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Cardiovascular risk in white-coat hypertension individuals stratified by their nocturnal blood pressure dipping status

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Background/Introduction: Nocturnal blood pressure (BP) dipping status, defined by the night-to-day BP ratio, has been correlated with the cardiovascular (CV) risk in patients with arterial hypertension. The risk is higher in those with less than normal or no drop in nocturnal BP while data in extreme dippers are inconsistent. On the other hand, white-coat hypertension (WCHT), defined as an elevated office BP despite a normal out-of-office BP, is characterized by a lower CV risk than that of sustained hypertension and rather comparable with that of true normotension.

Purpose: The present study assessed the possible relation between the nocturnal BP dipping status and the underlying CV risk in WCHT individuals.

Methods: Among all individuals examined in our outpatient anti-hypertensive units over the past 15 years, 2310 (42% men, 52.2±13.1 years of age) were diagnosed with WCHT (increased office BP: 156.4±10.0/99.6±6.2 mmHg and normal 24-hour ambulatory BP: 122.4±6.3/75.3±5.4 mmHg) and were enrolled in the study. A night-to-day BP ratio (from the 24-hour ambulatory BP monitoring) 0.8–0.9 defined Normal nocturnal BP Dipping, <0.8 Extreme Dipping, 0.9–1 Mild Dipping and >1

Absence of Dipping. The underlying 10-year CV risk of death in the studied population was calculated with the Hellenic version of the HeartScore (Hellenic Score), as proposed by the current 2018 European Society of Hypertension guidelines, based on age, gender, smoking status, systolic BP and total cholesterol levels.

Results: From 2310 individuals studied, 1208 (52.3%) were found with Normal Dipping, 386 (16.7%) with Extreme Dipping, 622 (26.9%) with Mild Dipping and 94 (4.1%) with Absence of Dipping. Hellenic Score was 3.21±4.67% in subjects with Normal Dipping, 3.49±4.97% in those with Extreme Dipping, 3.66±5.04% in those with Mild Dipping, 6.21±7.29%, in those with Absence of Dipping (p for trend <0.05) and 3.50±4.99% in the whole cohort of the studied population.

Conclusions: Nocturnal BP dipping status is closely associated with the underlying CV risk of WCHT individuals. Extreme Dipping, Mild Dipping and especially Absence of Dipping increase CV risk thus necessitating closer follow-up of these individuals and possibly faster initiation of BP-lowering drug treatment.