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CENTER FOR GLOBAL CLINICAL RESEARCH DATA

DATA REUSE CASE STUDY

BACKGROUND:

Gout is a type of arthritis caused by elevated levels of uric acid. Symptoms include redness, inflammation, swelling, and pain in the affected joints, often in the feet. Persistent elevation of uric acid in the blood is caused by a variable combination of factors, including diet, other health issues, and genetic predisposition. Gout affects 1-2% of the adult population in developed countries, and has become more common.

RESEARCHER QUESTION:

Byeongzu Ghang is an Associate Professor and Rheumatology Specialist in the Jeju National University School of Medicine, Jeju, Korea. His primary research and clinical focus is on gout, inflammatory myositis, and interstitial lung disease (ILD). For this project, Dr. Ghang and colleagues set out to investigate whether urate-lowering therapy (ULT) is effective in delaying the progression of chronic kidney disease (CKD) in patients with gout.

Current treatment for gout is primarily focused on managing symptoms with pharmacological interventions including non-steroidal anti-inflammatory drugs and glucocorticoids, among others. When an acute attack has been managed, further treatment often focuses on lifestyle changes and medications intended to decrease uric acid levels and prevent further attacks.

"The Vivli platform provided a seamless experience in requesting and accessing trial data." - Dr. Byeongzu Ghang

FINDINGS

The research findings indicate that maintaining low serum uric acid (sUA) levels, particularly below 6 mg/dL, is significantly associated with a reduced risk of CKD progression. This finding challenges earlier conclusions drawn from trials on asymptomatic hyperuricemia, which often excluded patients with gout. These findings support a greater focus on designing clinical trials focusing on ULT in gout patients with varying CKD stages. The researchers suggest that future studies could investigate optimal sUA targets, the long-term renal outcomes of ULT, and the role of MSU crystal reduction in kidney protection.

IMPACT

Currently, ULT remains underutilized in CKD management, with uncertainty surrounding its benefits for kidney function. This study provides evidence to support its protective role in gout patients. The study's mechanistic insights may also help to guide the exploration of novel therapeutic targets in CKD progression. As Dr. Ghang said in discussing this research, "We aim to bridge the gap in understanding the renal benefits of ULT specifically for gout patients….[these] findings can influence clinical guidelines to integrate ULT more robustly into CKD management for gout patients."

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RESEARCH PROCESS:

The team's research focused on gout patients who received urate-lowering therapy (ULT) treatments (febuxostat or allopurinol) for more than one year as participants in the Cardiovascular Safety of Febuxostat or Allopurinol in Patients with Gout (CARES) trial. The CARES trial enrolled more than 5,000 patients, and the researchers conducted a post-hoc analysis to assess the estimated glomerular filtration rate (eGFR) slope (mL/min/1.73 m2 per year) using the CKD-EPI equation. They also used logistic regression to investigate risk factors for CKD progression, defined as eGFR slope of lower than 0 mL/min/1.73 m2 per year.

NEXT STEPS:

READ MORE

POS0284 Changes of estimated glomerular filtration rate after long-term febuxostat or allopurinol treatment in gout patients (BMJ ARD)

Post-hoc analysis of the CARES trial suggests delayed progression of chronic kidney disease in patients with gout during urate-lowering therapy (Kidney International)

Find out more about requesting data from Vivli.