Hemodynamic and Arterial Stiffness Parameters in Ambulatory Blood Pressure Phenotypes and the Clinical Scenario of Polypharmacy and Comorbidities

Dear Editor:

We read with great interest the paper by Afsar and colleagues[1] regarding sodium excretion, hemodynamic parameters and indices of arterial stiffness according to ambulatory blood pressure monitoring (ABPM) classification of patients with essential hypertension. The authors provide further insight on several characteristics of hypertensive patients classified by use of ABPM as sustained normotension (SNT), white-coat hypertension (WCHT), masked hypertension (MHT), and sustained hypertension (SHT). However, we believe that there are some points that deserve further consideration.

First, the authors studied patients attending a nephrology outpatient clinic, which might be indicative of selection bias. We believe that this is reflected by the levels of urinary albumin excretion (UAE), which appear surprisingly high. In fact, the population exhibited macroalbuminuria (388.5±1468.9 mg/d), while the mean levels in SHT were as high as 755.5±1555.0. Progression from microalbuminuria (>30 and ≤300 mg/d) to macroalbuminuria (>300 mg/d) indicates a worsening of vascular disease and the presence of kidney disease.[2] Whether and to what extent increased UAE in the study could be attributed to the increased portion of patients with concomitant diabetes mellitus (41%), or the fact that the population already exhibited stage II chronic kidney disease (GFR 70.7±28.4 mL/min/1.73 m^2), should be determined by a separate analysis excluding patients with diabetes and/or impaired renal function. We would be grateful if the authors could provide the levels of UAE in diabetic and non-diabetic hypertensives and according to the stages of kidney function.

In addition, data on UAE is presented as mean±standard deviation (SD). Since SD appears always higher than the mean value, this implies that the distribution was not normal. If this is the case, it would be better to describe the numbers as median and interquartile ranges and we would be grateful if the authors could present those values as well.

It should be noted that resistant hypertension, which represents a distinct clinical entity characterized by several metabolic and humoral abnormalities,[3] was not an exclusion criterion. In the study by Afsar and colleagues, >40% were under multiple antihypertensive medications. It would be interesting to know the percentage resistant hypertensive patients, whether they were equally distributed among nocturnal study groups, and whether their exclusion would alter the results.

Then, the authors comment that despite previously published data showing beneficial outcomes of extreme dippers, they found a surprisingly unfavorable profile in this group characterized by the lowest CO and highest Aix@75, PWV, and TPR. In their discussion, they propose increased activation of sympathetic nervous system and renin-angiotensin-aldosterone system as a possible explanation, which has been shown in other studies. However, this might represent a rather questionable conclusion, given that patients included in the study were under multiple antihypertensive medications, which may affect both systems in various and often even counterbalancing ways.

Finally, we think that the terms SHT, WCHT, MHT, SNT might be somewhat misleading. All participants were under antihypertensive treatment. Therefore, the term SNT actually refers to "controlled hypertension" and SHT to "uncontrolled hypertension." In addition, it is recommended that the terms "white-coat hypertension" and "masked hypertension" be reserved to define untreated individuals.[4] This distinction is important because in the discussion of the paper, comparisons are made with several studies which have used untreated hypertensives and non-hypertensive – normotensive individuals to extract the populations of SHT, WCHT, MHT, SNT.

Overall, we thank the authors for their valued study and the extensive information they have provided, yet we believe that some findings should be addressed with circumspection, taking into account the polypharmacy and the heterogeneity of the study population whose multiple comorbidities (diabetes mellitus, chronic kidney disease, obesity, coronary artery and celebrovascular disease etc.) may have confounded the results.

Conflict of interest: All authors declare no conflicts of interest.

Panagiota Anyfanti, MD, MSc; Areti Triantafyllou, MD, PhD; Stella Douma, MD, PhD
From the 3rd Department of Internal Medicine, Papageorgiou Hospital, Aristotle University of Thessaloniki, Thessaloniki, Greece

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