

무증상 검진 환자에서 고요산혈증이 관상동맥석회화와 혈관경직도에 미치는 영향

연세대학교 강남세브란스병원

최아란, 박해열, 김석형, 최훈영, 하성규, 박형천

Hyperuricemia is Significantly Associated with Coronary Artery Calcification and Vascular Stiffness in Asymptomatic Subjects Undergoing Health Examination

Ah Ran Choi, Hae Yeul Park, Seok-hyung Kim, Hoon Young Choi, Sung Kyu Ha, Hyeong Cheon Park

Department of Internal Medicine, Gangnam Severance Hospital, Yonsei University College of Medicine

Background: Elevated serum uric acid level (sUA) is an independent cardiovascular risk factor. Some epidemiology studies suggest that hyperuricemia may be associated with increased adverse cardiovascular events even in healthy subjects. Brachial-ankle pulse wave velocity (ba-PWV) is a noninvasive and simple method of measuring vascular stiffness and an independent predictor of cardiovascular mortality in some lifestyle-related diseases. Quantity of coronary artery calcium (CAC) correlates with atherosclerotic plaque burden and increased cardiovascular events. This study aimed to determine the relationship between sUA and PWV, coronary artery calcium score (CACS) as well as other traditional cardiovascular risk factors in asymptomatic subjects.

Method: We consecutively enrolled asymptomatic subjects who underwent ba-PWV and coronary CT angiography as part of a general health examination. Arterial stiffness defined as ba-PWV greater than gender and age matched control. CACS measured using the scoring system by Agatston, coronary atherosclerosis defined CACS greater than 100.

Results: This study included 4703 participants (52.8±9.4 years, male 60%) with kidney function eGFR greater than 60 mL/min/1.73m². The subjects were stratified into four groups according to sUA. CACS, ba-PWV gradually increased with uric acid quartiles. The highest quartile of sUA was associated with arterial stiffness compared to the lowest quartile sUA (OR 1.27 CI 1.0-1.6 in men, OR 1.63 CI 1.2-2.2 in women), after adjusting for age, SBP, fasting blood glucose, smoking, BMI, calculated LDL and eGFR. The subjects with CACS greater than 100 also showed that highest quartile of sUA with the lowest quartile (OR 2.4 CI 1.65-3.47). Multiple linear regression analysis showed that sUA (B=0.61 p<0.01), SBP (B=0.40 p<0.01), fasting blood glucose (B=0.08 p<0.01) was associated with ba-PWV after adjusting for age, gender, smoking, calculated LDL cholesterol. In multivariate linear analysis, old age (B=0.34 p<0.01), smoking (B=0.09 p<0.01), sUA (B=0.4 p<0.01), fasting blood glucose (B=0.12 p<0.01) were significantly associated with log transformed CACS.

Conclusion: Our results showed that sUA is an independent risk factor associated with vascular stiffness and coronary atherosclerosis in asymptomatic adults on health examination.

Key Words: 고요산혈증, 상완발목맥파속도, 관상 동맥 칼슘 수치
Hyperuricemia, ba-PWV, Coronary artery calcium score