females, the majority of which were treated hypertensives. Mean age was 58±17 years. Thirty three subjects were diabetic, 75 non-dippers.

Twenty four hour mean arterial pressure (MAP) was 97.1±9.8 mm Hg. Awake and asleep MAP were 100.6±9.9 mm Hg and 87.6±10.3 mm Hg respectively. Twenty four hour awake and asleep pulse pressure were 59.6±12.6 mm Hg and 57.8±13.1 mm Hg. MAP dip was 12.8%, 95% confidence interval (CI) 11.9-13.7 whereas pulse pressure dip was 3.7%, 95% CI 2.6-4.8. Thus, MAP dip was more than 3.5 times the pulse pressure dip (p<0.0001). This held true for diabetic, male, female, obese, elderly or young subjects. Pulse pressure correlated strongly with systolic blood pressure (correlation coefficient 0.70, p<0.0001). However, despite the high correlation between the two parameters systolic blood pressure dip was more than 2.5 times the pulse pressure dip (p<0.0001). We conclude that although pulse pressure is derived from blood pressure, it is more constant during a 24h period, with a lesser effect of sleep as compared to mean arterial pressure. Pulse pressure is a marker of the compliance properties of the aorta and major vessels, which are not under sympathetic or circadian influence. On the other hand, mean arterial blood pressure is determined by peripheral vascular resistance and cardiac output, which are strongly influenced by sympathetic activity and circadian rhythm. This more rigid nature of the pulse pressure could also partly explain the better prognostic value of pulse pressure compared to blood pressure.

Key Words: Pulse Pressure, Sleep, Dipping

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CLINIC, HOME AND AMBULATORY PULSE PRESSURE: COMPARISON AND REPRODUCIBILITY
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Objective: Recent evidence suggests that pulse pressure (PP) is an independent predictor of cardiovascular risk. The objective of this study is to compare mean values and reproducibility of PP obtained by measuring blood pressure in the clinic (CPP), at home (HPP) and with ambulatory monitoring (APP).

Methods: A total of 393 hypertensive subjects (mean age 51.5±11.5 [SD] years, 59% men, 35% treated) measured CPP (2 visits), HPP (6 days) and APP (24 hours). The reproducibility of PP was assessed using the SD of differences (SDD) between measurements in 133 untreated subjects who had repeated CPP (5 visits), HPP (6 days) and APP measurements (2 occasions).

Results: There was no difference between mean CPP (51.0±13.3 mm Hg) and HPP (50.2±11.0) whereas APP (48.8±8.4) was lower than both CPP (mean difference 2.3±10.3 mm Hg, 95%CI 1.2, 3.3, p<0.01) and HPP (1.5±7.8, 95%CI 0.7, 2.3, p<0.01). The SDD between repeated measurements was about 10 mm Hg for CPP (1 visit), 5.2 for HPP (2 days) and 4 mm Hg for APP (24 hour). For a parallel comparative trial aiming to detect a difference of 3 mm Hg PP in the effect of two drugs, 415 subjects would be required when using CPP compared to 127 using HPP and 63 using APP.

Conclusions: These data suggest that although differences among mean values of CPP, HPP and APP are small, differences in reproducibility are important and should be taken into account in the design of trials assessing drug effects on PP.

Key Words: Pulse Pressure, Reproducibility, Home Blood Pressure