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Sex Differences in Ambulatory Blood Pressure Levels and Subtypes in a Large Italian Community Cohort.

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Background: Sex differences in blood pressure control are recognized. We systematically investigated sex differences in specific components of ambulatory blood pressure (ABP), including variability, day-night changes, morning surge, and hypertension types.

Methods: We analyzed ABPs of 52 911 participants (45.6% male, 54.4% female, 37.0% treated for hypertension) visiting 860 Italian community pharmacies. Sex differences in ABP levels and patterns were evaluated in the whole group and 4 risk groups (antihypertensive-treated patients, patients with diabetes, dyslipidemia, or cardiovascular disease).

Results: Average 24-hour, day-time, and night-time blood pressure values were consistently higher in males than females ($P<0.001$). Variability in ABP was higher in females, except during the night. Nondippers and an abnormal morning surge were more common among males (odds ratio and 95% CI, 1.282 [1.230-1.335] and 1.244 [1.159-1.335]; $P<0.001$). The prevalence of 24-hour and masked hypertension was higher in males (odds ratio and 95% CI, 2.093 [2.019-2.170] and 1.347 [1.283-1.415]; $P<0.001$) and that of white-coat hypertension in females (0.719 [0.684-0.755]; $P<0.001$). Ambulatory heart rate mean values were higher ($P<0.001$) in females. Day-time HR variability was higher and night-time heart rate variability lower in females ($P<0.001$). Sex differences in ABP levels and patterns detected in the whole population were replicated in all risk groups, except for the prevalence of abnormal morning surge (between sexes difference in antihypertensive-treated participants only).

Conclusions: Females show better ABP control than males, but with an increased blood pressure variability and a greater prevalence of white-coat hypertension. These findings support tailored management of hypertension.

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