

CRYSTAL ARTHRITIS

Does reduced glomerular function increase gout risk?

Performed by Eswar Krishnan of Stanford University and now published in *PLoS ONE*, a statistical analysis of data from 5,589 individuals collected during the 2009–2010 US National Health and Nutrition Examination Surveys (NHANES) suggests that renal impairment is an important risk factor for gout.

This finding might seem unsurprising, considering the obvious pathological link between impaired renal urate excretion and gout. Indeed, “at least a third of all patients with gout have renal impairment,” says Krishnan. “However, whether the *vice versa* is true—that is, prevalence of gout is increased in patients with renal impairment—was not known for certain.” Low gout prevalence has been observed in previous studies in patients with reduced glomerular function, but underdiagnosis might have precluded an accurate assessment of gout risk.

Krishnan calculated that 5.86 million of an estimated 7.58 million people with

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gout in the USA have some degree of renal impairment (estimated glomerular filtration rate [eGFR] <90 ml/min/1.73 m²). “The age-standardized prevalence of gout among those with normal kidney function was about 3%, compared with about 24% in those with chronic kidney disease (eGFR <60 ml/min/1.73 m²),” explains Krishnan. Logistic regression analysis, which adjusted for multiple variables, demonstrated that severe renal impairment (eGFR <30 ml/min/1.73 m²) was associated with a 10-fold increase in the risk of hyperuricaemia and a six-fold increase in the risk of gout.

Interestingly, the associations between renal impairment and both hyperuricaemia and gout prevalence were non-linear;

age-standardized gout prevalences were 2.9%, 4.6%, 27.9% and 33.3% for no, mild (eGFR = 60–89 ml/min/1.73 m²), moderate (eGFR = 30–59 ml/min/1.73 m²), and severe renal impairment, respectively. This finding suggests that an eGFR threshold of <60 ml/min/1.73 m² confers a considerably increased gout risk. These discoveries highlight the need for improved urate-lowering therapies that are safe and effective in patients with renal impairment.

The author concedes that the cross-sectional design of the NHANES study is a major drawback to his analyses. However, “we have already studied the link between impaired renal function and gout incidence in a prospective study and the results are confirmatory,” he concludes.

David Killock

Original article Krishnan, E. Reduced glomerular function and prevalence of gout: NHANES 2009–10. *PLoS ONE* 7, e50046 (2012)