SCIENTIFIC EDITORIAL

Blood pressure control: Time for action

Contrôle de la pression artérielle : il est temps d’agir

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Over the past 70 years our understanding of hypertension has advanced greatly. Epidemiology has led to a major change in the paradigm concerning high blood pressure (BP). Initially considered as a normal adaptation to thickened vessels, it was later recognized as a major risk factor for cardiovascular events. Since then, the deleterious components of BP have been refined: systolic BP and pulse pressure have progressively overtaken diastolic BP, while central pressure is becoming, for some experts, a more reliable way to measure BP than is peripheral BP. Pharmacology has led to the discovery of powerful and very effective drugs with a good tolerance over the long term. Clinical studies have shown the impact of lowering BP on improving patient outcomes. The benefit is substantial: a reduction in systolic BP of 10–12 mmHg or in diastolic BP of 5–6 mmHg over 5 years resulted in a decrease in the incidences of stroke, coronary artery disease, congestive heart failure and cardiovascular death of 35–40%, 20–25%, 45–55% and 20–25%, respectively [1]. Finally, tremendous efforts are still being directed at identifying new markers for cardiovascular risk stratification. All of these developments are summarized regularly in textbooks and in guidelines that critically review the evidence at hand and propose the best clinical practice in accordance with evidence-based medicine. There are, however, two areas that have been difficult to improve during this period: physicians’ compliance with practice guidelines [2] and patients’ compliance to the prescribed treatments [3].

The paper by Nicodeme et al. [4] perfectly illustrates the complexity of improving BP control in France. In their survey, the authors identified an approximately 40% rate of BP control based on conventional BP measurement, close to that reported by Wang et al. [5]. While this rate is clearly not sufficient, it is perhaps less disappointing than those from other European countries [5]. More importantly, this paper reports on “clinical inertia”, in other words, the reluctance of physicians to modify treatment when the BP goal is not achieved.

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Controlling BP is difficult, as demonstrated clearly by Mancia and Grassi. The authors showed that even in randomized trials (i.e., in very rigorous settings), only half of the patients reached the objective in terms of systolic BP; the proportion of patients who reached the target diastolic BP was higher [6]. The report emphasizes that, whatever the improvements in the management of hypertensive patients, we will still fail to control BP in a substantial number of individuals. Nevertheless, the article by Nicodeme et al. [4] raises two important questions, the first of which relates to the definition of BP control. Indeed the authors, as have many others, consider the value of 140/90 mmHg by conventional BP measurement as the goal for the majority of hypertensive individuals. This value has been retained as a usual goal for treatment in most recent clinical trials. It must be put forward, however, that the response to treatment is highly variable, while the benefit is often estimated globally and is extended to each patient. In the Medical Research Council trial, for example, the average BP variation after starting propranolol or bendrofluazide was around —30 mmHg, with an extremely wide range of variation, and with some patients having a greater than 60 mmHg decrease and others a more than 10 mmHg increase (Gueyffier, personal communication). This finding clearly shows how difficult it is to extrapolate the results (here the BP effect of a drug) from a group to an individual. This is again perfectly illustrated by the paper by Mancia and Grassi [6], showing that even if the group of patients reaches the "goal" on average with treatment, for example 140/90 mmHg, half of the group will fail to achieve this target. Thus, it must be acknowledged that this threshold for every patient is not supported by much scientific evidence but is more an operational threshold proposed by experts to standardize routine practice. Providing the strong prognostic value of ambulatory BP measurement [7] and the huge variability of conventional BP measurement, another criterion that could have been used is "normalization" of ambulatory BP. The picture might have been slightly different then. The criteria used for "controlled BP" should be those that provide the best prediction of outcomes. In this respect, ambulatory BP alone might not even be sufficient, since Mancia et al. have shown that the best outcomes were achieved in patients whose BP was "normalized" by all modes of measurement, i.e. conventional, ambulatory and self-measurement [8]. Finally, it is generally thought that poor BP control causes adverse outcomes. It is also conceivable that poor BP control is more a marker of hypertension with an intrinsic poor prognosis, for example, related to stiffened vessels or poor socioeconomic status or renal failure. In this respect, an objective of treatment based only on BP might not be the most suitable. In terms of the importance of what should be the ultimate intermediate criteria to constitute goals for treatment, some important research efforts should be directed to this area, but in any case it is now difficult to limit BP control only to 140/90 mmHg by conventional BP measurement.

Another, more practical, question relates to the gap between clinical practice and guidelines. This is illustrated by a recent paper showing that, in a group of 993 physicians, the higher the Framingham risk score for coronary heart disease, the lower the percentage of subjects with correctly targeted BP goals. This misperception may reflect the fact that these high-risk patients have more complicated profiles, and that physicians are less prone to add antihypertensive medications on top of other risk-factor treatments. While stringent goals are less likely to be achieved in these subjects, they are also those who would benefit the most from intensive BP lowering. This failure illustrates the persisting need to improve the implementation of evidence-based guidelines in clinical practice [9]. Some clues are proposed in the paper by Nicodeme et al. [4]. As stated by the authors, one important step would be to simplify and harmonize the guidelines to avoid leaving physicians with sometimes conflicting, and perhaps even controversial, recommendations.

Another important point that arose from the study by Nicodeme et al. [4] is the reluctance of physicians to assess the real BP level based on their own casual measurement. This is of course consistent with the known variability in BP and with the "white-coat" effect. It may also rely on the conditions of casual BP measurement that may not fulfill the classical criteria of a proper measurement. In any case, there is an urgent need to improve BP assessment and to implement the use of ambulatory or self-BP measurement in general practice.

Great progress has been made in our knowledge of hypertension, and important research efforts are still being directed towards identifying highly sophisticated diagnostic tools to improve risk prediction. Yet we already have simple and effective markers of risk that are easily available and on which hypertension management should be based. It is time to reemphasize the value of these markers, and to mobilize physicians and avoid "clinical inertia". Obviously, some patients will still have uncontrolled BP despite our best efforts. Clinicians treating patients with refractory BP should follow a very rigorous management approach, involving combination treatment with synergistic drugs, titrating the doses (especially for diuretics and spironolactone), ruling out resistance factors (e.g., salt or alcohol consumption, increased body weight, patient compliance with treatment), and searching for secondary causes... In these patients, a global risk approach is indicated, in particular treatment of dyslipidaemia or correction of other risk factors. Time is a concern, because the physician has to carefully evaluate his patients and explain what could be done and why it is important to do so. Patient education over the long term is mandatory to improve BP control.

Finally and fortunately, there is still room for clinical judgement in hypertension management. It must be remembered that guidelines have to be interpreted for each individual patient. In this respect, it is rather reassuring that the general health status is taken into account and antihypertensive treatment adapted accordingly. Long-term preventive treatment is indeed only conceivable if there is no other rapidly lethal disease.

References
