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Association between urinary albumin creatinine ratio and cardiovascular disease

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Objectives: The association between microalbuminuria and cardiovascular disease (CVD) is accumulating in various patient populations. However, when stratified by sex, the relationship between microalbuminuria and CVD remains unclear.

Methods: We obtained data from the 2011-2014 and 2019-2020 Korea National Health and Nutrition Examination Survey (KNHANES). Microalbuminuria was measured based on spot urine albumin-creatinine ratio (UACR). The Framingham risk score (FRS) model was implemented to evaluate the CVD risk. Linear and logistic regression models were used to identify the associations of microalbuminuria status with cardiometabolic predictors and CVD status determined by the FRS score

Results: Among 19,340 representative Korean participants, the (UACR) in Korean women and men with history of CVD was higher than in those without history of CVD. Among patients without history of CVD, multivariate regression analysis showed that a high UACR was related to older age, lower high-density lipoprotein cholesterol level, higher total cholesterol level, higher systolic blood pressure, higher prevalence of current smoking, higher prevalence of diabetes, and higher anti-hypertensive medication use in both women and men. The UACR showed a positive linear correlation with the Framingham risk score in both women and men.

Conclusions: The presence of microalbuminuria was significantly associated with the cardiometabolic risk factors and the increased risk of CVD evaluated by FRS model in both women and men in a nationally representative sample of Korea.