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Use of Colchicine and Adverse Cardiovascular Events in Patients with Gout: A Nationwide Nested Case-control Study in South Korea

Hyung Woo Kim¹, Minjin Kang³, Cheol Ho Park¹, Jae Young Kim², Seung Hyeok Han¹, Tae Ik Chang²

¹Department of Internal Medicine-Nephrology, Severance Hospital, Korea, Republic of

²Department of Internal Medicine-Nephrology, National Health Insurance Service Ilsan Hospital, Korea, Republic of

³Department of Department of Research and Analysis, National Health Insurance Service Ilsan Hospital, Korea, Republic of

Objectives : The efficacy of colchicine use on primary prevention of atherosclerotic cardiovascular disease (ASCVD) is unknown. This study aimed to investigate the potential preventive association of colchicine use with ASCVD or ASCVD-related mortality in patients with incident gout.

Methods : Using a nationwide claim database from the Korean National Health Insurance System, a nested case-control study was conducted. Among patients without a prior history of ASCVD who developed incident gout, individuals who experienced ASCVD or ASCVD-related mortality during follow-up period were matched to four controls based on factors including age, sex, income, residential area, comorbidities, and medications.

Results : Overall, 9,346 patients with ASCVD or ASCVD-related mortality were matched to 35,070 controls (entire cohort). Additionally, 4,799 patients with ASCVD or ASCVD-related mortality who underwent health check-ups at baseline were matched to 17,537 controls (health examination cohort). The patient population was predominantly male. Compared with non-users, a curvilinear relationship between higher cumulative defined daily doses (cDDD) of colchicine and the odds of the composite of ASCVD or ASCVD-related mortality was observed in the entire cohort; the odds ratios (95% CI) were 1.09 (1.04-1.15) for <90 cDDD, 1.20 (1.07-1.33) for 80-179 cDDD, and 1.21 (1.09-1.35) for ≥180 cDDD. This association was found to be similar in the health examination cohort.

Conclusions : This study suggested that colchicine use was not associated with a decreased risk of ASCVD outcomes in patients without a history of ASCVD who experienced incident gout.