

Regarding Hypertension Treatment are we following Worldwide Tendencies?

Paulo César B. Veiga Jardim

Programa de Pós-Graduação em Ciências da Saúde da Faculdade de Medicina da Universidade Federal de Goiás, Goiania, Goiás – Brazil

Between July 2012 and March 2014, the Department of Arterial Hypertension of the Brazilian Society of Cardiology prepared and published four documents addressing some specific aspects on hypertension care¹⁻⁴. Similarly, between July 2013 and January 2014, major international institutions also produced documents updating their guidelines regarding hypertension⁵⁻⁹. Some of the Brazilian documents were published before the international ones, while others were published concurrently.

The first Brazilian document, published in 2012, addressed resistant arterial hypertension¹, and extensive review of the subject was performed based on evidence available at the time. In addition to definition, care with diagnosis and possible causes, there was a concern regarding that most cases are, in fact, pseudo-resistant cases, mainly caused by lack of adherence, while highlighting the importance of possible secondary hypertension. The document finally proposed treatment that included the classic and known - but almost always overlooked - nonpharmacological treatment and an objective indication of pharmacological treatment, which takes into account the use of full doses of drugs that inhibit the renin-angiotensin-aldosterone system (ACEI or ARB), of a calcium channel antagonist and long-acting, of a thiazide diuretic and, as a fourth drug, proposed the use of spironolactone. The following was the indication of a beta-blocker with vasodilating action or a drug with central action.

When comparing the Brazilian document with the guidelines published in 2013 and 2014 by ESH/ESC⁵, JNC-8⁶, ASH/ISH⁷ and CHEP⁸, no significant differences were observed; however, it was verified that the ESH/ESC and the CHEP documents did not have specific recommendations for resistant hypertension, suggesting only the conventional algorithm. The JNC-8 and ASH/ISH documents propose as a fourth drug the free choice between aldosterone antagonist, beta-blockers or drug with central action. In fact, as described in the Brazilian document, there is no definitive evidence on the fourth drug to be used, and a true Brazilian ongoing multicenter study¹⁰, which is at the final stages of implementation, should partially answer this question, at least regarding this aspect.

Keywords

Hypertension/trends; Antihypertensive drugs /diagnostic use; Drug Combinations.

Mailing Address: Paulo César B. Veiga Jardim •
Rua 115-F n 135, Setor Sul. Postal Code 74085-300, Goiania, GO – Brazil
E-mail: fvjardim.ufg@gmail.com, fvjardim@terra.com.br

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The second document was published in mid-2013, dealing specifically with the care of hypertensive diabetic patients², and was also published before the international documents. On this subject there are major differences between the several guidelines (Table 1), although they are actually small details that will ultimately have a minor effect on the final result.

The Brazilian guidelines define a target BP of around 130 x 80 mmHg, a value that was also adopted by CHEP⁸ in their document published in early 2014. The ESH/ESC⁵ document defined a BP target of 140 x 80-85. The American Diabetes Association (ADA)⁹ defined a target BP < 140 x 80 mmHg, while JNC-8⁶ and ASH/ISH⁷ defined a target BP < 140 x 90 mmHg for this group. The preferred drugs were also defined, with ACE inhibitors or ARBs being mandatory for diabetics with kidney dysfunction, whereas any one of four classes (ACEIs, ARBs, diuretics, calcium channel antagonists) were also defined for those without kidney dysfunction. When in combination, ARBs or ACE inhibitors with calcium channel antagonists showed to be advantageous, although ACE inhibitors or ARBs associated with diuretics can also be used.

As complementary drugs, beta-blockers and drugs with central action are part of the associations. JNC-8 and CHEP make the same recommendations as the Brazilian document does for drug use. The initial use of ACEI or ARB for all diabetics is recommended by ESH/ASH, ASH/ISH and ADA, and, regarding the drug association, the recommendations are similar to the others. Additionally, the Brazilian document established targets for glycemic control (HbA1c < 7%), similar to that proposed by the ESH/ESC and the ADA, while the JNC-8, ASH/ISH and CHEP did not address this issue. Targets for blood lipid control (LDL < 100 mg/dL for those age < 40 years without CVD and < 70 mg/dL for those aged > 40 years and with CVD) have also been defined.

Similarly, ESH/ESC and ADA established the same values for LDL-CT for patients with associated CVD (LDL-CT < 70 mg/dL), whereas target LDL-CT < 115 mg/dL was established for diabetics with moderate to high risk by ESH / ESC and the ADA established LDL-TC < 100 mg/dL for those with low risk. The JNC-8, ASH / ISH and CHEP documents did not address these aspects, either.

The third issue revised by DHA / SBC is associated with pre-hypertension, white-coat hypertension and masked hypertension, and appeared in ABC in early 2014³. Conceptual, diagnostic, prognostic, and, finally, conduct aspects were discussed. In all cases, recommendations were made regarding an accurate diagnosis, special attention to the identified cases and conduct; all of them received indication for lifestyle changes with frequent monitoring. With regard to drug therapy, the same therapeutic regimen used in common hypertensive patients was indicated for those with masked hypertension.

Table 1 – Comparison between documents for patients with type 2 diabetes

Document	Target BP	Target HbA1C	Target LDL-CT	Initial drug
DHA/SBC ²	130 x 80	< 7%	< 100 without CVD	ACEI/ARB
			< 70 > 40 years	CCA/DIUR
			< 70 with CVD	
ESH/ESC ⁵	140 x 80-85	< 7%	< 115 mod/high CVR	ACEI/ARB
			< 70 with CVD	
JNC-8 ⁶	< 140 x 90	–	–	ACEI/ARB
				CCA/DIUR
ASH/ISH ⁷	< 140 x 90	–	–	ACEI/ARB
CHEP ⁸	< 130 x 80	–	–	ACEI/ARB
				CCA/DIUR
ADA ⁹	< 140 x 80	< 7%	< 100 low CVR	ACEI/ARB
			< 70 with CVD	

ACC: calcium channel antagonist; ADA: American Diabetes Association; ASH: American Society of Hypertension; ARB: angiotensin receptor blocker II; CHEP: Canadian Hypertension Education Program; DHA-SBC: Department of Arterial Hypertension of SBC; DIUR: diuretics; ESC: European Society of Cardiology; ESH: European Society of Hypertension; HbA1C: glycated hemoglobin; ACEI: angiotensin-converting enzyme inhibitor; ISH: International Society of Hypertension; JNC-8: 8 Joint National Committee; LDL-CT: LDL cholesterol; BP: blood pressure; CVR: cardiovascular risk; CVD: cardiovascular disease.

For individuals with white-coat hypertension, careful monitoring was indicated without the use of drugs, while leaving open the possibility of careful drug management for individuals with very high risk or target-organ injury. As for patients with prehypertension, according to the existing evidence, they did not receive an indication for drug treatment, while leaving open the possibility of this indication in selected cases only, in patients at high cardiovascular risk, with diabetes or established renal injury, always dependent on individualized medical decision. Additionally, in these cases, a large study being carried out in Brazil aims to answer the question of whether or not antihypertensive drugs should be used at low doses in this group of patients¹¹.

Again, the DHA document is absolutely consistent with the ESH/ESC one. The ASH / ISH document makes a passing reference to prehypertension and also indicates the non-pharmacological treatment for these cases. Moreover, it does not make any comments about white-coat hypertension and masked hypertension. The JNC-8 and the CHEP do not mention this issue in their documents.

Finally, the last DHA publication describes a matter of considerable interest, which is the combination of drugs⁴.

This document is absolutely in line with all the others and, moreover, gives recommendations on the use of associations, clearly, didactically and based on all available evidence. This type of information will certainly facilitate medical practices, allowing better treatment options.

Therefore, one can see that the Brazilian scientific community has been consistently working, using the existing information in an up-to-date manner and aligned with other international organizations that deal with this issue. There are small differences in documents related to diabetic patients and they are present in all guidelines, demonstrating that it is not different information, but the lack of definitive information that ultimately leads to this diversity of options.

Finally, it is worth a reflection, emphasizing what is defined in several publications in their closing remarks. All of them seek to provide support to good medical practice, based on the set of the best currently available scientific information. However, no guideline can replace clinical judgment and careful medical management targeted for each specific type of patient, based on the principles of science and bioethics.

References

1. Alessi A, Brandão AA, Coca A, Cordeiro AC, Nogueira AR, Diógenes de Magalhães F, et al; Departamento de Hipertensão Arterial da Sociedade Brasileira de Cardiologia I. Posicionamento Brasileiro sobre hipertensão arterial resistente. *Arq Bras Cardiol.* 2012;99(1):576-85. Erratum in *Arq Bras Cardiol.* 2013;100(3):304.
2. Alessi A, Bonfim AV, Brandão AA, Feitosa A, Amodeo C, Alves CR, et al; Departamento de Hipertensão Arterial da Sociedade Brasileira de Cardiologia I Posicionamento Brasileiro em hipertensão arterial e diabetes mellitus. *Arq Bras Cardiol.* 2013;100(6):491-501.
3. Alessi A, Brandão AA, de Paiva AM, da Rocha Nogueira A, Feitosa A, de Campos Gonzaga C, et al; Departamento de Hipertensão Arterial da Sociedade Brasileira de Cardiologia. I Posicionamento Brasileiro sobre pré-hipertensão, hipertensão do avental branco e hipertensão mascarada: diagnóstico e conduta. *Arq Bras Cardiol.* 2014;102(2):110-8.
4. Póvoa R, Barroso WS, Brandão AA, Jardim PC, Barroso O, Passarelli O Jr, et al; Departamento de Hipertensão Arterial da Sociedade Brasileira de Cardiologia. I Posicionamento Brasileiro sobre combinação de fármacos anti-hipertensivos. *Arq Bras Cardiol.* 2014;102(3):203-10.
5. Mancia G, Fagard R, Narkiewicz K, Redón J, Zanchetti A, Bohm M, et al; Task Force Members. 2013 ESH/ESC Guidelines for the management of arterial hypertension The Task Force for the management of arterial hypertension of the European Society of Hypertension (ESH) and of the European Society of Cardiology (ESC). *J Hypertens.* 2013;31(7):1281-357.
6. James PA, Oparil S, Carter BL, Cushman WC, Dennison-Himmelfarb C, Handler J, et al. 2014 Evidence-based guideline for the management of high blood pressure in adults report from the panel members appointed to the Eighth Joint National Committee (JNC 8). *JAMA.* 2014;311(5):507-20. Erratum in *JAMA.* 2014;311(17):1809.
7. Weber MA, Schiffrin EL, White WB, Mann S, Lindholm LH, Kenerson JG, Flack JM, et al. Clinical practice guidelines for the management of hypertension in the community a statement by the American Society of Hypertension and the International Society of Hypertension. *J Hypertens.* 2014;32:3-15.
8. Dasgupta K, Quinn RR, Zarnke KB, Rabi DM, Ravani P, Daskalopoulou SS, et al. The 2014 Canadian Hypertension Education Program. Canadian Hypertension Education Program recommendations for blood pressure measurement, diagnosis, assessment of risk, prevention, and treatment of hypertension. *Can J Cardiol.* 2014;30(5):485-501.
9. American Diabetes Association. Standards of Medical Care in Diabetes 2014. *Diabetes Care.* 2014;37 Suppl 1:S14-80.
10. Krieger EM, Drager LF, Giorgi DM, Krieger JE, Pereira AC, Barreto-Filho JA, et al; ReHOT Investigators. Resistant hypertension optimal treatment trial: a randomized controlled trial. The ReHOT Investigators. *Clin Cardiol.* 2014;37(1):1-6.
11. Fuchs FD, Fuchs SC, Moreira LB, Gus M, Nóbrega AC, Poli-de-Figueiredo CE, et al. Prevention of hypertension in patients with pre-hypertension: protocol for the PREVER-prevent trial. *Trials.* 2011;12:65.