Table 1. Characteristics of the 71 subjects included in analyses

	Diagnosis**	
	gout (n=63)	no gout (n=8)
Age in years, mean (SD)	62 (14)	59 (14)
Male gender, N (%)	53 (84)	5 (63)
Symptom duration* at baseline in months, median (IQR)	12 (1-48)	8 (0.5-33)
Joint involvement at baseline N patients (%):		
MTP,	33 (52)	1 (12)
ankle/midfoot	12 (19)	1 (12)
other joint	18 (29)	6 (76)
SUA intercritical in $\mu\text{mol/l}$, mean (SD)	484 (63)	337 (71)
2015 ACR/EULAR criteria baseline score, mean (SD)***	10.3 (2.5)	2.6 (1.5)
2015 ACR/EULAR criteria ≥ 8 points, N patients (%)***	57 (90)	0 (0)
MSU crystal positive joint aspiration, N patients (%)	44 (70)	0 (0)
DECT positive, N patients (%)	49 (78)	0 (0)

* self-reported, intermittent symptoms; ** all patients classified with gout at baseline also had a clinical gout diagnosis after one year; *** using a somewhat limited set, see methods
MTP, metatarsophalangeal joints; SUA, serum uric acid; DECT, dual-energy CT; MSU, monosodium urate.

Sensitivity, specificity, positive and negative predictive value, and accuracy values (95% CI) of the classification criteria set we used were 0.91 (0.80-0.96); 1 (0.63-1); 1; 0.57 (0.38-0.74) and 0.92 (0.83-0.97), respectively. The area under the receiver operating characteristics curve (95% CI) was 0.95 (0.91-0.99).

ULT was started in 49/63 (78%) of gout patients; 45/49 (92%) of them had serum uric acid levels $\leq 360 \mu\text{mol/l}$ and no recurrent gout attack during one-year follow-up.

Conclusion: The 2015 ACR-EULAR gout classification criteria performed well for the diagnosis gout in clinical practice. Most gout patients had been treated successfully, according to current guidelines.

References:

[1] Gamala M, Jacobs JWG, Linn-Rasker SF, Nix M, Heggelman BGF, Pasker-de Jong PCM, et al. The performance of dual-energy CT in the classification criteria of gout: a prospective study in subjects with unclassified arthritis. *Rheumatology* 2019 Sep (Epub ahead print).

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AB0927 HIGHER ULTRASOUND BURDEN WITH MONOSODIUM URATE CRYSTALS IN THE JOINTS IS CONNECTED TO MORE PRONOUNCED ARTERIOSCLEROTIC VASCULAR ALTERATIONS

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Background: The severity of gout and the presence of subcutaneous tophi increase the risk of cardiovascular death. In patients (pts) in the spectrum of gout and in subjects who have inflammatory arthritis with accompanying asymptomatic hyperuricemia, data whether ultrasound (US) burden with monosodium urate (MSU) crystals in the joints is associated with higher cardiovascular risk are contradictory.

Objectives: To establish the relationship between US MSU crystal deposits in the joints with diastolic heart function and carotid arteries alterations in gout pts, individuals with asymptomatic hyperuricemia and no sign of inflammatory arthritis and psoriatic arthritis pts with asymptomatic hyperuricemia.

Methods: The study is cross-sectional. A total of 121 consecutive pts were included, divided into 85 pts with gout - 63 males and 22 females aged 57.7 ± 14.1 years, 27 subjects with asymptomatic hyperuricemia and no sign of inflammatory arthritis - 13 males and 14 females aged 53.4 ± 17.2 years, and 9 psoriatic arthritis individuals with asymptomatic hyperuricemia - 2 males and 7 females aged 61.2 ± 14.4 years. Pts underwent two-dimensional echocardiography, US examination of the common carotid arteries and US of the joints of the hands, elbows, knees, ankles and feet. The echocardiography was conducted with 2.5 MHz transducer phased array working with pulse Doppler frequency of 2.5 MHz. Parameters of the transmitral blood flow were measured: the ratio between maximal early and late flow velocities (E/A ratio) and deceleration time (DT). With tissue Doppler imaging, early diastolic mitral annular velocity (e') was obtained. We judged for left ventricular filling pressure by determining E/ e' ratio. Using US of the common carotid arteries done with 10 MHz linear transducer working

with pulse Doppler frequency of 5 MHz were measured: intima-media thickness (IMT), common carotid artery resistive index (CCARI) and the presence of atherosclerotic plaques was recorded. US of the joints was performed with a high-frequency, linear transducer, 4-15 MHz. The existence of double contour sign, intra-tendinous MSU aggregates, snow storm, tophi, tophi with erosions, or a combination of these US features was assessed. Data were analyzed by Chi-Square, Mann-Whitney, Kruskal Wallis, t-test and ANOVA.

Results: In the three groups there was no difference in the mean values of E/A ratio ($p=0.591$), DT ($p=0.498$), e' ($p=0.662$), E/ e' ratio ($p=0.754$), IMT ($p=0.260$), CCARI ($p=0.089$) and in the frequency of heterogeneous or homogeneous carotid arteries plaques ($p=0.595$). Among pts with and without evidence of MSU crystals in the joints the means of E/A ratio ($p=0.452$), DT ($p=0.367$), e' ($p=0.218$), E/ e' ratio ($p=0.230$), IMT ($p=0.165$), CCARI ($p=0.097$) and the frequency of heterogeneous or homogeneous plaques ($p=0.830$) were comparable. The distribution of MSU crystal deposits in two or more joints was the highest in gout pts (56.5%) compared to pts with asymptomatic hyperuricemia (11.1%) and individuals with psoriatic arthritis (22.2%), ($p<0.001$). Pts with MSU crystal deposits in two or more joints compared to those with crystal deposits in one joint and pts without MSU crystals had the highest CCARI (mean $\pm$ SD: 0.72 ± 0.05 vs 0.69 ± 0.07 vs 0.68 ± 0.07 , $p=0.019$), the longest DT (mean $\pm$ SD: 236 ± 50.99 msec vs 208.09 ± 34.30 msec vs 216 ± 55.43 msec, $p=0.026$) and had a tendency of lowest e' (mean $\pm$ SD: 10.33 ± 3.96 cm/s vs 12.03 ± 3.83 cm/s vs 11.99 ± 3.98 cm/s, $p=0.077$), but the values of E/A ratio ($p=0.119$), E/ e' ratio ($p=0.107$), IMT ($p=0.151$) and the distribution of atherosclerotic plaques ($p=0.920$) were equal.

Conclusion: Pts with higher US MSU burden have more pronounced left ventricular diastolic dysfunction and greater vascular stiffness. The changes in their vessels are mainly of the arteriosclerotic type.

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AB0928

DISORDERS OF FATTY ACID METABOLISM IN THE FORMATION OF ARTERIAL HYPERTENSION IN PATIENTS WITH GOUT

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Background: One of the possible mechanisms of the formation of cardiovascular disorders in patients with gout may be a violation of the metabolism of fatty acids. Decrease of the total content of unsaturated fatty acids (UFAs) has a multifaceted adverse effect on a number of metabolic processes which lead to the development of arterial hypertension (AH) and atherosclerosis as a result. There are no studies on the level of UFAs in the blood of patients with gout depending on the presence of hypertension.

Objectives: To study the level of UFAs in the blood of patients with gout depending on the presence of AH.

Methods: We examined 87 patients with gout and AH. 83% were men (mean age 55.4 ± 12.3 years). All patients had chronic gouty arthritis, 30% of patients had tofus. The duration of gout was 8 [4; 11] years. AH was detected in 49 (56.2%) people. The duration of AH was 7 [2; 10] years. All patients went through standard general clinical, laboratory and instrumental examination. Ozonation method was developed and put into practice in N.N. Semenov Federal Research Center for Chemical Physics, Russian Academy of Science (FRCCP RAS), to assess disorders of the lipid metabolism for diagnostic purposes. The essence of the method is to determine the level of unsaturation of serum or blood plasma lipids which depends on the total amount of double bonds (DB) in UFAs both in a free state and within lipid combination. This parameter is called the Double Bond Index (DBI). DBI is measured by a domestic device ADS-5M («Double bond analyzer») developed at FRCCP RAS. The control group consisted of 20 healthy men, comparable in age. Statistical analysis of the data was carried out using the STATISTICA 10.0 program.

Results: Patients were divided into 2 groups: patients with gout with normal blood pressure (group 1; $n = 38$) and with AH (group 2; $n = 49$). Patients from group 2 differed by a longer course of gout and had a higher level of uric acid in comparison with patients from group 1. The number of joints involved in the inflammatory process in patients from group 2 exceeded the number of those in patients from group 1. Patients from group 2 had more often attacks of gouty arthritis and the severity of pain during the last year compared with group 1. The normative value of the blood serum lipids DBI was determined for the control group of healthy people (260 ± 20 conventional units (c.u.)) by the ozonation method. A significant deviation of the DBI from the norm both increased and decreased is a sign of pathology. In all groups DBI is lower than the norm but to a different extent. DBI is slightly reduced relative to the norm ($DB = 229$ c.u.) in group 1 therefore lipid metabolism is impaired just slightly. $DB = 167$ c.u. in group 2 which indicates a significant disorder of lipid metabolism ($p<0.05$). Thus the ozonation method is informative and allows