AMBULATORY BLOOD PRESSURE MONITOR IS SUPERIOR TO THE OFFICE BLOOD PRESSURE IN PREDICTING THE EARLY VASCULAR PATHOLOGY IN NON-HYPERTENSIVE YOUNG PROFESSIONALS.

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Introduction: Office blood pressure (BP) has been the standard method for diagnosing and managing hypertension. However, studies found that 24-hr ambulatory BP monitor may be better than the office BP in predicting cardiovascular (CV) morbidity and mortality. The common carotid artery intima-media thickness (IMT) is a reliable and valid marker of CV disease process. We compare the association between IMT and the office and ambulatory systolic BP measures.

Methods: As a part of our ongoing prospective study of job stress on CV diseases, a group of 88 non-hypertensive (BP<140/90 mmHg), clinically healthy young professionals (average 33 yo) were analyzed. 24-hr ambulatory BP monitor (Spacelabs 90217-1A) was used to average the 24-hr systolic BP (24-SBP), which was further divided into systolic BP while working (Work-SBP), awake but not working (Leisure-SBP), and asleep (Sleep-SBP). Office systolic BP (Office-SBP) was calculated from three separate readings with standard method. Common carotid artery IMT was measured by ultrasonography (HP Sono 5500) and analyzed with IôDP software.

Results: Using multivariable linear regression, we found significantly increasing Work-SBP, Sleep-SBP and 24-SBP, but not Leisure-SBP nor Office-SBP, were associated with increasing IMT. After adjusted with the common contributing factors including age, gender, ethnicity, work shift, smoking history, waist circumference, fasting glucose, HDL, LDL, and CRP, we found that these above observed ambulatory SBP measures remained be significantly associated with IMT.

Summary: Our results suggest that the average systolic BP from either 24-hr, limited working-hours or asleep ambulatory monitor is more strictly associated with the early vascular changes than office BP or leisure-time BP in the non-hypertensive healthy young professionals. Therefore, ambulatory BP is more closely related to CV disease than office BP.