

POINT-OF-VIEW

WHAT ARE WE DEALING WITH – ELEVATED BLOOD PRESSURE ONLY OR THE WHOLE SYNDROME OF ARTERIAL HYPERTENSION?

Aleksandras Laucevičius, MD, FESC, FACC

Clinic of Heart Diseases, Vilnius University, Lithuania

The American guidelines on arterial hypertension – JNC 7 and the guidelines of European Society of Hypertension (ESH) conjointly with the European Society of Cardiology (ESC) for the management of hypertension – have been issued recently. The main change in JNC 7 as compared to JNC 6 is a new blood pressure (BP) classification system. The major differences between JNC 7 and the new ESH/ESC guidelines include methods of BP classification. Particular attention is given to the global risk of patients and more flexible treatment recommendations are provided in the European guidelines emphasizing the clinical judgment based on individual management of patients.

The category named “prehypertension,” defined as systolic blood pressure (SBP) 120-139 mmHg or diastolic blood pressure (DBP) 80-89 mm Hg, a range designated as “high normal” or “normal” in JNC 6, is introduced in JNC 7 (Table 1). In JNC 7 “normal” BP is now defined as SBP < 120 mm Hg and DBP < 80 mm Hg, previously in JNC 6 it was called “optimal”. JNC 7 has abolished both the “optimal” and the “high-normal” categories that were present in JNC 6. The “prehypertension” category, introduced in JNC 7 and based on the recognition of slightly elevated blood pressure that increases cardiovascular risk and lifestyle modification to patients, is needed to reduce blood pressure levels and prevent development of hypertension in the general population. The main concern about the new “prehypertension” category is that people, who previously considered themselves healthy (with “normal” BP), will now believe that they are ill. This will add a large group of subjects to the population of the hypertensive patients. It is not clear

how physicians would inform the previously healthy, with “normal” blood pressure people that they belong to the group of patients. On the other side, the diagnosis of prehypertension in some patients may be inadequate. Let’s imagine a young person with minimal elevation of blood pressure (“high normal”) who has the distinct signs of metabolic syndrome – abdominal obesity, disglycemia and dislipidemia. Such a person is already a high risk patient and needs not only the lifestyle changes but the medical treatment as well. Prehypertension, in fact, ignores other components of arterial hypertension syndrome that, additionally to the level of blood pressure, may be responsible for cardiovascular risk in hypertensive patients. According to JNC 7, many high-risk patients (i.e. with metabolic disorders) should be assigned to the category of prehypertension and the awareness of physicians fails in these cases. So speaking about prehypertension based on slightly elevated blood pressure only, seems to be inaccurate. Elevated blood pressure in the JNC-7 guidelines is defined as “stage 1 hypertension” and doesn’t differ from the earlier definition (SBP 140-159 or DBP 90-99 mm Hg), but the stages 2 and 3 marked out in JNC 6 have been combined into one category – “stage 2 hypertension” (≥ 160 mm Hg or DBP ≥ 100 mm Hg). In my opinion, this is a positive change in classification – it makes the classification of elevated blood pressure more practical. The blood pressure classification differences between JNC 6 and JNC 7 are presented in Table 1.

In the new European guidelines, the classification of blood pressure remains the same as in previous classifications – JNC 6 and the 1999 World Health Organization-International Society of Hypertension

Table 1. Classification of blood pressure for adults aged ≥ 18 Years: JNC 7 vs. JNC 6

<i>JNC 7 Blood Pressure Category</i>	<i>JNC 6 Blood Pressure Category</i>	<i>SBP (mmHg)</i>	<i>and/or</i>	<i>DBP (mmHg)</i>
Normal	Optimal	<120	and	<80
Prehypertension		120-139	or	80-89
--	Normal	<130	and	<85
--	High-normal	130-139	or	85-89
<i>Hypertension:</i>	<i>Hypertension:</i>			
Stage 1	Stage 1	140-159	or	90-99
Stage 2		≥ 160	or	≥ 100
--	Stage 2	160-179	or	100-109
--	Stage 3	≥ 180	or	≥ 110

DBP – diastolic blood pressure; JNC – Joint National Committee; SBP – systolic blood pressure

Table 2. Classification of blood pressure for adults aged ≥ 18 years: MDTAH-2003

<i>Blood Pressure Category</i>	<i>Systolic (mmHg)</i>		<i>Diastolic (mmHg)</i>
Optimal	<120	and	<80
Normal	120-129	and	80-84
High-normal	130-139	or	85-89
<i>Elevated Blood pressure:</i>			
Grade 1	140-159	or	90-99
Grade 2	≥ 160	or	≥ 100
Isolated systolic hypertension*	≥ 140	and	< 90

* Pulse pressure >50 mmHg

Guidelines for the Management of Hypertension.

So, in both new American and European guidelines the grades of elevated blood pressure are identified with the stages of hypertension. It seems that the stages of hypertension (stage 1 and 2 in JNC 7 and stage 1, 2 and 3 in European guidelines) are based solely on the level of elevated blood pressure.

As it is pointed by Norman Kaplan, Jay Cohn and others, arterial hypertension is not only elevated blood pressure but the entity consisting also of hypertensive arteriopathy, cardiopathy, nephropathy and a wide variety of cardiovascular risk factors. So it would be more logical to identify the "stage of hypertension" by scoring the risk of a patient. In that sense the European guidelines are more flexible than JNC 7 and place more emphasis on the total cardiovascular risk in guiding the management of hypertension.

Summarizing my point-of-view on the blood pressure degrees, I would like to present the classification of BP used in the recent Lithuanian "Methodics of diagnostics and treatment of arterial hypertension" (MDTAH-2003) where "optimal", "normal" and "high-normal" BP, two grades of elevated blood pressure and systolic hypertension are marked-out (Table 2).

The burden of hypertension in the Lithuanian MDTAH-2003 is described according to the established risk of patients:

1. Mild-moderate risk – high-normal BP or grade 1 elevation of BP together with one to three risk factors

(excluding insulin resistance and/or diabetes).

2. High-very high risk – grade 2 BP solely; high-normal BP or any grade elevation of BP and more than three risk factors (insulin resistance and/or diabetes solely is sufficient); any hypertension conditioned target - organ damage or diseases complicating the course or the treatment of hypertension.

We do agree with JNC 7 not to distinguish grade (stage) 2 and grade (stage) 3 in the classification of blood pressure, because starting from the grade 2 BP patients are always in high-very high risk group either they have target – organ damage or not and the combined drug therapy must be applied. I think that the scheme proposed in the new ESH/ESC Guidelines – "Stratification of risk to quantify prognosis" with the estimation of the average, low added, moderate added high, added very high risk is too complicated for everyday use and is more suitable for scientific epidemiological investigations.

Before starting the long-term treatment of arterial hypertension, MDTAH-2003 recommends the detailed formulation of the diagnosis. In the diagnosis of primary arterial hypertension the degree of blood pressure before starting antihypertensive therapy is always mentioned as well as the stratified risk of a patient: "mild – moderate" or "high-very high" estimated on the basis of all entity of hypertension syndrome. That helps to keep a physician, taking care over the hypertensive patient, in awareness of reaching the target level of blood pressure as well as the efforts of permanent cardiovascular protection means.

References

1. Joint National Committee on Prevention, Detection, and Treatment of High Blood Pressure. The Sixth Report of the Joint National Committee on Prevention, Detection, and Treatment of High Blood Pressure (JNC VI). *Arch Intern Med* 1997; 157: 2413-2446.
2. Guidelines Subcommittee. 1999 World Health Organization-International Society of Hypertension Guidelines for the Management of Hypertension. *J Hypertens* 1999; 17: 151-183.
3. The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. The JNC 7 Report. *JAMA* 2003; 289: 2560-2572.
4. 2003 European Society of Hypertension – European Society of Cardiology guidelines for the management of arterial hypertension. *J Hypertens* 2003; 21: 1011-1053.
5. Methodics of diagnostics and treatment of arterial hypertension (MDTAH). Confirmed by the Minister of Health of Lithuania on 11 June 2003. (In Lithuanian)