SUA decreased from mean 500 µmol/L at baseline to 311 µmol at 1 year and 324 µmol/L at year 2. Flares were seen in year 1 in 81.2% (155/186) and year 2 26.0% (45/173) of patients.

The total sum of SUA changes over 2 years as a global measure for individual SUA fluctuation was related to flares in all 3-month periods during year 1 (Table 1) and for year 1 overall (Figure 1), but not for year 2.

**Table 1. Flares and fluctuation of serum urate (SUA) measures during defined observation periods.**

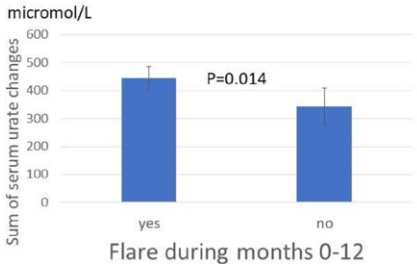
| Flare period (Mths) | | N | Sum of all SUA changes (mean) | SUA change (mean) | >30 µmol/L SUA change (% patients) | >60 µmol/L SUA change (% patients) | >90 µmol/L SUA change (% patients) |
|---|---|---|---|---|---|---|---|
| 0-3 | Flare + | 63 | 467* | 141* | 88.1 | 83.1 | 67.8 |
| | Flare - | 148 | 388 | 165 | 95.5 | 91.5 | 80.8 |
| 3-6 | Flare + | 91 | 459** | 19 | 38.8 | 28.2 | 10.6 |
| | Flare - | 120 | 375 | 17 | 39.4 | 24.5 | 14.9 |
| 6-9 | Flare + | 56 | 482* | 10 | 49.0** | 25.5 | 25.5 |
| | Flare - | 155 | 386 | 26 | 26.5 | 15.5 | 15.5 |
| 9-12 | Flare + | 70 | 470* | 4 | 32.2 | 16.9 | 11.9 |
| | Flare - | 116 | 406 | 9 | 22.6 | 9.4 | 6.6 |
| 0-12 | Flare + | 155 | 445* | 193 | 98.0 | 94.0 | 90.7* |
| | Flare - | 36 | 345 | 160 | 91.7 | 86.0 | 75.0 |
| 12-24 | Flare + | 45 | 411 | 13 | 24.4 | 11.1 | 6.7 |
| | Flare - | 128 | 449 | 14 | 25.8 | 11.7 | 4.7 |

*P<0.05, **P<0.01 for comparisons +/-Flare

Other measures of SUA fluctuation (SUA change during periods, and exceeding thresholds of change) were generally not related to incidence of flares, neither were sensitivity analyses for incidence of flares in periods succeeding observed SUA fluctuations.

**Conclusion:** Fluctuation in SUA, defined as the total sum of mean SUA changes between all study visits, was related to gout flares during year1. Our findings support that a pattern of SUA fluctuation is related to gout flares.

Figure. Fluctuation of serum urate and flare during months 0-12

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## POS0282 UPDATE ON COMPARATIVE CARDIOVASCULAR SAFETY OF FEBUXOSTAT VERSUS ALLOPURINOL AMONG PATIENTS WITH GOUT

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**Background:** Gout is associated with an increased risk of cardiovascular (CV) disease.

**Objectives:** To update comparative CV safety of febuxostat versus allopurinol among patients with gout

**Methods:** Using the 2011-2019 Korea National Health Insurance database, we conducted a cohort study comparing gout patients initiating febuxostat versus allopurinol, with study participants matched on a propensity score (PS) for>60 covariates at a 1:1 ratio. The primary outcome was composite CV outcome of myocardial infarction, coronary revascularization, and stroke. Secondary outcomes were CV and all-cause mortalities in addition to individual components of the primary outcome. Cox proportional hazards models estimated hazard ratios (HRs) and 95% confidence intervals (CIs), comparing febuxostat versus allopurinol initiators.

**Results:** We included 160,930 febuxostat users PS-matched on 160,930 allopurinol users (mean age 59.3 years, 79.6% male). During a mean follow-up of 250 days, the incidence rate of the primary outcome was 2.27 and 2.06 per 100 person-years for allopurinol and febuxostat users respectively, with the PS-matched HR [95% CI] of 1.03 [0.95-1.12]. Analysis on secondary outcomes also showed a similar result except for all-cause mortality with a significantly reduced risk among febuxostat users with a PS-matched HR [95% CI] of 0.84 [0.78-0.91] (Table 1).

**Table 1. Comparative cardiovascular safety between febuxostat and allopurinol**

| | Febuxostat N = 160,930 | | | Allopurinol (Ref) N= 160,930 | | | HR |
|---|---|---|---|---|---|---|---|
| | Events | PY | [a]IR [95% CI] | Events | PY | [a]IR(95% CI] | (95% CI) |
| Composite CV endpoint | 2635 | 128,193 | 2.06 [1.98-2.13] | 2,099 | 92,512 | 2.27 [2.17-2.37] | 1.03 [0.95-1.12] |
| MI | 468 | 129,873 | 0.36 [0.33-0.39] | 341 | 93,808 | 0.36 [0.33-0.40] | 1.13 [0.91-1.39] |
| Coronary revascularization | 1085 | 129,233 | 0.84 [0.79-0.89] | 856 | 93,293 | 0.92 [0.86-0.98] | 1.10 [0.96-1.26] |
| Stroke or TIA | 1490 | 129,163 | 1.15 [1.10-1.21] | 1,187 | 93,252 | 1.27 [1.20-1.35] | 0.99 [0.90-1.10] |
| Death | 2558 | 130,176 | 1.97 [1.89-2.04] | 2,201 | 94,007 | 2.34 [2.24-2.44] | 0.84 [0.78-0.91] |

[a]IR is per 100 person-years. IR=incidence rate, HR=hazard ratio, CI=confidence interval, MI=myocardial infarction, PY=person-years, TIA=transient ischemic attack

**Conclusion:** This large population-based cohort study showed a similar CV safety profile between febuxostat and allopurinol users but found a 16% reduced all-cause mortality among febuxostat users compared to allopurinol, primarily derived from non-CV death reduction.

**Disclosure of Interests:** None declared

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## POS0283 DOES A GOUT STIGMA AMONG RHEUMATOLOGISTS INFLUENCE PERCEPTIONS OF PATIENTS AND TREATMENT DECISIONS?

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**Background:** Gout is an inflammatory condition caused by chronic hyperuricemia, often causing physical and emotional distress and a lower quality of life (QOL).[1-3] Gout stigma is common and impactful,[4] with physicians often perceiving gout as a "lifestyle" disease caused by personal dietary and exercise choices. Further, patients can internalize and anticipate this stigma, influencing how they seek healthcare and adhere to medical therapies.[5]

**Objectives:** This study investigated whether or not a gout stigma exists among rheumatologists and, if so, how it influences physicians' perceptions of patients and treatment decisions. Rheumatoid arthritis (RA) was used as a comparator disease.

**Methods:** 106 practicing rheumatologists completed an online survey regarding perceptions of, experiences with, and recommendations for patients with controlled gout, uncontrolled gout, and rheumatoid arthritis (RA). Disease states were presented in random order. Each set of measures examined rheumatologists' perceptions and judgments of each disease condition on a range of dimensions, including (a) perceptions of patient's compliance with treatment recommendations and responsibility for their disease condition, (b) causal attributions for contributing factors to disease condition, and (c) efficacy of recommended treatment decisions. Answers were provided using a 7-point Likert scale (e.g., patient compliance: 1 = will not comply, 7 = will comply; patient responsibility for condition: 1 = not responsible, 7 = responsible). Prior to analyses, all responses were converted to a 0 to 1 scale for ease of comparison and interpretation.

**Results:** Responses regarding controlled and uncontrolled gout patients were not significantly different, so these two groups were pooled. Compared to patients with RA, rheumatologists perceived patients with gout as significantly more responsible for their disease (p<0.05) and significantly less likely to comply with prescribed treatment regimens (p<0.05, Figure 1). Further, rheumatologists perceived patient personal behavior, diet, BMI, and patient adherence as

greater contributing factors to gout than to RA (all p<0.01). Similarly, change in diet, increased exercise, and weight loss were perceived as more beneficial for managing gout than RA (all p<0.01), and biological treatments were perceived as more effective for managing RA than gout (p<0.01).

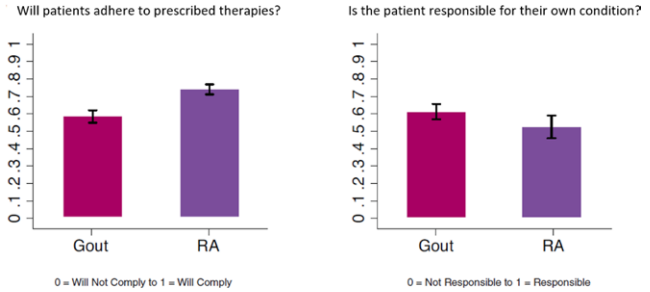


**Figure.** Rheumatologist's mean-level perceptions of patient treatment compliance (left) and responsibility for their condition (right). Error bars represent 95% confidence interval.

**Conclusion:** Despite good intentions when treating gout patients, rheumatologists appear to have causal beliefs and illness perceptions that reflect negative gout-related stereotypes. Compared to RA patients, gout patients were perceived as being more responsible for their condition and were expected to be less compliant with medications and less likely to benefit from biological therapies. Interestingly, there were no differences in rheumatologists' judgments between patients with controlled and uncontrolled gout, suggesting that their beliefs may refer to gout itself rather than the degree of control or management. Educating physicians, particularly rheumatologists, on the myths surrounding gout may improve clinical care and, therefore, patient outcomes.

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## POS0284 CHANGES OF ESTIMATED GLOMERULAR FILTRATION RATE AFTER LONG-TERM FEBUXOSTAT OR ALLOPURINOL TREATMENT IN GOUT PATIENTS

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**Background:** Under the hypothesis that hyperuricemia is a potentially modifiable risk factor for progression of CKD, there has been numerous small, single-center studies that have shown that use of urate-lowering therapy (ULT) delayed CKD progression in patients with hyperuricemia or CKD. However, recent three multicenter, randomized controlled trials have not shown beneficial effect of ULT on the progression of CKD among CKD patients without gout and in DM patients with albuminuria.

**Objectives:** We investigated whether ULT may have a beneficial effect on the progression of CKD in gout patients.

**Methods:** Gout patients who took the study medication for more than 1 year were identified from the Cardiovascular Safety of Febuxostat or Allopurinol in Patients with Gout (CARES) trial, which is a large, multicenter, randomized controlled trial. We analyzed the estimated glomerular filtration rate (eGFR) slope (mL/min/1.73 $m^2$ per year) using the CKD-EPI equation. Using logistic regression, we investigated risk factors for CKD progression, defined as eGFR slope of lower than 0 mL/min/1.73 m2 per year.

**Results:** During the study period [median (interquartile range, IQR) 3.1 (2.0-4.8) year], 4,144 patients performed median (IQR) 12 (9~15) creatinine tests, the GFR slope was analyzed as median (IQR) 0.5 (-0.8-1.6). The median (IQR) values of the GFR slope were -1.2 (-2.3--0.5) in the CKD progression group (n=1,590) and 1.3 (0.7-2.2) in the CKD progression delayed group (n=2,554). After adjusting well known factors associated with CKD progression, average level of serum uric acid ≥ 6 mg/dL during study period was significantly associated with CKD progression (adjusted odds ratio 1.73; 95% confidence interval 1.49-2.01, p < 0.0001).

**Conclusion:** This study showed that eGFR did not decrease in more than half of gout patients after long term febuxostat or allopurinol administration. ULT may have a beneficial effect on slowing the progression of CKD in gout patients.

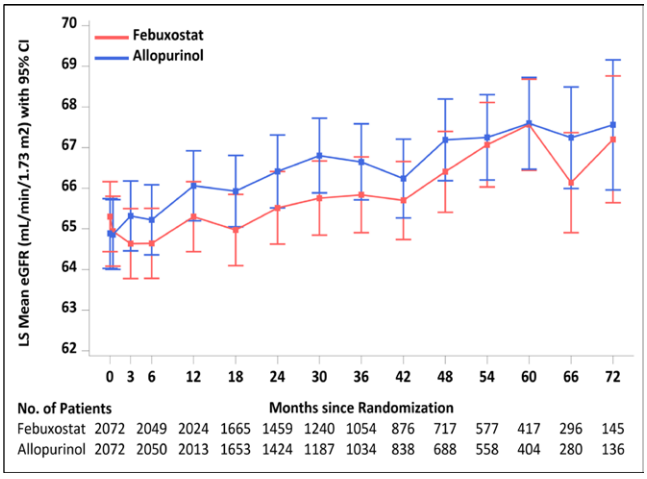


**Figure 1.** Changes of estimated glomerular filtration rate during febuxostat or allupurinol administration.

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**Disclosure of Interests:** None declared

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## POS0285 SUB-STANDARD CARE FOR PATIENTS WITH GOUT, DESPITE UPDATED GUIDELINES: A UK-WIDE, POPULATION-BASED COHORT STUDY

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**Background:** Treat-to-target urate-lowering therapy (ULT) is highly effective at preventing flares and improving quality of life for patients with gout.[1] However, in 2012, only 27% of patients with gout in UK primary care received prescriptions for ULT within 12 months of diagnosis.[2] Since then, EULAR and BSR gout management guidelines have been updated, to recommend that all patients with gout should have ULT discussed and offered to them, with uptitration of dosing until target urate levels are achieved. We investigated whether gout management has improved in recent years.

**Objectives:** To assess temporal trends in the initiation of ULT and attainment of serum urate targets following new gout diagnoses in UK primary care from 2004 to 2020.

**Methods:** The Clinical Practice Research Datalink (CPRD) Gold database was used to assess the management of patients with index diagnostic codes for gout in UK primary care between January 2004 and October 2020. We analysed the proportion of patients with the following outcomes within 12 months of diagnosis: i) initiation of ULT (allopurinol, febuxostat, benzbromarone, probenecid or sulfinpyrazone); ii) serum urate ≤360 µmol/L; iii) serum urate ≤300 µmol/L; iv) treat-to-target urate monitoring (defined as two or more serum urate levels performed within 12 months of diagnosis and/or one or more urate ≤300 µmol/L). Interrupted time-series analyses (ITSA) were used to estimate the impact of updated EULAR and BSR gout management guidelines on these outcomes. Multivariate logistic regression was used to analyse predictors of ULT prescription and target attainment following new gout diagnoses.

**Results:** 129,972 patients had index gout diagnoses between January 2004 and October 2020, of whom only 37,529 (28.9%) had ULT initiated within 12 months of diagnosis. ULT initiation improved modestly over the study period, from 26.8% for those diagnosed in 2004 to 36.6% in 2019, decreasing to 34.7% in 2020 (Figure 1). Of patients diagnosed in 2020 who had a serum urate performed within 12 months of diagnosis, 36.0% attained a urate ≤360 µmol/L, while 17.1% attained a urate ≤300 µmol/L. Of all participants, 18.9% received treat-to-target urate monitoring. In ITSA models, no statistically significant improvements in ULT prescription or urate target attainment were observed after publication of updated