Positive Associations of Current and Past History of Kidney Stones with Overweight, Hypertension, Hyperuricemia and Chronic Kidney Disease in a Screened Population

Introduction and Objective: The aim of this study is to examine the association of kidney stones with risk factors for chronic kidney disease (CKD) and cardiovascular disease (CVD) in a screened population.
Materials and Methods: In this cross-sectional study, 20,990 Japanese who underwent general health screening tests were examined between April 1995 and March 2001. Participants were divided into three groups (control, past, and current kidney stone groups) based on ultrasonography (US) findings and medical histories. Variables were compared between the three groups. Logistic regression analysis was used to estimate the odds ratio (OR) and 95% confidence intervals (CI) for overweight, obesity, hypertension, diabetes mellitus, hyperuricemia, dyslipidemia and CKD across three groups.
Results: Of the participants, 512 (2.4%) had kidney stones on US and 1,521 (7.3%) had past history of kidney stones, but without kidney stones on US. Systolic and diastolic blood pressures and serum uric acid level were significantly higher in past and current kidney stone formers than in control after age and sex adjustment. In past kidney stone former, multivariable adjusted ORs (95% CI) for overweight, hypertension and hyperuricemia were 1.25 (1.10-1.42), 1.34 (1.18-1.52) and 1.35 (1.18-1.55), respectively. In current kidney stone former, multivariable adjusted ORs (95% CI) for overweight, hypertension and hyperuricemia were 1.17 (0.95-1.45), 1.63 (1.33-1.99) and 1.58 (1.27-1.97), respectively.
Conclusions: Preventative health care interventions targeted for current and past kidney stone formers toward decreasing weight, blood pressure and serum UA levels could decrease the risk of CKD and CVD.