physician or hospital visit. To ensure incident gout, we required that all cases have ≥ 10 years of prior registration without a gout diagnosis. Gout cases were matched 1:1 with controls on age, sex, and cohort entry time. Prior VTE events were excluded after matching. VTE was defined using ICD-9/ICD-10 codes plus use of oral anti-coagulant. We calculated incidence rate ratios (IRRs) and age, sex, and entry time matched multivariable hazard ratios (HRs) for the risk of VTE. Sensitivity analyses were conducted to assess for unmeasured confounders (e.g., obesity).

Results: Among 105,307 individuals with newly diagnosed gout (61% male, mean age of 58 yrs), we observed 1,212 VTE events (mean follow-up time of 5.3 yrs). The fully adjusted HR was 1.27 (95% CI, 1.16–1.39) (Table 1). Our results remained significant in the sensitivity analyses (OR of 2.0 between gout and unmeasured confounder and a 50% prevalence for obesity). There were 437 incident VTE events within 3 yrs prior to the gout diagnosis. Compared to controls, during the 3rd, 2nd, and 1st yrs before gout diagnosis, the fully adjusted HRs for VTE in patients with imminent gout were 1.51, 1.58 and 1.73. The corresponding HRs in the 1st, 2nd, 3rd, 4th, and 5th yrs after gout diagnosis were 1.54, 1.39, 1.38, 1.37, and 1.32, respectively.

Table 1

	Gout (N)	Control (N)	No. of VTE events		IRRs (95% CI)	Age-, sex-adjusted (95% CI)	Fully adjusted* (95% CI)
			Gout	Control			
Before gout diagnosis							
-3yrs	105,744	106,219	437	254	1.73 (1.48,2.03)	1.68 (1.44,1.96)	1.51 (1.29,1.77)
-2yrs	105,638	106,146	331	181	1.84 (1.53,2.22)	1.78 (1.49,2.14)	1.58 (1.31,1.90)
-1yr	105,493	106,055	186	90	2.08 (1.61,2.70)	2.01 (1.56,2.58)	1.73 (1.34,2.24)
After gout diagnosis							
1yr	105,307	105,965	229	116	1.99 (1.58,2.51)	1.92 (1.54,2.40)	1.54 (1.22,1.94)
2yrs	105,307	105,965	390	234	1.68 (1.43,1.99)	1.63 (1.39,1.92)	1.39 (1.18,1.64)
3yrs	105,307	105,965	540	331	1.65 (1.43,1.89)	1.60 (1.39,1.83)	1.38 (1.20,1.59)
4yrs	105,307	105,965	667	414	1.63 (1.44,1.85)	1.58 (1.40,1.79)	1.37 (1.21,1.56)
5yrs	105,307	105,965	775	506	1.55 (1.38,1.74)	1.51 (1.35,1.68)	1.32 (1.18,1.49)
Overall	105,307	105,965	1,212	858	1.44 (1.32,1.57)	1.40 (1.29,1.53)	1.27 (1.16,1.39)

*Adjusted for Charlson comorbidity index, cancer, alcoholism, hypertension, sepsis, trauma, healthcare utilization, NSAIDs, HRT, glucocorticoid and fractures, surgery within 1 year before entry cohort.

Conclusions: Patients with gout have an increased risk of VTE. The risk increases gradually before gout diagnosis, peaks in the year prior to gout diagnosis, and then progressively declines. Our findings suggest that hyperuricemia or gout associated inflammation may be a contributing factor for VTE.

Disclosure of Interest: None declared

THU0441 **SYNOVIAL FLUID LEUKOCYTE COUNT AND ITS ASSOCIATION WITH CRYSTAL DEPOSITION IN ASYMPTOMATIC HYPERURICEMIA: A PRELIMINARY REPORT**

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Background: Joint deposits of monosodium urate (MSU) crystals in asymptomatic hyperuricemia (AH) may associate with more severe forms of atherosclerosis [1]. It likely relates to crystal-driven subclinical inflammation, a phenomenon well described in gout [2] but to date not assessed in AH.

Objectives: To assess the synovial fluid (SF) leukocytes count in patients with AH depending on the presence of crystals.

Methods: Consecutive patients with AH were selected from nephrology clinics. Hyperuricemia threshold was established at serum uric acid (SUA) $\geq 7mg/dL$; those on current urate-lowering therapy were excluded. Ultrasound (US) of knees, ankles and first metatarsophalangeal joints was performed blinded to clinical and laboratory data, in order to perform US-guided aspiration and obtain SF samples. These samples were analyzed in fresh by two observers, using a compensated polarized light microscope equipped with two viewing stations. The second observer was in addition unaware of US findings. The presence of leukocytes and crystals was established by consensus. SF leukocyte count was performed using a Neubauer counting camera. Mann-Whitney's U and Kruskal-Wallis' H were used to compare difference in leukocyte counts between groups.

Results: To end of January 2017, 30 patients have been assessed, with SF samples available from 27 (three showed no joint effusion at US). Median age was 70 years (p25–75 59.8–75.5), and 16 of them (60%) were males. Median (p25–75) SUA and estimated glomerular filtration rate were 8.1 mg/dL (7.6–8.5) and 37.0 mL/min (31.0–47.5), respectively. Seven (25%) were on diuretics. After microscopy evaluation, MSU crystals were found in four patients (14.8%), calcium pyrophosphate (CPP) crystals in five (18.5%), and no crystals in 18 (66.7%). Figure shows median leukocytes count according to crystal group: 200/mm³ (138–540) in MSU group; 60/mm³ (50–235) in CPP group; and 30/mm³ (10–53) in those with no crystal at SF. A statistically significant difference was found between the three groups (p=0.001), and comparing MSU crystals and no crystals groups (p<0.001); no difference was found between MSU and CPP groups (p=0.111).
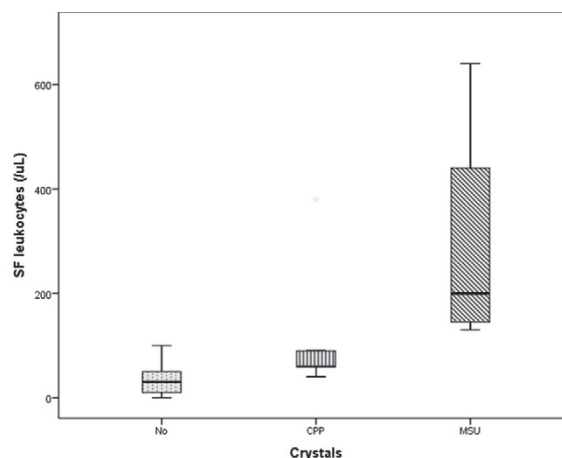
Conclusions: In a preliminary report, MSU crystal deposition in patients with AH leads to higher SF leukocyte count, indicating low-grade inflammation. Despite low numbers and being an ongoing study, this significant finding might contribute to explain the severe atherosclerosis data recently reported in AH patients with silent crystal deposits.

References:
[1] Arthritis Rheumatol 2016;68:1531.
[2] Arthritis Rheum 1991;34:141.

Disclosure of Interest: None declared

THU0442 **EHEALTH SUPPORTED COLLABORATIVE CARE MODEL FOR GOUT INVOLVING RHEUMATOLOGY, PHARMACY, AND DIETETICS: PROOF-OF-CONCEPT OBSERVATIONAL STUDY**

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Background: Sub-optimal quality of care for gout, the most common inflammatory arthritis, has called for novel models to improve care and outcomes of patients.

Objectives: Our objective was to evaluate the feasibility of the "Virtual Gout Clinic Study" (VGCS) a collaborative approach to gout management involving rheumatology, pharmacy, and dietetics that take advantage of eHealth, namely, shared access of electronic medical records (EMRs), to support this unique, decentralized model of care.

Methods: *Design:* We conducted a 1-year, proof-of-concept, longitudinal observational study with a target of 30 patients. *Eligibility:* Patients with gout were eligible if they were: 1) seen in 1 of 4 rheumatology practices with 8 rheumatologists participating across British Columbia, Canada; 2) experienced ≥ 1 flare in the past year; 3) have a serum uric acid (SUA) level ≥ 360 μmol/L within the previous 2 months. *Follow-up:* Within the *VGCS*, patients receive follow-up with their rheumatologist on an as needed-basis, monthly telephone consults from the study pharmacist, and 1 telephone consult with the dietician. In this decentralized model of care, health care professionals are not co-located but have access to the patient's EMR to facilitate remote communication and collaboration. *Outcomes:* Prospective data was collected at baseline, 3, 6, and 12 months. The primary outcome measure was SUA at 12-months, specifically below recommended target level of 360 μmol/L. Secondary outcomes included patient reported outcome measures including the Compliance Questionnaire Rheumatology, Health Assessment Questionnaire Disability Index, and EQ-5D, as well as information on interventions provided within the *VGCS*.

Results: Overall, 33 individuals with gout participated in the *VGCS*. There were 22 males (88%) and mean age was 60.8±15.3 years. 29, 28, and 25 patients have completed follow-up at 3, 6, and 12 months respectively. At baseline, 22 (67%) patients were prescribed urate-lowering therapy (ULT; 21 with allopurinol and 1 with febuxostat). The remaining 11 patients initiated ULT during the study period. Figure 1 shows mean SUA decreased over baseline, 3, 6, and 12 months from 451 μmol/L, 367 μmol/L, 356 μmol/L, and 364 μmol/L, respectively, with 67% of patients having SUA <360 μmol/L at 12 months. A total of 126 pharmacist and 24 dietician consults have been provided. Pharmacist interventions included: uptitration of allopurinol dosage for 15 patients, restarting of ULT for 4 non-adherent patients, discontinuation of unnecessary medications for 12 patients, and renewals of prescription medications using solely electronic communications for 4 patients.

Conclusions: These findings provide evidence for the feasibility and effectiveness of the *VGCS*. With respect to feasibility, we successfully established the shared EMR framework between rheumatologists and study pharmacist and dietitian and demonstrated utility with respect to facilitating communication and collaborative

Figure 1. SUA according to allopurinol dose (baseline to 12 months)
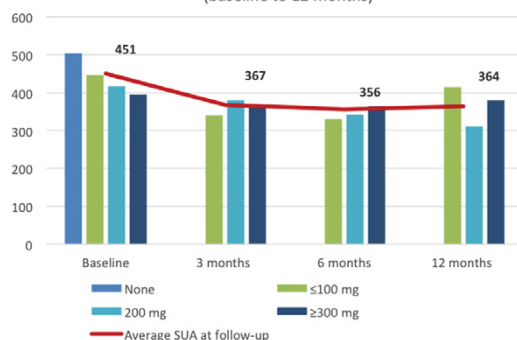
care between health care providers and providing outcomes data. With respect to effectiveness, findings show declining SUA over follow-up with over two-thirds of patients achieving target at the end of follow-up.

Disclosure of Interest: None declared

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THU0443   **HYPERURICEMIA IS ASSOCIATED WITH INCREASED CORONARY ARTERY CALCIFICATION IN MEN BUT NOT WOMEN**

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Background: Hyperuricemia is closely associated to cardiovascular disease although it has not been definitively established whether it is a marker or a causative agent. Serum uric acid (sUa) is strongly linked to the metabolic syndrome, hypertension (HT), dyslipidemia (DL) and higher BMI and higher levels are seen in men compared to women. Coronary artery calcification (CAC) is associated with future risk of atherosclerotic CV events in addition to these traditional cardiovascular risk factors (CVRF). CACs are present in atherosclerotic arteries and can be quantified and scored non-invasively by computed tomography. The Swedish CArdioPulmonarybioImage Study (SCAPIS) extensively characterizes a Swedish cohort of 30 000 men and women aged between 50 and 64 years. A comprehensive pilot study in 1111 individuals was completed in 2012. In this pilot study we have examined the relation between CACs and sUa

Objectives: Examine the association bewteen sUa and CAC in men and women seperately.

Methods: In the SCAPIS pilot study we identified 1106 (552 males) individuals who were screened for traditional CVDRFs, such as HT, DL, diabetes mellitus (DM), smoking, physical activity (PA), educational level (EDU), BMI, high sensitive CRP (hsCRP). CACs, reflecting calcification of coronary arteries, was determined according to Agatston[1]. We measured sUa and related quartiles to CACs with multiple logistic regression analyses adjusting for traditional CVDRFs. CAC was defined positive if ≥ 1.

Table 1. Baseline characteristics of the study population divided by sex

Variables	Male, n=552	Female, n=556
Age, years, mean, (SD)	57.8 (4.5)	57.6 (4.3)
BMI, mean, (SD)	27.7 (4.0)	26.9 (3.7)
hsCRP, (mean, SD)	2.3 (3.3)	2.4 (3.7)
CAC positive, (%)	305 (55%)	142 (26%)
Smoking status, never	226 (41%)	249 (45%)
Smoking status, previous	242 (44%)	222 (40%)
Smoking status, active	82 (15%)	81 (15%)
Hypertension (%)	178 (32%)	190 (34%)
Diabetetes mellitus (%)	45 (8%)	23 (4%)
Dyslipidemia (%)	160 (29%)	128 (23%)

Table 2. Quartiles of sUa and age as predictors for presence of CAC (>0 CACs score) in male and female in multivariate logistic regression analyses adjusted for age, smoking, BMI, DM, DL, HT, hsCRP, EDU and PA

sUa, μmol/L,	Male		sUa, μmol/L,	Female	
	Odds ratio, multivariate*, (CI)	p-value		Odds ratio, multivariate*, (CI)	p-value
31–305, Ref			143–229, Ref		
306–350	2.1 (1.2–3.7)	0.01	230–262	0.9 (0.5–1.7)	0.7
351–404	1.8 (1–3.3)	0.04	263–305	1 (0.5–2)	0.9
405–665	2 (1–3.8)	0.04	306–702	1.2 (0.6–2.3)	0.6
Age 50–55, Ref					
Age 56–60	2.2 (1.4–3.6)	0.001		3.6 (2–6.5)	<0.0001
Age 61–66	3.8 (2.2–6.3)	<0.0001		4.3 (2.4–7.9)	<0.0001

Results: Age, BMI, smoking status, hsCRP, HT and DL showed no differences between sex while presence of CAC and diabetes was twice as common in men (Table 1). The three upper quartiles of sUa, (>306 μmol/L), all significantly (p<0.05) predicted presence of CACs in men even adjusting for HT, DL, DM, smoking, PA, EDU, BMI, hsCRP and age in multivariate logistic regression, but not in women (Table 2).

Conclusions: Higher levels of sUa is associated with presence of CACs in men but not in women. This may merely reflect the earlier onset of atherosclerosis in men or possibly suggest biological differences in the effect of sUa on calcification of coronary arteries between sexes.

References:

[1] Agatston AS et al Quantification of coronary artery calcium using ultrafast computed tomography J Am Coll Cardiol 1990.

Disclosure of Interest: None declared

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THU0444   **INTEGRATED SAFETY OF LESINURAD, A NOVEL URIC ACID REABSORPTION INHIBITOR FOR THE TREATMENT OF GOUT**

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Background: Lesinurad is a selective uric acid reabsorption inhibitor recently approved at 200 mg daily in combination with a xanthine oxidase inhibitor (XOI) for treatment of hyperuricemia associated with gout in patients who have not achieved target serum uric acid on an XOI (allopurinol or febuxostat) alone.

Objectives: To investigate the safety profile of lesinurad (LESU), we integrated safety data based on: (1) 3 large, pivotal, placebo-controlled, 12-month phase III (core) trials evaluating LESU 200 mg and LESU 400 mg in combination with an XOI; and (2) 2 extension studies, in which LESU-treated patients continued to receive LESU + XOI at the same dose and initially placebo-treated patients were randomized to receive LESU 200 mg or LESU 400 mg in addition to the XOI provided in the preceding core trial.

Methods: Safety data were pooled from the 3 core studies and 2 12-month extension studies using descriptive statistics for patients receiving ≥ 1 dose of study medication. To adjust for varying treatment durations, treatment-emergent adverse events (TEAEs) are expressed as exposure-adjusted incidence rates (number of subjects with events per 100 person-years [PY]).

Results: In the core studies, adverse event rates were comparable for XOI alone and LESU 200 mg + XOI groups for any TEAEs, serious TEAEs, and TEAEs leading to discontinuation (Table 1). Adverse event rates were higher with LESU 400 mg + XOI. Major adverse cardiovascular event (MACE) rates, which included cardiovascular death, myocardial infarction, or stroke, in the core studies were 0.71 (95% CI 0.15, 2.08), 0.96 (0.26, 2.47), and 1.94 (0.84, 3.82) per 100 PY for XOI

Table 1. Pooled Analysis of Exposure-Adjusted Adverse Event Incidence Rates in 3 Pivotal Placebo-Controlled 12-Month Phase III Studies Evaluating Lesinurad 200 mg and 400 mg in Combination with Xanthine Oxidase Inhibitors

Adverse Event Category [n (rate)]	XOI alone (N=516) (PY=408.5)	LESU 200 mg + XOI (N=511) (PY=396.3)	LESU 400 mg + XOI (N=510) (PY=390.5)
Any TEAE	363 (88.9)	386 (97.4)	407 (104.2)
Any TEAE with RCTC toxicity Grade 3 or 4	48 (11.8)	52 (13.1)	67 (17.2)
Any TEAE possibly related to randomized study medication	80 (19.6)	98 (24.7)	118 (30.2)
Any TEAE possibly related to XOI	52 (12.7)	49 (12.4)	66 (16.9)
Any TEAE possibly related to prophylaxis	52 (12.7)	56 (14.1)	61 (15.6)
Any serious TEAE	29 (7.1)	24 (6.1)	44 (11.3)
Any fatal TEAE	0 (0)	2 (0.5)	3 (0.8)
Any TEAE leading to randomized study medication discontinuation	28 (6.9)	32 (8.1)	48 (12.3)

Table 2. Pooled Analysis of Exposure-Adjusted Adverse Event Incidence Rates in 3 Pivotal Placebo-Controlled 12-Month Phase III Studies + 2 Extension Studies Evaluating Lesinurad 200 mg and 400 mg in Combination with Xanthine Oxidase Inhibitors

Adverse Event Category [n (rate)]	LESU 200 mg + XOI (N=666) (PY=926.5)	LESU 400 mg + XOI (N=666) (PY=917.9)
Any TEAE	531 (57.3)	552 (60.1)
Any TEAE with RCTC toxicity Grade 3 or 4	93 (10.0)	115 (12.5)
Any TEAE possibly related to randomized study medication	158 (17.1)	187 (20.4)
Any TEAE possibly related to XOI	77 (8.3)	101 (11.0)
Any TEAE possibly related to prophylaxis	76 (8.2)	81 (8.8)
Any serious TEAE	63 (6.8)	84 (9.2)
Any fatal TEAE	7 (0.8)	7 (0.8)
Any TEAE leading to randomized study medication discontinuation	68 (7.3)	86 (9.4)

LESU, lesinurad; PY, patient years; RCTC, Rheumatology Common Toxicity Criteria; TEAE, treatment-emergent adverse event; XOI, xanthine oxidase inhibitor. Exposure-adjusted incidence rates are expressed as subjects with events per 100 person-years.