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FRI0245 PREDICTORS FOR CLINICALLY DIAGNOSED GOUT – 30 YEARS FOLLOW-UP IN THE MALMÖ PREVENTIVE PROJECT COHORT, SWEDEN

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Background: Gout is the most common form of inflammatory arthritis worldwide. Hyperuricemia is a crucial risk factor. The relative importance of other risk factors is slightly more controversial.

Objectives: Our aim was to identify predictors for clinical gout cohort from a population survey, the Malmö Preventive Project (MPP) – a large-scale screening and case finding program in Malmö, Sweden.

Methods: A total of 33 346 individuals (67% men, mean age 46 years, mean follow-up 28 years) were screened 1974–1992. The survey included: A *Questionnaire* (alcohol consumption, smoking); A *Physical Examination and Laboratory tests*. The Malmö modification of Michigan alcoholism screenings test (Mm-MAST) was used to identify alcohol risk consumption (Mm-MAST score ≥ 2). Subjects were followed to date of first gout diagnosis, death, migration from area, or December 2014. All gout diagnoses given at visits to physicians in primary or specialised care were identified by linking MPP cohort to regional Skåne Healthcare Register and to National Patient Register. Possible risk factors/markers at baseline associated with incident gout were analysed using Cox-regression models.

Results: In total, 1275 individuals (3.8%); 1014 men (4.5%) and 261 women (2.4%) were diagnosed with gout. In both sexes, baseline s-UA >405 (age-adjusted) was the strongest factor associated with incident gout. Higher age, higher BMI, higher s-triglycerides, hypertension and smoking were also associated with gout in both sexes. Mm-MAST score ≥ 2 was associated with gout only in men while higher ESR was associated with gout only in women (table 1).

Conclusions: In this large cohort of middle-age individuals, hyperuricemia, higher age, hypertriglyceridemia and higher BMI were associated with incident gout in both sexes. Alcohol risk consumption predicted gout only in men. Higher ESR, as a possible marker of chronic inflammation, was a significant predictor only in women.

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FRI0246 INVESTIGATING THE EFFECT OF SERUM URATE LEVELS ON GOUT FLARE RATES IN A LARGE-SCALE U.S. ADMINISTRATIVE CLAIMS DATABASE

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Background: Reducing patients' serum urate (sUA) levels has long been the focus of gout treatments. Current evidence suggests that sUA levels ≥ 6.0 mg/dL significantly increase a subject's risk of an acute gout attack or "flare."

Objectives: To investigate the effects of sUA levels on gout flare rates (GFLR) over a 5 year period in a large-scale US commercial claims database.

Methods: Truven MarketScan administrative claims data from 2010 to 2015 were used for this analysis. The study population was patients with gout whose index gout diagnosis was defined as first gout diagnosis. Index sUA date (IsD) was defined as the sUA result closest to, but not preceding, a subject's index gout diagnosis. Patients were included if they had continuous health plan enrollment during the year prior to and after their IsD. Patients without an sUA result after their index gout diagnosis were excluded. Three sUA comparison groups were created based on mean sUA values calculated from sUA measurements at IsD through follow-up. Person-time was defined as time between IsD to the end of continuous enrollment or to the end of the study period, whichever came first. Gout flares were determined via a published algorithm Halpern 2009 combining health care visits and prescriptions by using ICD9/10, HCPCS, and NDC codes. Subjects' annual GFLR were calculated as their number of flares per person-time. Mean GFLR were calculated for each sUA comparison group. A generalised linear model was developed to investigate the effect of sUA levels on GFLR after adjusting for demographics and regions.

Results: 15 140 subjects were included in the analysis. Most subjects were male (78%) and from the south (47%) with a mean age of 52 years. Mean sUA was 6.9 mg/dL (min=1.4, max=17.5) where 58% of patients had sUA between 6.0 and 9.0 mg/dL. Subjects were followed for 2.1 years on average. sUA ≥ 6.0 and <9.0 mg/dL (Group 2), and sUA ≥ 9.0 mg/dL (Group 3) were both associated with increased gout flare rates compared to sUA <6.0 mg/dL (Group 1). Group 3 had 1.540 times of the annual flare rate of Group 1. Male sex and increasing age were associated with increased GFLR. North central, south, and west US regions were all positively associated with GFLR in relation to the northeast (table 1).

Abstract FRI0245 – Table 1

MEN (n=22433) where 1014 had incident gout	Baseline variables	s-UA >405 μ mol/L (yes,%)	Mean (SD)	Frequency (yes,%) 10.1%	HR (95% CI)* (age adjusted) 5.4 (4.8–6.2)	HR (95% CI) (multivariate analysis**) 4.1 (3.4–4.9)
	Age (years)		43.7 (6.6)		1.4 (1.3–1.5)	1.4 (1.2–1.5)
	Body mass index (kg/m ²)		24.7 (3.3)		1.4 (1.4–1.5)	1.3 (1.2–1.4)
	e-GFR (ml/min)		79.1 (10.5)		0.9 (0.8–0.9)	0.9 (0.8–1.0)
	s-triglycerides (mmol/L)		1.5 (1.1)		1.1 (1.1–1.2)	1.1 (1.0–1.1)
	ESR mm/hour		5.9 (5.7)		1.0 (0.9–1.1)	1.0 (0.9–1.1)
	Hypertension (yes,%)			16.4%	1.7 (1.5–2.0)	1.3 (1.1–1.5)
	CVD at baseline (yes/no)			2.1%	1.7 (1.1–2.8)	1.4 (0.9–2.3)
	Smoking (yes/no)			49.2%	1.1 (1.0–1.3)	1.3 (1.1–1.6)
Mm-MAST ≥ 2 (yes,%)			30.8%	1.5 (1.3–1.7)	1.3 (1.1–1.5)	
WOMEN (n=10902) in where 261 had incident gout		s-UA >405 μ mol/L (yes,%)		1.5%	12.5 (8.6–18.1)	5.9 (2.2–15.9)
	Age (years)		49.7 (7.4)		1.7 (1.5–2.1)	1.3 (1.1–1.6)
	BMI (kg/m ²)		24.4 (4.2)		1.6 (1.5–1.8)	1.6 (1.6–2.0)
	eGFR (ml/min)		75.6 (10.9)		0.8 (0.7–0.9)	0.8 (0.6–1.0)
	s-triglycerides (mmol/L)		1.1 (0.6)		1.3 (1.2–1.4)	1.2 (1.0–1.5)
	ESR (mm/hour)		9.6 (7.7)		1.3 (1.2–1.4)	1.2 (1.0–1.5)
	Hypertension (yes,%)			22%	2.0 (1.6–2.0)	1.1 (0.6–1.9)
	CVD at baseline (yes,%)			3.4%	2.1 (1.3–3.6)	3.0 (0.7–12.3)
	Smoking (yes,%)			34.9%	1.2 (0.9–1.5)	1.7 (1.0–2.8)
	Mm-MAST ≥ 2 (yes,%)			2.8%	1.3 (0.6–2.6)	1.2 (0.6–2.4)

*HR is calculated per 1 SD or for dichotomous covariates (yes vs. no)