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Waist circumference-to-height ratio and coronary artery calcification

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Background: Many studies have demonstrated that waist-to-height ratio (WHtR) correlates with risk factors of coronary artery disease (CAD) better than the body mass index (BMI). Coronary artery calcification (CAC) is an independent risk factor of atherosclerotic heart disease. However, the association between WHtR and coronary artery calcification score (CACS) still need to be elucidated.

Aim: The purpose of this study was to investigate the relationship between WHtR and CACS in healthy adults.

Method: A total of 1111 adults without histories of cardiovascular disease who visit the health promotion center at the university hospital were included in this study. All subjects were measured CACS by multi-detector computed tomography (MDCT).

Results: Participant with a CACS >0 had a greater WHtR than those with a CACS=0 (0.535 ± 0.006 vs. 0.517 ± 0.005 , $P < 0.001$). After adjusting for risk factors that affect CAC, WHtR represented an independent predictor of presence of CAC (odd ratio: 1.04, $P = 0.019$, 95% CI: 1.01-1.07). Male sex and systolic blood pressure was associated with a 2.53 and a 1.02-fold increase in CAC, respectively ($P < 0.001$, 95% CI: 1.53-4.19; $P = 0.007$, 95% CI: 1.01-1.04).

Conclusion: In this study of adults without heart disease, WHtR was an independent predictor of CAC. These results suggest that WHtR may be useful marker of CAD.

Biography

Jeong-Ah Kim has completed his Master's Degree in 2011 from Pusan National University School of Medicine. Currently, he is in residency training for Family medicine specialist from St. Vincent hospital of the catholic university of Korea. He is interested in primary care for health promotion.

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