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무증상 당뇨환자에서 관상동맥 석회화의 위험요인자로서의 요산수치

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Serum Uric Acid is an Independent Risk Factor for Coronary Artery Calcification in Asymptomatic Obese Individuals

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Introduction: Hyperuricemia is frequently observed in obesity, which is well known coronary heart disease risk factor. Recent evidences suggest that high serum uric acid (sUA) concentration may act as a risk factor for cardiovascular complications, especially in high risk patients. Coronary artery calcium score (CACS), assessed by coronary CT angiography, is a good marker of atherosclerosis that represents the degree of atheromatous plaque burden and a predictor of cardiovascular events. This study investigated the relationship of sUA with CACS using non-invasive coronary CT angiography in asymptomatic obese subjects.

Methods: We consecutively enrolled 5,491 asymptomatic subjects without history of coronary disease who underwent coronary CT angiography as part of a general health examination. Data were analyzed using multivariate logistic regression models to identify the relationship between CACS and clinical variables including sUA.

Results: Among the study subjects, male 62.3%, mean (±SD) age 52.99±9.544, body mass index (BMI) 23.99±3.131 kg/m^2, CACS 36.16±147.987, sUA 5.439±1.3698. Participants were subdivided in two groups, based on their BMI. 2,255 subjects were obese (BMI≥25 kg/m^2), mean BMI 21.95 kg/m^2 and 3,236 participants were non-obese (BMI <25 kg/m^2), mean BMI 26.90 kg/m^2. In both groups, three variables such as gender, age and hypertension had a positive correlation with CACS>100. After adjusting for these confounding factors, diabetes, CPP and sUA were risk factors for high CACS (>100) in obese subjects (OR:1.753, 95%C.I: 1.117-2.750, p-value<0.05; OR: 1.592, 95%C.I: 1.214-2.086, p-value<0.05; OR:1.145, 95%C.I: 1.013-1.294, p-value<0.05, respectively). However, in non-obese subjects, diabetes, CPP and uric acid were not independently associated with CACS (CACS>100).

Conclusion: In obese subjects, diabetes, elevated serum levels of CPP and uric acid are significantly associated with increased CACS independent of other traditional risk factors.

Key Words: 요산, 관상동맥 석회화지수, 비만
Uric acid, Coronary artery calcium score, Obesity