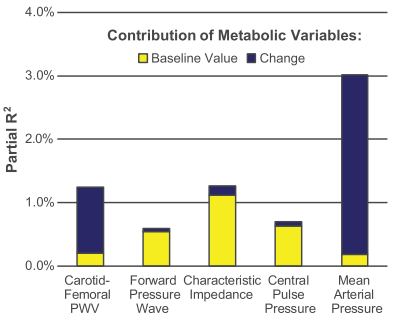
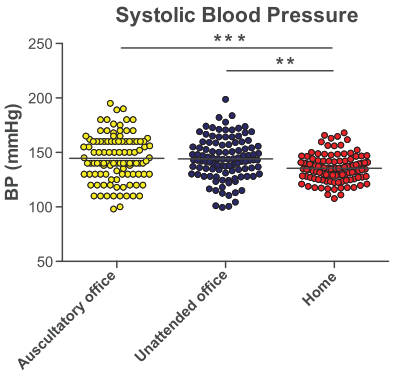
Metabolic Predictors of Vascular Change (p 237)



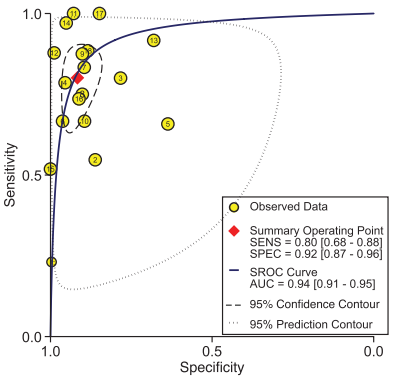
Aortic stiffness increases with age and contributes to the pathogenesis of hypertension and cardiovascular disease. In previous cross-sectional studies, metabolic traits were associated with aortic stiffness and mean arterial pressure. We examined whether metabolic traits at baseline and their changes over time were associated with changes in vascular function longitudinally. Vascular and metabolic traits were examined in 5779 middle-aged participants attending sequential examinations of the Framingham Heart Study cohorts (mean follow-up, 5.9±0.6 years). Multivariable regression was used to relate changes in vascular measures to changes in body mass index, serum lipids, and blood glucose. Aortic stiffness measures and pressure pulsatility increased, whereas mean arterial pressure decreased, suggesting that factors other than distending pressure may have contributed to the increase in aortic stiffness. Interindividual variation in the longitudinal changes of arterial stiffness (carotid-femoral pulse wave velocity) and mean arterial pressure were explained more by changes in metabolic traits than by baseline metabolic trait levels, consistent with the concept that modification of metabolic factors may mitigate arterial stiffness over time.

Unattended Blood Pressure Measurement (p 243)



Do you remember your reaction when looking at your angry math teacher? Or your reaction meeting the most beautiful girl in class on the schoolyard? In both cases, your blood pressure (BP) probably increased. The person that measures someone's BP—either frightening or attractive—affects BP as well. The technique of unattended BP measurement is intended to minimize this alert reaction. Although the protocol did not really call for it, several study centers in the SPRINT study (Systolic Blood Pressure Intervention Trial) measured BP in an unattended manner, leading to a controversial discussion on the generalizability of the trial's findings. The discussion was heated by an article from Filipovský et al reporting a 16 mm Hg difference in measurement techniques in a hypertension center. It is noteworthy that there is convincing evidence from the 80s that BP substantially decreases from the first visit of a new doctor to the following ones. So, what about the disparity of unattended versus attended BP in a familiar medical environment? Our study shows that the difference between measurements is low in a general practitioner setting. These findings make it improbable that the BP values in SPRINT substantially underestimate office BP values in primary care. It is currently being discussed whether unattended BP measurement should serve as the new gold standard for the assessment of office BP. The differences of the present data and those of Filipovský et al suggest that it may indeed be wise to implement this approach in secondary or tertiary care institutions, whereas it is dispensible in a general practitioner setting.

sFlt-1/PlGF Ratio in Prediction of Preeclampsia (p 306)



A substantial body of evidence suggests that angiogenic factors (sFlt-1 [soluble FMS-like tyrosine kinase-1] and PlGF [placenta growth factor]) could be useful biomarkers for prediction, diagnosis, and prognosis of preeclampsia from 24 to 37 weeks gestation. In this group, the sFlt-1/PlGF ratio has a very high negative predictive value for ruling out preeclampsia and its positive predictive value, whereas lower than the negative predictive value, outperforms current clinical tools. We conducted a meta-analysis of studies using sFlt-1/PlGF ratio to predict development of preeclampsia. The pooled sensitivity was 80% (95% confidence interval [CI], 0.68–0.88); pooled specificity 92% (95% CI, 0.87–0.96); and area under the curve 0.94 (95% CI, 0.91–0.95). With positive and negative likelihood ratios of 10.5 (95% CI, 6.2–18.0) and 0.22 (95% CI, 0.13–0.35), respectively, the probability of developing preeclampsia increased to 78% with a positive test compared with 7% with a negative test. Importantly, all included studies showed a high negative predictive value (10/15 studies reporting negative predictive value >98.5%). These results have important clinical implications. A low sFlt-1/PlGF ratio is a strong negative predictor of disease <37 weeks, allowing safe discharge or decreased surveillance. Concomitantly, a high sFlt-1/PlGF ratio could help prioritize patient care (transfer to tertiary centers or increased surveillance). The use of angiogenic factors for ruling out preeclampsia is used throughout Europe and was recently approved for pregnancies <35 weeks in the United Kingdom. The effective segregation of patients in a disease with an unpredictable course, which has substantial maternal and fetal morbidity and mortality, could have important clinical benefits.

(*Hypertension*. 2018;71:217. DOI: 10.1161/HYPERTENSIONAHA.117.10771.)

***Hypertension* is available at http://hyper.ahajournals.org**

DOI: 10.1161/HYPERTENSIONAHA.117.10771

Hypertension
Journal of the American Heart Association

Clinical Implications

Hypertension. 2018;71:217
doi: 10.1161/HYPERTENSIONAHA.117.10771
Hypertension is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231

Print ISSN: 0194-911X. Online ISSN: 1524-4563