followed from baseline up to 10 years or until gout diagnosis, death, or end of study period (Dec 31/19).

We calculated 10-year cumulative incidence of gout according to baseline SU category and CKD status and evaluated their individual and joint impact on gout risk using multivariable Cox proportional hazards models.

We further assessed for additive and multiplicative interactions between levels of SU and inverted eGFR, on a standardized continuous scale per SD.

**Results:** We included 458,244 individuals (45% male, mean age 56.5 years, of whom 6,659 had CKD at baseline, and documented 5,847 cases of incident gout over 4,442,866 person-years.

10-year cumulative incidence of gout ranged from 0.2% (baseline SU < 5 mg/dL) to 33% (baseline SU ≥ 10 mg/dL), and in each category incidence was higher for those with CKD than without (Table 1; Figure 1-left).

There was a significant additive interaction between continuous SU and eGFR (relative excess risk due to interaction=0.16 [0.09 to 0.24], p < 0.001), with HRs of 3.7 (3.6 to 3.8) per SD increase of SU, 1.2 (1.2 to 1.3) per SD increase of inverted eGFR, and 4.1 (3.9 to 4.2) for their joint effect. Their multiplicative interaction was also significant (p < 0.001).

**Conclusion:** These large prospective cohort data suggest CKD presence enhances the effect of elevated SU levels on risk of incident gout. They support roles of CKD-associated factors beyond SU in developing gout, such as reduced AMPK activity levels and altered inflammatory factors in CKD, which warrant further investigation.

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OP0167 ULTRASONOGRAPHY IN THE PREDICTION OF GOUT FLARES: A 12-MONTH PROSPECTIVE OBSERVATIONAL STUDY

E. Cipolletta1, A. Abhishek2, J. Di Battista1, W. Grassi1, E. Filippucci1.
1Politecnico University of Marche, Department of Clinical and Molecular Sciences, Ancona, Italy; 2University of Nottingham, Academic Rheumatology, Nottingham, United Kingdom

**Background:** Gout flares are a distinctive feature of gout. Although imaging techniques, such as ultrasonography (US), can visualise monosodium urate (MSU) crystals and synovial inflammation and estimate their burden, the role of imaging in predicting gout flares has not been fully investigated.

**Objectives:** To evaluate whether US findings indicative of MSU deposits and subclinical inflammation predict gout flares over 12 months.

**Methods:** Participants with gout on urate-lowering therapy (ULT) for at least the preceding six months were enrolled consecutively in this 12-month prospective, observational, single-centre study. A nested case-control analysis was performed. Cases were participants with at least one gout flare in the follow-up period while controls did not self-report any gout flares. Clinical assessment was scheduled at 6-month intervals. In addition, at baseline, each patient underwent an US examination using a standardised scanning protocol including the following sites: knees, ankles, 1st metatarsophaelogal joints, elbows, wrists and 2nd metacarpophalangeal joints. The US findings indicating MSU deposits [i.e., aggregates, double contour (DC) sign and tophi] and inflammation [i.e., Power Doppler (PD) signal] were identified according to the 2015 Outcome Measure in Rheumatology definitions (Figure 1).

**Results:** Baseline US findings indicating MSU deposits and subclinical inflammation are independent predictors of gout flares over 12 months. The baseline extent of MSU deposits and subclinical inflammation estimated by US was significantly associated with gout flares over 12 months in multivariable logistic regression analyses. DC sign score (aOR: 2.20, 95%CI: 1.22-4.34; p=0.01), tophi score (aOR: 2.16, 95%CI: 1.12-4.18; p=0.02) and PD score (aOR: 1.63, 95%CI: 1.12-2.40; p=0.01) predicted gout flares, whereas aggregates score (aOR: 1.40, 95%CI: 0.94-2.10; p=0.10) did not reach the statistical significance. Similar results were obtained in multivariable Poisson regression models (aIRR for DC score: 1.39, 95%CI: 1.18-1.64; p<0.01, aIRR for tophi score: 1.30, 95%CI: 1.17-1.45; p<0.01, aIRR for PD score: 1.29, 95%CI: 1.19-1.40; p<0.01, aIRR for aggregates score: 1.13, 95%CI: 1.00-1.29; p=0.05).

**Conclusion:** Baseline US findings indicative of MSU deposits and subclinical inflammation are independent predictors of gout flares over 12 months.

**REFERENCES:**

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OP0168 DEVELOPMENT OF AN ULTRASOUND SCORING SYSTEM FOR CPPD EXTENT: RESULTS FROM A DELPHI PROCESS AND WEB-RELIABILITY EXERCISE BY THE OMERACT US WORKING GROUP

S. Siroli12, A. Adinolfi1, A. Damiani4, F. Becce3, T. Cazeneuve2, E. Cipolletta2, S. N. Christiansen2, A. Dellè Sede6, M. Diaz25, F. Figus11, E. Filippucci1, H. B. Hammer2, M. Landi17, D. Maccarini11, M. Micu11, I. Möller9, M. A. Mortada12, G. Moulel9, E. Naredo3, F. Porta3, A. Regini27, G. Sakeilhanou26, W. A. Schmäß27, C. A. Scoa24, T. Serbar9, V. Vladi2, F. A. Vreugden20, R. Wakefield21, P. Zufferey25, P. Sarzi-Puttini13, A. Iagnocco32, C. Pineda32, H. Keen23, M. A. D’Agostino24, L. Tensile20, G. Filippou on behalf of OMERACT US in CPPD working group, 1Luigi Sacco University Hospital, Rheumatology Department, Milan, Italy; 2University of Milan, Department of Clinical Sciences and Community Health, Milan, Italy; 3ASST Great Metropolitain Niguarda, Rheumatology Unit, Milan, Italy; 4Careggi University Hospital, Department of Experimental and Clinical Medicine, Division of Rheumatology, Firenze, Italy; 5Lausanne University Hospital, Department of Diagnostic and Interventional Radiology, Lausanne, Switzerland; 6Psychophysical Rehabilitation Institute, Rheumatology Unit, Buenos Aires, Argentina; 7Polytechnic University of