in 2006 to 67/100,000 in 2014 ($p<0.001$). The largest increase in ED visits was a 28% increase in prevalence among the 45–64 years age group from 91/100,000 to 116/100,000 (27%, $p<0.001$). Men were responsible for 78% of the ED visits in both 2006 and 2014.

Age in years	Total number of ED visits in 2006	Prevalence of ED visits/100,000 population in 2006	Total number of ED visits in 2014	Prevalence of ED visits/100,000 population in 2014
18–44	49 265	44	55 216	48
45–64	68 544	91	97 081	116
65–84	44 358	137	53 206	133
85+	6242	128	8126	132
All ages	2 05 905	56.5	2 13 780	67

Conclusions: Emergency Department visits have increased dramatically in the US over the last 9 years, and this increase is mostly in the 45–64 years age group perhaps reflecting the undermanaged burden of uncontrolled gout. Education, improved recognition and long-term management as well as increased use of preventive strategies is needed.

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OP0186

NEPHROLITHIASIS AS A COMPLICATION OF GOUT: A CROSS-SECTIONAL STUDY WITH HELICAL COMPUTED TOMOGRAPHY

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Background: Gout is the most prevalent inflammatory arthritis, secondary to persistent hyperuricemia. It has been associated with development and progression of cardiometabolic diseases and chronic kidney disease. Several studies have shown a relationship between hyperuricemia and history of nephrolithiasis, although cut-off levels for uric acid and other related risk factors are still not well established.

Objectives: To determine the frequency of nephrolithiasis (NL) detected by helical computed tomography (h-CT) and its associated risk factors in patients with gout in a tertiary hospital of São Paulo, Brazil.

Methods: This cross-sectional study, conducted from 2016 to 2017, included 80 patients with a diagnosis of gout, according to the criteria of the ACR/EULAR-2015. They were questioned about the previous history of NL and submitted to h-CT for NL. Two groups were established: with and without NL; and later, unilateral and bilateral lithiasis. Anthropometric data, disease duration, serum uric acid (UA), creatinine, urinary pH(pH) and urinary UA of groups were compared. Statistical analysis included: mean, standard deviation, relative percentages, t-student test, chi-square test and ROC curve. Comparison of time to event-rate was performed by Kaplan-Meier method with log rank test. $p<0.05$ was considered statistically significant.

Results: NL was confirmed by h-CT in 30% of patients. However, only 16% reported previous history of NL. Groups with NL and without NL were similar in mean age (65.96 ± 5.54 and 68.89 ± 9.58 years, $p=0.147$), disease duration (16.63 ± 11.49 and 11.77 ± 9.74 years, $p=0.056$) and BMI (29.72 ± 5.09 and 28.82 ± 5.08 , $p=0.470$). The NL group had higher pre-treatment UA compared with patients without NL (9.36 ± 1.09 and 8.80 ± 1.08 mg/dL, $p<0.05$) and the most acidic pH (5.26 ± 0.42 and 5.74 ± 0.62 , $p<0.05$). In addition, patients with bilateral NL presented higher BMI than unilateral patients ($p=0.036$). According to ROC curve analysis, the best cutoff value for pre-treatment UA was 8.5 mg/dL, yielding sensitivity and specificity of 75% and 50%, respectively, for predicting NL events in this study. Kaplan-Meier analysis showed that after 20 years of disease, 55% of patients with pre-treatment AU ≥ 8.5 mg/dL had NL, while only 18% of patients with pre-treatment AU < 8.5 mg/dL.

AU ≥ 8.5 mg/dL			
Sensitivity	75%	95% IC: 53% - 90%	
Specificity	50%	95% IC: 36% - 64%	
Without NL		With NL	
AU < 8.5 mg/dL	27	6 (18%)	
AU ≥ 8.5 mg/dL	29	18 (38%)	

Conclusions: Since prevalence of NL in gout patients cannot be determined reliably from the clinical history, an active screening test for NL should be performed in these patients. Our study suggests that urine acidification and UA ≥ 8.5 mg/dL are associated with an increased risk of NL during follow-up of gout patients and should be corrected in their treatment.

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OP0187

FRUCTOSE-CONTAINING BEVERAGES IS AN INDEPENDENT RISK FACTOR FOR GOUT EARLY-ONSET IN SOUTH CHINA

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Background: A trend of earlier onset of gout has been reported even though its incidence increases in a linear fashion with age until 70 years. Dietary factors have been supposed to be contributed to the early onset of gout.

Objectives: To investigate diet characteristics of gout and their impact on the early onset of gout.

Methods: Consecutive gout patients who fulfilled the 2016 ACR/EULAR classification criteria were recruited between Dec 2016 and Dec 2017. A cross-section survey on dietary factors before gout onset was conducted with semi-quantitative diet questionnaire. The questionnaire included alcohol, fructose-containing beverages, soup, animal organs, sea-foods, hotpot, tea and coffee, which impact on

serum uric acid (sUA) and aren't major macronutrient provider in Chinese dietary patterns. The patients with gout onset before age 30 years were defined as early-onset group while the others were defined as control group.

Results: Among 180 gout patients recruited, there were 69 (38.3%) patients in early-onset group and 111 (61.7%) in control group. Compared with control group, gout patients in early-onset group presented significantly higher level of sUA, estimated glomerular filtration rate and proportion of obesity, but lower fraction excretion of uric acid and prevalence of hypertension (table 1, $p<0.05$). The results of diet questionnaire showed that more patients in early-onset group consumed fructose-containing beverages ≥ 3 times/week, but less alcohol, animal organs and tea (all $p<0.05$, figure 1). There were no significantly difference in the consumption of soup, seafood, hotpot and coffee. Consuming fructose-containing beverages ≥ 3 times/week [OR 8.3 (2.5, 27.1), $p<0.001$], alcohol ≥ 1 standard unit/d [OR 0.27 (0.10, 0.80), $p=0.017$] and tea ≥ 3 times/week [OR 0.33 (0.12, 0.92), $p=0.033$] were associated with early-onset gout after adjusted by variables which were significantly different between early-onset group and control group (table 1).

Abstract OP0187 – Table 1. Comparison of clinical characteristics between the early-onset group and control group

Characteristics	all patients (n=180)	early-onset group (n=69)	control group (n=111)	P
Male, n(%)	168 (93.3)	68 (98.6)	100 (90.1)	0.027
Age, years	42.5 $\pm$ 15.5	28.3 $\pm$ 7.2	51.4 $\pm$ 12.4	<0.001
Age of onset, years	37.8 $\pm$ 15.1	23.5 $\pm$ 5.1	46.7 $\pm$ 12.1	<0.001
Duration of gout, years	3.0 (1.0,8.0)	3.0 (2.0,5.0)	3.0 (1.0,7.0)	0.782
Family history, n (%)	63 (35.0)	29 (42.0)	34 (30.6)	0.148
Tophi, n (%)	31 (17.2)	10 (14.5)	21 (18.9)	0.544
sUA, mg/dl	9.0 $\pm$ 2.4	9.9 $\pm$ 2.1	8.7 $\pm$ 2.1	<0.001
FEUA, %	3.9 (2.8,5.2)	3.2 (2.3,4.7)	4.2 (3.0,5.7)	0.002
eGFR, ml/min ^{1.73m} ²	83.2 $\pm$ 19.7	91.3 $\pm$ 17.3	78.3 $\pm$ 19.5	<0.001
Hypertension, n (%)	58 (32.2)	11 (15.9)	47 (42.3)	<0.001
Diabetes mellitus, n (%)	26 (14.4)	7 (10.1)	19 (17.1)	0.276
Dyslipidemia, n (%)	117 (65.0)	44 (63.8)	73 (65.8)	0.873
Body mass index kg/m ²	25.4 $\pm$ 3.5	25.7 $\pm$ 4.1	25.2 $\pm$ 3.0	0.352
Obesity, n (%)	46 (25.6)	24 (34.8)	22 (19.8)	0.034

sUA: serum uric acid; FEUA: fraction excretion of uric acid; eGFR: estimated glomerular filtration rate.

Conclusions: Fructose-containing beverages may be an independent risk factor for gout early-onset in south China. Patient education should emphasise diet management.

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OP0188

EFFECTS OF ALLOPURINOL VERSUS FEBUXOSTAT ON CARDIOVASCULAR RISK IN KOREAN PATIENTS WITH GOUT: A NATION-WIDE COHORT STUDY

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

Objectives: We aimed to investigate comparative CV risk among gout patients who initiated allopurinol versus febuxostat.

Methods: Using the 2002–2015 Korean National Health Insurance Service (KNHIS) data for the whole Korean population, we conducted a cohort study on patients aged ≥ 40 years who had ICD-10 diagnosis code for gout and initiated allopurinol or febuxostat without prior history of urate lowering therapy, excluding those with chronic kidney disease, cancer, or dialysis treatment. The primary outcome was a composite CV endpoint of hospitalisation for myocardial infarction, stroke/transient ischaemic attack, or coronary revascularisation. Secondary outcomes were individual components of the primary outcome, and hospitalisation for heart failure (HF). Follow-up time started from the day after the first date the study drug was initiated and continued through to the earliest date among the following censoring events: discontinuation of the study drugs, outcome occurrence, disenrollment, end of study dataset, or death. After propensity score (PS)-matching with a 4:1 ratio for allopurinol and febuxostat initiators to adjust for baseline confounding, we estimated hazard ratio (HR) and 95% confidence interval (CI) of CV risks in allopurinol initiators versus febuxostat.

Results: We included 39 636 allopurinol initiators PS-matched on 9909 febuxostat initiators with a mean age of 59 years and 78% male. Before PS matching, baseline CV risk factors including hypertension, dyslipidemia, diabetes, and previous ischaemic heart disease were more prevalent in febuxostat initiators. The incidence rate per 100 person-years for primary composite endpoint was 2.33 in allopurinol and 2.12 in febuxostat initiators in the primary as-treated analysis. The HR (95% CI) for the primary outcome associated with allopurinol was 1.18 (0.98–1.42) versus febuxostat. Secondary outcome analyses showed similar results (table 1).

Abstract OP0188 – Table 1. Risk of cardiovascular events in allopurinol versus febuxostat initiators

	Allopurinol (n=39,636)			Febuxostat (n=9,909)			HR (95% CI)
	Events (n)	person- years	Incidence rate per 100 person- year	Events (n)	person- years	Incidence rate per 100 person- year	
AS-TREATED ANALYSIS							
Primary outcome							
Composite CV end point	735	31 605	2.33	133	6272	2.12	1.18 (0.98–1.42)
Secondary outcomes							
MI	105	31 528	0.33	20	6269	0.32	1.03 (0.64–1.68)
Coronary revascularisation	215	31 546	0.68	31	6269	0.49	1.42 (0.97–2.08)
Stroke/TIA	498	31 572	1.58	94	6271	1.50	1.14 (0.91–1.43)
Heart failure	956	30 611	3.12	206	6108	3.37	1.15 (0.99–1.34)

Propensity-score matching was used to adjust more than 50 covariates including demographic characteristics, medical comorbidities such as CV risk factors, use of gout specific and non-specific medications, and health care utilisation pattern. CI=confidence interval; CV=cardiovascular; HR=hazard ratio; MI=myocardial infarction; TIA=transient ischaemic attack

Conclusions: In this large Korean population-based cohort study, CV risks appear to be numerically, but not statistically significantly, elevated among allopurinol initiators compared to febuxostat initiators.

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