

Both Arterial Stiffness and Ankle Brachial Index Are Associated With Significant Coronary Artery Disease

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Background and Objectives : Arterial stiffness measured by pulse wave velocity (PWV) and ankle brachial index (ABI) is known to reflect arterial dysfunction. The aim of this study was to evaluate the association between arterial dysfunction and coronary artery disease (CAD). We also evaluated the useful site of the measurement of PWV reflecting coronary artery stenosis. **Methods** : A total of 803 patients who performed coronary angiography (CAG) were divided into two groups according to the results of CAG; group I (CAD group: 547 patients, 61.63 ± 10.40 years, 510 males) and group II (No CAD group: 256 patients, 56.55 ± 11.28 years, 293 males). PWV at different arterial sites and ABI were measured using VP-2000 (Colins, Japan) before CAG. **Results** : Heart-femoral PWV (1033.0 ± 247.4 vs. 930.0 ± 212.3 msec, $p < 0.001$) and brachial-ankle PWV (1542.0 ± 340.4 vs. 1463.6 ± 288.1 msec, $p = 0.001$) were significantly increased in group I than in group II. However, heart-carotid PWV (824.7 ± 219.6 vs. 793.8 ± 335.6 msec, $p = 0.19$) and femoral-ankle PWV (1027.6 ± 183.1 vs. 1041.0 ± 172.7 msec, $p = 0.33$) were not different between the two groups. ABI were significantly decreased in group I than in group II (1.0 ± 0.13 vs. 1.1 ± 0.11 , $p = 0.01$). **Conclusion** : Our results demonstrated that arterial dysfunction measured by PWV and ABI were significantly associated with CAD. PWV measured at the sites of heart-femoral and brachial-ankle were more useful in predicting CAD than PWV measured at other sites.