Results: A total of 105 patients were enrolled. 33 patients with ulcerations were older, with prolonged duration with gout and tophi, a higher rate of obesity, greater number of tophi, lower level of GFR, and higher level of serum creatinine, ESR and CRP. The mean duration of ulceration was 1.63 ± 2.32 months. The ulcerations mainly located in ankle (34.21%) and MTP (39.47%), with a mean size of 32.37×22.76 mm. The majority of ulcerations were categorized as stage I (42.4%) and stage II (51.5%). In univariate regression analysis, age, glucocorticoid abuse, gout duration, tophi duration, tophi number and GFR were associated with ulceration. In the multivariable model, significant differences were demonstrated in glucocorticoid abuse, tophi duration, tophi number.

Conclusion: Gout patients with ulceration(s) over tophi present several different aspects of clinical characteristics compared with those without ulceration. Glucocorticoid abuse, prolonged duration with tophi and greater number of tophi are risk factors for ulceration over tophi. Avoiding indiscriminate use of glucocorticoid needs to be emphasized, and prevention of tophi formation via initiate effective urate-lowering therapy is highly recommended in patients with gout.

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SAT0426

TOPHI, THE PREDICTIVE FACTOR OF ARTERIAL STIFFNESS IN PATIENTSWITH GOUT AND HYPERURICEMIA

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Background: Gout is the most common form of inflammatory arthritis and its prevalence is increasing in recent decades. Many studies have reported that gout and hyperuricemia are associated with an increase in

Figure 1. Multiple ulcerations over tophi in one patient

Table 1. Clinical parameters in gout patients with ulceration and without ulceration

*Variable	Total (n= 105)	Ulceration (n = 33)	Non-ulceration (n = 72)	P value
Age, years	54.2 ± 14.9	61.1 ± 16.0	51.1 ± 14.9	0.002
Male, n (%)	102 (97.1%)	32 (97.0%)	70 (97.2%)	0.943
BMI, kg/m ²	24.2 ± 3.6	23.7 ± 3.5	24.4 ± 3.7	0.335
Smoking history, n (%)	45 (42.9%)	17 (51.5%)	28 (38.9%)	0.225
History of alcohol intake, n (%)	33 (31.4%)	11 (15.3%)	22 (30.6%)	0.776
Diet control, n (%)	77 (73.3%)	23 (69.7%)	54 (75.0%)	0.568
Glucocorticoid abuse, n (%)	40 (38.1%)	22 (68.8%)	18 (25.0%)	< 0.001
Gout duration, years	10.9 ± 6.2	12.5 ± 7.9	10.2 ± 5.2	0.208
Tophi duration, years	4.4 ± 3.1	6.6 ± 3.7	3.4 ± 2.1	< 0.001
Tophi number, n	5.2 ± 4.1	7.6 ± 4.9	4.1 ± 3.1	0.003
Hypertension, n (%)	49 (46.7%)	17 (51.5%)	32 (44.4%)	0.500
Diabetes, n (%)	21 (20.0%)	11 (33.3%)	10 (13.9%)	0.021
Cardiovascular disease, n (%)	9 (8.6%)	4 (12.1%)	5 (6.9%)	0.614
Urinary calculus, n (%)	37 (35.2%)	12 (36.4%)	25 (34.7%)	0.870
Serum creatinine, μmol/L	109.1 ± 55.0	122.9 ± 62.1	102.7 ± 50.0	0.003
Serum uric acid, μmol/L	624.0 ± 130.7	650.6 ± 117.6	611.8 ± 135.3	0.159
ESR, mm/h	59.2 ± 39.4	79.9 ± 37.5	49.7 ± 36.7	< 0.001
CRP, mg/L	44.7 ± 47.1	53.8 ± 39.9	40.7 ± 49.8	0.005
GFR, ml/min/1.73 m ²	61.2 ± 30.0	51.1 ± 31.1	65.8 ± 28.6	0.001

n, number.

* refers to number of the patients.

Table 2. Ulceration characteristics in 33 patients with gout including 38 ulcerations

Variable	Results
Ulceration duration, month	1.63 ± 2.32
Ulceration location	
Ankle, n (%)	13 (34.21%)
MTP, n (%)	15 (39.47%)
Knee, n (%)	1 (2.63%)
MCP, n (%)	5 (13.16%)
PIP, n (%)	2 (5.26%)
Hip, n (%)	1 (2.63%)
Elbow, n (%)	1 (2.63%)
Ulceration size, mm	
Length	32.37 ± 16.10
Width	22.76 ± 15.28
Ulceration stage, n (%)	
I	14 (42.4%)
II	17 (51.5%)
III	2 (0.61%)
IV	0

n, number.

all-cause mortality and cardiovascular mortality. Increased arterial stiffness is an independent marker of cardiovascular diseases and risk predictors. Many studies have shown a significant correlation between uric acid levels and arterial stiffness. Augmentation Index (AI) is an indirect measure of arterial stiffness. Tophi is formed when gout is left untreated for a long time.

Objectives: The aim of this study is to determine whether the presence of tophi could predict an increase in arterial stiffness.

Methods: Between June 2017 and June 2018, augmentation index was measured using SphygmoCor for patients who visited Jeju National University Hospital in South Korea with gout or hyperuricemia. Medical records, laboratory and AI data were retrospectively analyzed.

Results: One hundred twenty two patients participated in the study and AI was measured. Most (96.7%) of the patients were male. At the time of the examination, 99 patients (81.1%) were treated with uric acid lowering agent and the mean duration of the disease was 6.9 years. When the patients were divided into two groups according to the presence or absence of Tophi, the average age (60.2 ± 11.6 vs 53.4 ± 13.2 , $p=0.023$) of the patients with Tophi was significantly higher, duration of disease (13.0 ± 6.5 vs 5.4 ± 5.4 , $p=0.000$) was longer and the AI (28.7 ± 7.8 vs 20.7 ± 10.4 , $p=0.001$) was higher. When multiple linear regression analysis was performed to exclude the effects of other variables (DM, HTN, hyperlipidemia, age, BMI, total cholesterol, creatinine), tophi was a predictor of high AI ($b = 5.478$; 95% CI, 0.343-10.613; $p=0.037$). Multiple logistic regression analysis was performed to determine the predictors of tophi. The duration of disease and AI @ 75 values were significantly predictive of the presence of tophi (Odds ratio 1.113; 95% CI, 1.024-1.209; $p=0.012$).

Conclusion: This study suggests that the presence of tophi is an independent predictor of increased arterial stiffness in patients with gout and hyperuricemia.

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SAT0427 RISK OF MALIGNANCIES IN PATIENTS WITH GOUT: A POPULATION-BASED COHORT STUDY

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Background: Gout is a chronic disease characterized by deposition of monosodium urate crystals. Comorbidities including hypertension, chronic kidney disease, obesity, diabetes and cardiovascular diseases are common in patients with gout. In contrast to these well-known comorbidities, little is known about the risk of malignancies in patients with gout.

Objectives: To investigate the risk of malignancies in patients with gout, compared with general population.

Methods: We conducted a retrospective cohort study using Korean National Health Insurance Service-Medical check-up Cohort Database, which composed of qualified individuals as of 2002 in the age of 40-79 in 2002-2003 who received general medical check-up (Approximately 510,000). We enrolled patients newly diagnosed with gout, based on the diagnostic code and relevant medication history, who were between 40 and 65 years of age at the time of diagnosis between 2003 and 2007 (we washed out first year for newly detected cases). The gout patients (case group) were matched by 1:2 propensity score matching using confounding variables (age, sex, income group, region of residence, smoking status, alcohol intake, exercise habit, comorbidities including diabetes mellitus, hypertension and dyslipidemia, body mass index, blood pressure, serum glucose level, total cholesterol, and hemoglobin) and survival analysis was performed to estimate the risk of malignancy.

Results: A total of 4991 cases and 419992 controls were identified. The prevalence of Gout was 4991 (1.17%, male 4093 (82.01%); female 898 (17.99%)). During a mean follow-up of 12 years, malignancy was newly diagnosed in 30262 patients (7.12% of the total cohort). Gout was associated with increased risk of malignancy in the multivariable Cox proportional hazard regression analysis before propensity score matching (hazard ratio (HR) 1.248, 95% confidence interval (CI) 1.130-1.379, $p < 0.001$), as well as after matching (HR 1.369, 95% CI 1.209-1.549, $p < 0.001$).

Conclusion: A total of 4991 cases and 419992 controls were identified. The prevalence of Gout was 4991 (1.17%, male 4093 (82.01%); female 898 (17.99%)). During a mean follow-up of 12 years, malignancy was newly diagnosed in 30262 patients (7.12% of the total cohort). Gout was associated with increased risk of malignancy in the multivariable Cox proportional hazard regression analysis before propensity score matching (hazard ratio (HR) 1.248, 95% confidence interval (CI) 1.130-1.379, $p < 0.001$), as well as after matching (HR 1.369, 95% CI 1.209-1.549, $p < 0.001$).

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Not applicable

Table. Estimation of risk of malignancy using Cox proportional hazard regression analysis

	Before propensity score matching Cox			After propensity score matching Cox		
	HR	95% CI	P	HR	95% CI	P
Gout	1.248	1.130-1.379	<0.001	1.369	1.209-1.549	<0.001

Disclosure of Interests: None declared

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SAT0428 ANALYSIS OF THE PREVALENCE AND TIMING OF GOUT CO-MORBIDITY IN PATIENTS UNDERGOING KIDNEY TRANSPLANT

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Background: Patients receiving kidney transplants are at increased risk for the development of hyperuricemia and gout compared to the general population, which is generally attributed to the frequent use of calcineurin inhibitors (cyclosporine and tacrolimus). However, the precise proportion of renal transplant patients that develop gout and the time period post-transplant in which this occurs is less established.

Objectives: To analyze a large, mixed-insurance, US population database to determine gout prevalence in the renal transplant population.

Methods: A retrospective review of Humana Healthcare claims data (private and Medicare) from 2007 to 2017 was undertaken to identify kidney transplant patients with at least 6 months in plan prior to transplant and at least 6 months in plan post-transplant. Diagnosis of gout (≥ 1 gout ICD 10/ICD 9 code) was evaluated in relationship to the time of kidney transplant.

Results: The database contained 6,082 patients with a kidney transplant and at least 6 months in plan both pre and post-transplant. Of the 6,082 kidney transplant patients, 1,505 (25%) had a gout diagnosis: 908 (15% of transplant patients) with gout before and after transplant and 597 (10% of transplant patients) with a gout code only after transplant. In patients developing gout post-transplant, the mean time between transplant and gout diagnosis was 1.79 ± 1.85 years.

Conclusion: As expected, gout was a common comorbidity in renal transplant patients. 15% of the patients receiving renal transplants had gout prior to the transplant, and another 10% developed new-onset gout a mean of 1.79 years after receiving a renal transplant. This retrospective analysis demonstrates that kidney transplant patients commonly suffer from gout both before and after their transplant. In addition to more research on this topic, an increased focus on screening and treatment of gout in the renal transplant population may be warranted.

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SAT0429 COMORBIDITIES IN AN EARLY DIAGNOSED COHORT OF UNCONTROLLED VERSUS CONTROLLED GOUT: ANALYSIS OF A LARGE US PAYER DATABASE

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Background: Gout is a widely prevalent progressive systemic inflammatory arthritis. The pathogenic cause of gout is elevated serum uric acid or hyperuricemia, and appropriate treatment of gout involves reduction of uric acid levels to a minimum goal of less than 6 mg/dL. Patients who do not achieve uric acid goals are generally described as uncontrolled gout patients and tend to do worse in terms of clinical outcomes such as occurrence of flares and persistence/worsening of tophi. Gout patients often suffer from specific comorbidities, though whether uncontrolled gout patients have a different comorbidity profile is unclear.

Objectives: The objectives of this evaluation were to compare the comorbidities and hospitalizations in uncontrolled versus controlled gout patients from a large de-identified US payer database.

Methods: A retrospective review of Humana Healthcare data from 2007 to 2016 in private pay and Medicare patients was performed to identify