

A Cohort Study of United States Renal Data System (USRDS) to Examine Risk Factors and Outcomes of Gout in Dialysis Patients

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Introduction: There are limited data on gout among dialysis-dependent end-stage renal disease (ESRD) patients. Here we evaluated the epidemiology, risk factors, and outcomes of dialysis patients with gout.

Methods: Dialysis patients ≥ 18 years of age with Medicare as the primary payer were identified from the 2017 United States Renal Data System (USRDS). Study baseline characteristics and comorbid conditions for dialysis-dependent patients were assessed starting January 1, 2018. Patients were retrospectively followed until December 31, 2018. Gout diagnoses, all-cause mortality (death within 365 days of January 1, 2018), and a composite outcome including death and hospitalization for myocardial infarction, stroke, or congestive heart failure (CHF) in these dialysis patients were examined.

Results: Of 231,841 dialysis patients in 2017, 31,300 (13%) had ≥ 1 gout claim following initiation of chronic outpatient dialysis. Compared to non-gout patients, gout dialysis patients were more likely to be older (mean 66.9 vs 61.4 y) and male (62% vs 55%). Gout patients were also more likely to undergo hemodialysis via central venous catheter (13% vs 11%) and had more hospital admissions (66% vs 57%) and inpatient days before baseline. Comorbidities were more prevalent in gout patients: diabetes (64% vs 61%), chronic obstructive pulmonary disease (26% vs 18%), hypertension (84% vs 73%), hyperlipidemia (54% vs 42%), cardiovascular conditions (CHF [42% vs 30%], ischemic heart disease [42% vs 29%], and peripheral vascular disease [27% vs 21%]). In adjusted regression analysis, older age (OR=4.1 for ≥ 65 vs < 65 y, 95% CI 3.0-4.4), Asian race (OR=2.4, 95% CI 2.3-2.5), and higher BMI (OR=2.1, 95% CI 2.0-2.2) are associated with > 2 -fold increase in gout risk. Gout patients were noted to have 10% higher erythropoietin stimulating agent requirements and 8% more red blood cell transfusions than non-gout patients. Multivariate analysis showed that risk of a composite of death and cardiovascular disease-hospitalization was higher by 6% (hazard ratio, 1.06 [95% CI 1.03-1.09]) in the year post-diagnosis.

Conclusions: Gout prevalence was 13% in this US Medicare dialysis-dependent population. Gout patients had a higher comorbidity burden especially for cardiovascular conditions, anemia management challenges, and a higher risk for hospitalization and mortality. Future studies are needed to assess whether improved recognition and management of gout may reduce the risk for worse cardiovascular outcomes.

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