stroke for its secondary prevention.

The scale of risk evaluation recommended in this document has not been validated yet in European and Russian populations.

Another aspect that should be taken carefully is the definition of threshold and target BP levels in elderly patients (age >75 years, or 80 and 85 years) and in healthy young individuals that may have BP values around 130/80 mm Hg and more in several different conditions.

Yury A. Bunin, professor (Moscow)

According to this guideline, it is recommended to use antihypertensive drugs for lowering down BP starting from SBP ⩾130 mm Hg or DBP ⩾ 80 mm Hg if patients have other cardiovascular diseases (secondary prevention) or 10-year risk of atherosclerotic cardiovascular disease development (mortality due to coronary heart disease (CHD), non-fatal myocardial infarction, fatal and non-fatal stroke) estimated with the ASCVD scale. If all above-mentioned characteristics are absent pharmacological treatment should start for SBP⩾140 mm Hg or DBP⩾90 mm Hg. So it becomes clear that the category of patients requiring pharmacological treatment of AH widens significantly.

The first line antihypertensive drugs include thiazide diuretics, dihydropiridine and non-dihydropiridine calcium channel blockers, angiotensin-converting enzyme inhibitors, and sartans. Other antihypertensive drugs including beta-blockers are advised to be used as the second line drugs. Patients with Grade 1 AH should start pharmacological treatment from one first line drug, whereas Grade 1 AH requires using two first line drugs.

These guidelines are concluded with detailed algorithm of using various antihypertensive drugs for various comorbid conditions (CHD, chronic heart failure, atrial fibrillation, dementia, diabetes mellitus, stroke, etc).

Conflict of interest: None declared.

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