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EDITORIAL

Blood pressure variability and cerebrovascular disease

Antoni Pelegrí, Adrià Arboix

Antoni Pelegrí, Department of Nephrology, Hospital Universitari del Sagrat Cor, E-08029 Barcelona, Spain
Adrià Arboix, Cerebrovascular Division, Department of Neurology, Hospital Universitari del Sagrat Cor, Universitat de Barcelona, E-08029 Barcelona, Spain
Author contributions: Pelegrí A and Arboix A contributed equally to the study.
Correspondence to: Adrià Arboix, MD, PhD, Head of the Cerebrovascular Division, Department of Neurology, Hospital Universitari del Sagrat Cor, C/Viladomat 288, E-08029 Barcelona, Spain. aarboix@hscor.com
Telephone: +34-93-4948940 Fax: +34-93-4948906
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Abstract

Variability is an aspect of blood pressure (BP) relatively unknown and poorly evaluated systematically in clinical practice. Although the introduction of intensive BP measurement methods, such as ambulatory blood pressure monitoring provided evidence of the importance of BP variability in the short-term, more recently, however, emphasis has been placed on the relevance of variability of BP in the medium- and long-term. The adverse cardiovascular consequences of high BP not only depend on absolute BP values, but also on BP variability. Independently of mean BP levels, BP variations in the short- and long-term are associated an increased risk of cardiovascular events and mortality. Also, it has been suggested that modulation of such variability may explain the different level protection exerted by different antihypertensive-drug classes.

Key words: Acute stroke; Blood pressure; Cardiovascular diseases

Core tip: A recent focus of interest has been the relationship between variability of blood pressure (BP) and cardiovascular events. It has been documented that the impact of hypertension on the risk of cardiovascular diseases including cardiovascular-related death not only depends on absolute BP values, but also on BP variations in the short- and long-term. For this reason, besides to reducing absolute BP levels, control of BP variability is highly desirable and an important target of antihypertensive treatment.

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INTRODUCTION

It has been extensively recognized that hypertension is one the main risk factors for acute stroke. Some particular aspects of elevated blood pressure (BP), such as its systolic and diastolic components, pulse wave, the circadian pattern or the pharmacological control have been progressively defined as aspects with more or less impact on the global vascular risk associated with high BP.

The scientific interest in the role of BP variability was initially originated from technical advances allowing monitoring of BP during short periods of time, obtaining multiple measurements with the possibility of evaluating variations in the short term. Ambulatory blood pressure monitoring (ABPM) allowed assessing, in a reproducible manner, BP changes at different times of the day as well as between measurements, and although not consistently, it was shown that this short-term BP variability was an independent risk factor of cardiovascular morbidity and mortality[1]. Both morning surges and pronounced BP falls at night have been reported as predictors of silent or clinically manifested cerebrovascular disease.

However, and in general, most clinical trials and clini-