Recent advances in the management of hypertension
José Antonio García-Donaire and Luis M Ruilope*

Address: Hypertension Unit, Hospital 12 de Octubre, 28041 Madrid, Spain
* Corresponding author: Luis M Ruilope (ruilope@ad-hocbox.com)

Abstract
Recently, there have been several reports related to the adequacy of blood pressure (BP) control in high-risk hypertensive patients. These aspects have been reviewed in the recently published reappraisal of the European Society of Hypertension guidelines, and this short review comments on and briefly extends the discussion of this situation. In summary, a low BP goal when cardiorenal disease is advanced can be risky. However, attaining normal BP levels at earlier stages in the cardiorenal continuum is probably totally adequate.

Introduction and context
The latest evidence supported by the most recent comparative trials [1-6] has prompted a reconsideration of the current guidelines for the management of hypertension [7]. Consensus over the initiation of antihypertensive treatment and blood pressure (BP) goals is essential in order to optimize hypertension management and outcomes. In addition, BP measurement methods must be tested in order to establish the optimal and most reliable approach for determining accurate BP levels. Current recommendations are based on the finding that a given difference in BP, as measured in the clinic, results in a given difference in outcome, as demonstrated by observational and interventional studies and their meta-analyses [8-10].

Recent advances
Guidelines recommend the use of antihypertensive drugs in patients with grade 1 hypertension at low or moderate cardiovascular (CV) risk – namely, when systolic BP (SBP) is between 140 and 159 mm Hg or when diastolic BP is between 90 and 99 mm Hg (or when both occur) – provided that non-pharmacological treatment has proven ineffective. Nevertheless, there is inconclusive evidence of whether older persons with grade 1 hypertension, diabetics, or patients with coronary disease and high normal BP should be treated [7]. Therefore, ongoing and future trials are necessary to set up a more robust assessment of treatment benefits in these patients (Table 1). Also, discussion about the most adequate BP goals is emerging from a number of recent studies. It seems reasonable, particularly given the results of a number of prospective trials, that SBP should be reduced to less than 140 mm Hg in the general population of patients with grade 1 or 2 hypertension and low or moderate total CV risk. Information on BP thresholds and targets for drug treatment has also resulted from post hoc analyses of event-based trials and from studies on the effects of treatment on organ damage of prognostic importance, although, admittedly, this is weaker evidence. In the ONgoing Telmisartan Alone and in combination with Ramipril Global Endpoint Trial (ONTARGET) [3], favorable effects of BP reductions were seen when initial SBP values were above 140 mm Hg, even after adjusting for potential confounders, and a greater BP reduction was usually accompanied by greater CV protection. Conversely, the benefit was less obvious and primarily limited to stroke patients in whom initial SBP was in the range of 130 mm Hg [11]. The lack of benefit observed in this trial was directly related to the high CV risk of the population included. Consequently, the recommendation of previous guidelines to aim for a lower SBP goal (<130 mm Hg) in patients at very high CV risk may be prudent but is not consistently supported by trial evidence. In no randomized trial in diabetic patients has SBP been reduced to below 130 mm Hg with
Implications for clinical practice

A more prompt initiation of treatment is advisable if grade 1 hypertension is associated with a high level of risk or if hypertension is grade 2 or 3. In patients with high normal blood pressure (BP) (SBP of 130-139 mm Hg or DBP of 85-89 mm Hg) uncomplicated by diabetes or previous cardiovascular events, no trial evidence of treatment benefits, except for a delayed onset of hypertension (crossing the 140/90 mm Hg cutoff) is available. The proportion of hypertensive patients achieving satisfactory BP control also differs depending on whether BP is measured in the clinic or by ambulatory monitoring. Comparative data are few and show discrepant results: some controlled studies indicate an easier BP control by clinic measurement (<140/90 mm Hg) than by ambulatory BP monitoring (<130/80 mm Hg) [16], whereas Spanish registry data [12,17] suggest that almost half of all patients with office-diagnosed hypertension are normotensive when assessed by ambulatory BP monitoring. Hence, future trials should use ambulatory BP monitoring alongside conventional clinic BP measurements.

Abbreviations
BP, blood pressure; CV, cardiovascular; SBP, systolic blood pressure.

Competing interests
The authors declare that they have no competing interests.

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