EDITORIAL

Clinical Practice Guidelines for Hypertension 2003. Do They Clarify or Confuse?

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In May 2003 the almost simultaneous publication of the Update on Clinical Practice Guidelines by The Spanish Society of Cardiology, an initial document of the VII Report of Joint National Committee (JNC), and the European Society of Cardiology and European Society of Hypertension Guidelines in another jointly issued document, created controversy. The points of disagreement basically concerned the classification of hypertension, the choice of treatment strategy on the basis of individual cardiovascular risk, and the choice of initial treatment. A detailed analysis of the three documents, however, reveals more points of concurrence than of actual disagreement.

A category between normal blood pressure and established hypertension, classified as «prehypertension» in the VII JNC Report and as «normal-high BP» in the Spanish and European Society of Cardiology Guidelines, includes a population at high risk for developing hypertension and in which lifestyle modifications are needed. In some specific clinical situations, basically in vascular high-risk patients, there is broad consensus on the definition of therapeutic groups based on scientific evidence from large clinical trials. In patients not included in a group with a specific indication, any drug included in the 5 main therapeutic groups can be used as the first step in treatment; in this group of patients thiazide diuretics play a preponderant role. The main objective of hypertension treatment is to obtain maximal reduction in overall cardiovascular risk, which requires correction of all associated risk factors and appropriate treatment for target organs likely to be affected.

Key words: *Hypertension. Cardiovascular risk. Hypertension classification. Treatment update.*

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Guías sobre el tratamiento de la hipertensión arterial 2003: ¿aclaran o confunden?

La publicación casi simultánea, en mayo de 2003, de la actualización de las guías de práctica clínica de la Sociedad Española de Cardiología (SEC) en hipertensión arterial, de un documento inicial del VII Informe del Joint National Committee (JNC) y las Guías de las Sociedades Europea de Cardiología y Europea de Hipertensión en otro documento conjunto ha suscitado polémica por algunos puntos de discrepancia que afectan fundamentalmente a la clasificación de la hipertensión, a la estrategia de tratamiento basada o no en el riesgo cardiovascular individual y a la elección del tratamiento inicial. El análisis detallado de los tres documentos presenta, sin embargo, más puntos de encuentro que verdaderas discrepancias.

Existe una categoría situada entre la presión arterial normal y la hipertensión arterial establecida, calificada como prehipertensión en el VII informe del JNC y como «presión arterial normal-alta» en las guías de la SEC y europea, que incluye a una población con alto riesgo de convertirse en hipertensa en la que deben aplicarse medidas higiénico-dietéticas. Existen situaciones clínicas específicas, fundamentalmente en pacientes con un alto riesgo vascular, en las que hay un amplio consenso sobre las indicaciones de los grupos terapéuticos según la evidencia científica aportada por amplios ensayos clínicos. En los pacientes que no estén incluidos en algún grupo con indicación específica puede utilizarse como primer fármaco cualquiera de los cinco grandes grupos terapéuticos. Los diuréticos tiazídicos tienen un papel preponderante en este grupo de pacientes. El objetivo principal del tratamiento del hipertenso es conseguir la máxima reducción del riesgo cardiovascular total, lo cual requiere la corrección de todos los factores de riesgo asociados y el correcto tratamiento de la posible afección de los órganos diana.

Palabras clave: *Hipertensión arterial. Riesgo cardiovascular. Clasificación de la hipertensión arterial. Actualización del tratamiento.*

Last May saw the almost simultaneous publication of the Update on Clinical Practice Guidelines for Hypertension by The Spanish Society of Cardiology (SSC),[1] an initial document of the VII Report of the Joint National Committee (JNC),[2] and the Guidelines

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of the European Society of Cardiology (ESC) and the European Society of Hypertension.[3] This necessitates a reconsideration of current diagnostic and therapeutic criteria. As was foreseen, controversy has been aroused in some topics of apparent discrepancy. This in itself is positive, as it revitalizes discussion and leads to further clarification of concepts.

Fewer discrepancies exist concerning diagnostic issues. All 3 documents concur on the advantages of measuring microalbuminuria, preferably by 24-hour measurement, or as the albuminuria/creatinine ratio. Microalbuminuria is an indicator of vascular damage, and has independent prognostic value both in patients with diabetes and in the general population.[4] Measurement of microalbuminuria, which is cheap and easy, can distinguish patients with a higher vascular risk and a greater probability of developing end-stage kidney failure, with the corresponding therapeutic implications.

The importance of electrocardiography (ECG), widely used by cardiologists to evaluate the cardiac repercussions of hypertension, is emphasized. It provides the diagnostic information required to establish individual therapy and makes it possible to detect patients with atrial fibrillation, left ventricular hypertrophy, conduction disorders and ischemic heart disease, all disorders for which therapy is based on scientific evidence.

Differences in the classification of hypertension have been a major point of controversy (Table 1). The VII Report of the JNC classifies persons with blood pressure measurements in the range of 120-139/80-89 mm Hg as having «pre-hypertension,» whereas the Guidelines of the SSC and the ESC use the term «high normal» blood pressure in those individuals with blood pressure measurements of 130-139/85-89 mm Hg. The main criticism against the VII Report of the JNC is that it may create alarm among the general population, and may lead to an excessive increase in the number of individuals with hypertension and individuals who could potentially become hypertensive. The following considerations should therefore be taken into account:

«Pre-hypertension» measurements under the new JNC-VII classification does not mean that all individuals in this category will eventually develop hypertension. Indeed, no long-term studies exist to calculate the percentage of persons with «pre-hypertension» who will eventually become truly hypertensive.

Creation of a category between normal blood pressure and hypertension is not new. This was proposed in the VI Report of the JNC5 and in the WHO-ISH Guidelines published in 1999.[6] We will leave aside here terminological issues regarding the advantages of «pre-hypertension» rather than «high normal» blood pressure; nor do we mean to disregard the inclusion of persons with blood pressure measurements of 120-130/80-85 mm Hg in the pre-hypertension group of the VII Report. The creation of this category is based on scientific evidence published by the authors of the Framingham Study,[7] according to which individuals (especially women) with blood pressure measurements of 120-139/80-89 mm Hg have a greater risk of cardiovascular complications compared to those who have optimal blood pressure measurements, i.e. lower than 120/80 mm Hg. Criticism of this classification may be partly due to the fact that people in Mediterranean countries have a lower cardiovascular risk than those in the Framingham study.[8,9] Reducing the measurements considered normal from 130/89 mm Hg to <120/<80 mm Hg in absolute terms would thus be inappropriate in this population.

The presence of this category is nevertheless important to reinforce the concept that blood pressure and vascular risk form part of a continuum rather than an all or nothing phenomenon. The risk of developing hypertension in this borderline group is very high if lifestyle is not modified and dietary measures are not introduced to reduce the daily intake of calories and salt, to moderate alcohol consumption, suppress smoking and encourage regular physical exercise. All three documents are in agreement on these points.

Cardiovascular disease is the primary cause of death in the western world. The WHO, in its October 2000 report, highlighted the fact that hypertension is one of the three leading causes of death worldwide and that its control would reduce the rate of cardiovascular disease by half.[10] It therefore seems reasona-

TABLE 1. **Classification of hypertension in adults**

Blood pressure measurements		Category[a]	Category[a]
Systolic BP (mm Hg)	Diastolic BP (mm Hg)	ESC-ESH SSC	JNC-VII
<120	<80	Optimal[b]	Normal
120-129	80-84	Normal	Prehypertension
130-139	85-89	High normal	Prehypertension
		Hypertension[c]	Hypertension[c]
140-159	90-99	Grade 1	Grade 1
160-179	100-109	Grade 2	Grade 2
≥180	≥110	Grade 3	Grade 2
≥140	<90	Isolated systolic hypertension	

[a]Providing they are not taking antihypertensive drugs and have no acute disease. When a patient's systolic and diastolic blood pressure measurements fall into different categories, the higher category applies.
[b]The optimal BP in terms of cardiovascular risk is less than 120/80 mm Hg. Nevertheless, the presence of markedly low BP measurements warrants evaluation to determine their clinical significance.
[c]Taking as baseline the average of two or more readings carried out on two or more visits after the initial evaluation.
ESC indicates European Society of Cardiology; ESH, European Society of Hypertension; SSC, Spanish Society of Cardiology; JNC-VII, Seventh Report of Joint National Committee; BP, blood pressure.

ble to intensify efforts to improve the diagnosis and management of this disease. All attempts to hold the scientific community and the general population accountable for the size of this social, economic and health problem are justified. Scientific societies should be fully involved, as the appropriate diagnosis and management of patients with hypertension can greatly improve the prognosis. Data from the year 2000 show that the percentage of adequately controlled patients with hypertension in USA was 34%.[2] In Spain the extent of control among patients with hypertension and associated cardiac disease was less than 20% according to the Cardiotens Study.[11]

Treatment algorithms differ slightly between the three reports. The VII Report of the JNC aims to be concise and clear, as the authors recognize that the complexity of previous reports among other reasons interfered with maximum benefit. This document is based on blood pressure measurements and the presence of specific situations in which evidence exists for particular groups of drugs. The European Guidelines, derived from the WHO/ISH 1999 Guidelines, are more exhaustive and are based on stratification of cardiovascular risk in each subgroup as the main criterion for therapeutic intervention, as well as systolic and diastolic blood pressure measurements. Their practical application is thus less straightforward, although there are no substantial differences when the two documents are compared objectively.

The indications for treatment, which are based on large clinical trials, are similar in the different groups for specific clinical situations such as heart failure, ischemic heart disease, diabetes mellitus, chronic kidney disease, concomitant cardiovascular disease, left ventricular hypertrophy and a high cardiovascular risk profile. It is in the choice of the initial pharmacological agent that discrepancies arise. The VII Report recommends that patients with Grade 1 hypertension (140-159/90-99 mm Hg) and no specific indications generally start with a thiazide diuretic, and that an angiotensin converting enzyme (ACE) inhibitor, an angiotensin II receptor antagonist (ARA II), a beta-blocker, a calcium antagonist, or a combination of these agents be considered as alternative therapies. The recommendation for patients with Grade II hypertension (>160/>100 mm Hg) is the combination of 2 drugs, usually a thiazide diuretic with an ACE inhibitor, ARA II, beta-blocker or calcium antagonist. The SSC Guidelines suggest that in patients with specific indications and in those with isolated hypertension requiring pharmacological control, the main aim is to control blood pressure. It is only when blood pressure returns to normal that the benefits of particular therapeutic groups can be demonstrated under specific conditions which require the combination of two drugs in at least two-thirds of all patients. A thiazide diuretic is recommended initially or else as the first associated drug because of its therapeutic efficacy, its specific indications for older patients, for patients with isolated systolic hypertension or cardiac insufficiency, and for Black patients independently of economic reasons.

The European Guidelines advocate individualized treatment and indicate, as do the SSC Guidelines, that the main benefit of antihypertensive therapy is the reduction of blood pressure *per se*. The five main groups of antihypertensive drugs (diuretics, beta-blockers, calcium antagonists, ACE inhibitors and ARA-II) can all be used for initial treatment, although the Guidelines go on to say that 2 or more drugs are often required to achieve the desired blood pressure measurements. Other factors which influence the choice of initial drug include cost, past use of antihypertensive drugs, risk profile and patient's preference. As can be seen, all three documents discuss the same ideas, but with differing emphasis. However, they all respect the specific indications for each therapeutic group and accept the possibility of using any of them as first-line therapy. All 3 documents also discuss the well-founded reasons for administering diuretics as first-choice antihypertensive agents, although JNC-VII does so more explicitly and forcefully.

Treatment for other associated risk factors is dealt with in all three documents, albeit with greater emphasis on updating information in the Spanish Guidelines and the European Guidelines. The control of associated risk factors is vital to reduce the overall cardiovascular risk, which is the ultimate goal of therapy in patients with hypertension. Patients with associated cardiovascular disease or diabetes mellitus should receive treatment with statins if their total cholesterol is above 135 mg/dL, with the aim of reducing LDL cholesterol levels to below 100 mg/dL. Statins should also be given to patients at high cardiovascular risk if their total cholesterol is above 135 mg/dL, even if they do not have active cardiovascular disease.

In conclusion, the publication of clinical practice guidelines on hypertension «clarify and update» concepts to provide improved management for patients with hypertension. The most important points of consensus are as the following:

1. The presence of a category between normal blood pressure and established hypertension, called «pre-hypertension» in the VII Report of the JNC and «high normal» blood pressure in the Spanish and European Guidelines. This category includes persons at high risk of becoming hypertensive and in whom lifestyle changes should be initiated. Although persons in southern Europe and Mediterranean areas have a lower vascular risk than persons of Anglo-Saxon origin, those whose blood pressure is between 130/85 and 139/89 mm Hg should probably be included in this category.

2. In addition to clinical history, routine laboratory tests and ECG study, evaluation of the hypertensive patient should include measurement of microalbuminuria as an independent indicator of vascular risk with prognostic value, both in patients with diabetes and in the general population.

3. Adoption of a healthy lifestyle is crucial in preventing hypertension in persons with high normal blood pressure, and indispensable for adequate control of patients with overt hypertension.

4. Specific situations exist in high-risk patients, such as those with left ventricular hypertrophy, heart failure, ischemic heart disease, kidney disease or previous stroke, for which there is general consensus about the indications for the five main therapeutic groups based on scientific evidence obtained from large clinical trials.

5. Patients requiring drug therapy but who are not included in any of the specific groups can be treated with any of the drugs from the five main therapeutic groups as the initial anti-hypertensive agent. Thiazide diuretics should be the main agent in these patients because of their therapeutic efficacy, good clinical tolerance, specific indications and low cost.

6. The main aim of therapy in patients with hypertension is to achieve maximal reduction in the total level of cardiovascular risk. This requires not only reducing blood pressure levels, but also treatment of other associated risk factors, including smoking, dyslipidemia or diabetes, and the appropriate management of any target organ damage.

REFERENCES

1. González-Juanatey JR, Mazón P, Soria F, Barrios V, Rodríguez-Padial L, Bertomeu V. Actualización (2003) de las guías de práctica clínica de la Sociedad Española de Cardiología en hipertensión arterial. Rev Esp Cardiol 2003;56:487-97.
2. The Seventh Report of Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure: the JNC 7 report. JAMA 2003;289:2560-72.
3. 2003 European Society of Hypertension-European Society of Cardiology guidelines for the management of arterial hypertension. J Hypertens 2003;21:1011-53.
4. Gerstein HC, Mann JF, Yi Q, Zinman B, Dinneen SF, Hoogwerf B, el al. Albuminuria and risk of cardiovascular events, death, and heart failure in diabetic and non diabetic individuals. JAMA 2001;286:421-6.
5. The Sixth Report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure. Arch Intern Med 1997;157:2413-46.
6. 1999 World Health Organization-International Society of Hypertension Guidelines for the management of hypertension. Guidelines Subcommittee. J Hypertens 1999;17:151-83.
7. Vasan RS, Larson MG, Leip EP, Kannel WB, Levy D. Assessment of frecuency of progression to hypertension in non-hypertensive participants in The Framingham Heart Study. Lancet 2001;358:1682-6.
8. Marrugat J, Solanas P, D'Agostino R, Sullivan L, Ordovás J, Cordón F, et al. Estimación del riesgo coronario en España mediante la ecuación de Framingham calibrada. Rev Esp Cardiol 2003;56:253-61.
9. Conroy RM, Pyörälä K, Fitzgerald AP, Sans S, Menotti A, De Backer G, et al. Estimation of ten-year risk of fatal cardiovascular disease in Europe: the SCORE project. Eur Heart J 2003;24:987-1003.
10. The World Health Report 2002. Reducing risks, promoting healthy life. Geneva: World Health Organization, 2002; p. 58.
11. González-Juanatey JR, Alegría Ezquerra E, Lozano Vidal J, Llisterri Caro J, García Acuña J, González Maqueda I. Impacto de la hipertensión en las cardiopatías en España. Estudio Cardiotens 1999. Rev Esp Cardiol 2001;54:139-49.