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P68 Usefulness of an Optimal Cut-off in Central Augmentation Pressure for the Detection of Left Ventricular Hypertrophy in Men

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ABSTRACT

Background: Recently, we showed an age-related increase in augmentation pressure (AP) measured using Mobil-O-Graph (MOG) in normotensive Japanese individuals. However, AP might be a poor index of wave reflection due to the overlap between the forward wave and reflected wave.

Methods: We enrolled untreated hypertensive patients and patients currently on antihypertensive treatment. For 70 patients (median age, 70.5 years; 34 men), M-mode echocardiography was performed for determination of left ventricular hypertrophy (LVH), while hemodynamic measurements were taken using MOG. We investigated the influence of central hemodynamic parameters on LVH.

Results: Spearman correlation coefficients between various parameters [age, height, systolic blood pressure (SBP), mean BP, diastolic BP, central systolic BP (cSBP), and AP] were calculated for LV mass indexed to body surface area (LVMI; g/m^2). In men, age (r = 0.600, p = 0.0002), height (r = −0.495, p = 0.003), SBP (r = 0.423, p = 0.013), cSBP (r = 0.454, p = 0.007), and AP (r = 0.661, p < 0.0001) were correlated to LVMI. In women, cSBP (r = 0.334, p = 0.044) and AP (r = 0.480, p = 0.003) were correlated to LVMI. In men, LVMI (R^2 = 0.578, p = 0.0001) was significantly associated with AP (β = 1.32 ± 0.56, p = 0.027) in multivariate regression analysis. In women, no significant independent parameter for LVMI was observed. ROC curve analysis was performed to estimate the utility of AP for the detection of LVH (LVMI >115 g/m^2) in men. Area under the ROC curve was 0.83 (95% CI: 0.68–0.99). The optimal cut-off point of 12.5 mmHg produced 79.0% sensitivity and 86.7% specificity.

Conclusion: Higher AP showing >12.5 mmHg calculated by MOG was a significant independent predictor of LVH in male hypertensive patients.

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