Methods: The prospective study included 109 women aged 38-75 y.o., of I-III Kellgren J. - Lawrence J. stage of knee OA (ACR), who signed an informed consent. The average age was 59.3 ± 8.7 y.o. (from 38 to 74), the average duration of the OA was 7 (4-12) years. The average values of the body mass index (BMI) corresponded to obesity (30.9 ± 5.4 kg / m^2), waist circumference (WC) – 94.4 ± 11.7 cm. An individual card was filled in for each patient, including anthropometric parameters, anamnesis and clinical examination data, assessment of knee joint pain according to VAS, WOMAC, KOOS and DN4 indices, and concomitant diseases. All patients underwent standard X-ray of the knee joints, laboratory examination.

Results: AH was diagnosed in 69.7 % patients with OA. Patients were divided into 2 groups, according to the presence or absence of AH (Table 1). Patients with AH were older, had a higher BMI, WC, a longer duration of menopause and significantly earlier its onset (p<0.05). Patients with OA and AH had a more severe course of OA: higher values of pain in VAS, total WOMAC and all its components, DN4, worse indicators of total KOOS (p<0.05). X-ray examination showed a tendency to a more significant narrowing of the medial space of the knee joints (p = 0.07). Laboratory examination showed higher values of CRP, ESR, IL-6, and leptin (p < 0.05).

Table 1. Comparative characteristics of OA patients with and without AH

Parameters	Patients with AH (n=76)	Patients without AH (n=33)	p
Age, y.o.	61 (57-68)	55.5 (49-58)	<0.01
WC, cm	92 (90-105)	86.5 (84-90)	<0.01
Age of menopause, y.o.	50 (47-52)	55.5 (49-58)	0.02
Duration of menopause, years	14 (7.5-19)	7 (4-8)	<0.01
Duration of OA, years	10 (5-15)	4 (1-6)	0.001
VAS pain score, mm	49 (40-57)	42 (24-50)	0.02
WOMAC pain, mm	189.5 (140-250)	140 (108-162)	0.001
WOMAC stiffness, mm	77.5 (42-100)	56 (33.5-71.5)	0.01
WOMAC functional impairment (FI), mm	651 (547-902)	546.5 (320-663.5)	0.002
Total WOMAC, mm	899 (728-1280)	734 (526.5-882)	0.001
KOOS, points	0.47 (0.36-0.57)	0.6 (0.53-0.75)	<0.01
DN4, points	2 (1-3)	1 (0-2)	0.01
Overall health status, mm	45 (35-55)	36.5 (28.5-48.5)	0.02
The size of the medial space of joint according to X-ray, mm	2.45 (1.35-4.35)	3.6 (2.8-4.3)	0.07
CRP, mg/l	2.38 (1.47-4.85)	1.21 (0.69-2.53)	<0.01
Leptin, ng/ml	37.4 (26.5-53.3)	23.6 (15.1-40.2)	0.01
IL-6, pg/ml	0.7 (0.4-1.2)	0.45 (0.3-0.7)	0.03
ESR, mm/h	14 (7-18)	7 (6-12)	0.02

We founded positive (p <0.05) associations between AH and a more severe, prolonged course of OA (r=-0.39, p<0.01) in the the Spearman rank-order correlation coefficient analysis. Thus, patients with AH had higher values of VAS pain (r=0.31, p<0.01), total WOMAC (r=0.31, p<0.01) and all its components (pain (r=0.33, p<0.01), FI (r=0.3, p<0.01) and stiffness (r=0.24, p<0.01), DN4 (r=0.24, p=0.01), worse indicators of total KOOS (r=-0.42, p<0.01) and overall health status (r=0.23, p=0.02), more often detected more advanced stage of OA (r=0.24, p=0.03) and synovitis (r=0.23, p=0.01). In addition, positive relationships were found with CRP (r=0.31, p<0.01), IL - 6 (r=0.3, p=0.03), ESR (r=0.3, p=0.02). Positive relationships were confirmed between AH and age (r=0.39, p<0.01), menopause duration (r=0.39, p<0.01), WC (r=0.37, p<0.01), leptin (r=0.35, p=0.01), the presence of hypertriglyceridemia (r=0.35, p=0.01) and cardiovascular risks according to SCORE (r=0.26, p=0.02), considering traditional risk factors for cardiovascular diseases (CVD).

Conclusion: Thus, we found that AH in patients with knee OA is affected by a variety of variables, both related to traditional CVD factors and to OA itself, and the correlations found are approximately equal in strength. The results obtained require further study, and it is possible that preventive measures aimed at reducing the traditional risk factors of diseases of the circulatory system, or correcting existing CVD, will contribute to a more favorable course of OA.

Disclosure of Interests: None declared

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POS0131 10-YEAR PROBABILITY OF A MAJOR OSTEOPOROTIC FRACTURES IN WOMEN WITH OSTEOARTHRITIS OF THE KNEE JOINT

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Background: The relationship between osteoporosis and osteoarthritis (OA) is complex and contradictory. Some studies suggest a protective effect of OA in osteoporosis [1-2]. However, other studies show that increased bone mineral density (BMD) in OA not only does not reduce the risk of fractures, but can also increase it [3-4].

Objectives: To assess the 10-year probability of osteoporotic fractures using the FRAX calculator in women with OA of the knee joint.

Methods: The study included 22 women (average age 63.7±1.01 years) diagnosed with ACP of the knee joint according to the ACR criteria (1991). The Control Group included 24 conditionally healthy women without OA knee joint, with an average age of 63.6±1.37 years.

The BMD (g/cm2) and the T-criterion (standard deviation, SD) of the neck of the femur and lumbar spine (LI-LIV) were evaluated by the method of two-power X-ray absorption (DXA) (apparatus «Lunar Prodigy Primo», USA). 10-year probability of major osteoporotic fractures (clinically significant fracture of the spine, distal fracture of the forearm, fracture of the proximal femur, or fracture of the shoulder) and fracture of the proximal thigh with the FRAX calculator (version 3.5 for Russian population).

Results: An osteopenic syndrome in the cohort under investigation was found in 42 (91.3%) patients, of whom osteopenia in 24 (52.2%) women and osteoporosis in 18 (39.1%). A normal BMD is registered in 4 (8.7%) patients.

In the group of patients with knee joint OA, only 2 (9.1%) of women had a normal BMD, 11 (50.0%) of osteoporosis, and 9 (40.9%). Osteopenic syndrome is generally found in 20 (90,9%) patients.

In the control group, osteopenic syndrome has been diagnosed in 22 (91,7%) of whom: osteopenia in 13 (54.2%), osteoporosis in 9 (37.5%) patients. Two (8.3%) women had a normal BMD. There were no statistically significant differences in the structure of the osteopenic syndrome among the studied groups (p=0.961).

An analysis of the 10-year probability of major osteoporotic fractures found that women with OA knee joint had the above probability of 12.3±0.91, and in the control group 14.2±1.06 (p=0.085).

The 10-year probability of fracture of the proximal femur in women with OA was statistically less significant than in the control group: 1.55 (0.70;1.98) and 2.10 (1.20;2.95), (p=0.031), respectively.

Conclusion: The total incidence of the osteopenic syndrome in the cohort under investigation was 91.3% (90.9% in women with OA, 91.7% in the control group). The frequency of registration of osteopenia and osteoporosis in women with OA did not differ statistically significantly from the control group. The probability of major osteoporotic fractures within 10 years was comparable in these groups. The probability of a proximal femur fracture in women with OA was statistically significant, but not clinically significant, compared to the control group.

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Crystal arthritis

POS0132 IS THE INTERCRITICAL GOUT REALLY ASYMPTOMATIC? THE INFLAMMATORY ROLE OF THE SILENT URATE CRYSTAL DEPOSITION

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Background: Gout is the most prevalent inflammatory arthritis. Gout is chronic inflammatory deposition disease related to an increase of cardiovascular (CV) events and mortality. Subclinical chronic inflammation has been demonstrated in this patients but not its relation with the monosodium urate (MSU) crystal deposit size and the number of CV risk factors.

Objectives: To study the subclinical inflammation in intercritical gout patients and its possible relation to the estimated size of the crystal deposition and the number of CV risk factors.
Methods: To analyze subclinical inflammation we performed a secretome analysis and a cytokine and adiponektine plasma levels quantification (IL-1β, IL-18, IL-6, sIL-6R, TNFα, CXCL-5, RANTES, leptin, resistin and adiponectin) in a cohort of gout patients. As nowadays it is not feasible to determinate the whole body deposit of MSU crystals we created three different MSU crystal deposit size patient groups using an indirect clinical and analytical classification to estimate it. Then we compared cytokine levels between healthy donors and gout patients. We also compared cytokine levels between the different crystal size deposition groups and studied its association to the number of CV risk factors.
Results: Ninety consecutive patients attending a Crystal Arthritis Unit were studied. Mean age was 68.27 (28-101) years. 81.1% were male. Clinical gout evolution was of 10.1±9.8 years. 77.5% were on urate lowering treatment. 24% had tophaceous gout. Mean uric acid was 6.3±2.1 mg/dl with 47.1% of them being on target. Hypertension was present in 68.9%, diabetes mellitus in 18.9%, dislipemia in 48.9%, BMI>30 in 32.9%, abdominal obesity in 50% and 16.1% suffered from ischemic heart disease. From the 102 molecules studied in the secretome analysis in 56 there was at least a 20% difference between donors group and any of the deposition groups. In 74% of them gout patients secreted lower levels. IL-18, sIL-6R, RANTES, leptin and adiponectin were higher in patients than in healthy donors. IL-18, sIL6-R, RANTES and CXCL5 levels were associated to the size of the crystal deposits. IL-18, sIL-6R, RANTES and leptin were higher in gout groups with CV risk factors. IL-18, sIL6-R, RANTES and leptin were higher in gout patients with no risk factors when compared to healthy donors with no risk factors. We found no differences when comparing urate lowering treated and non-treated patients.
Conclusion: Our results demonstrate that some proinflammatory cytokines and metabolic proteins are raised in intercritical gout patients. Some of them are different from the flare/inflammasome expected ones. In some cytokines this elevation is related to the size of the monosodium urate crystal deposit and/or to the number of cardiovascular risk factors. This cytokine changes could help to explain the increase of the cardiovascular events in gout patients.
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POS0133 MONOSODIUM URATE CRYSTALS REDUCE HUMAN LIGAMENT CELLS VIABILITY THROUGH INCREASE OF ROS PRODUCTION

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Background: Ligament destruction is a frequent complication of gout and is strongly associated with tophi. Ligament fibroblasts are important cellular mediators of ligament remodeling. None of study has paid attention to the effects of monosodium urate (MSU) crystals on ligament fibroblasts.
Objectives: The study aims to investigate the effects and mechanism of MSU crystals on ligament fibroblasts.
Methods: MSU crystals were added to human ligament fibroblasts(HLFs) cultures or primary ligament cells cultures. Cell counting kit-8 (CCK-8) assay, cell migration assay, Annexin V-FITC/PI assay were conducted. Reactive Oxygen Species(ROS) was tested by ROS Assay Kit.
Results: The higher concentrations of MSU crystals (0.5-1mg/mL) reduced the viability of HLFs or primary ligament cells after 24 h as assessed by CCK8 assays, with a further reduction in viability observed at the 48 h time point. When observed under light microscopy, HLFs cultured with MSU crystals (0.5mg/mL) appeared unhealthy with fewer cells present. The cell migration ability of HLFs was decreased significantly on MSU crystals (0.5mg/mL). According to the result of Annexin V-FITC/PI assay, the survival rate of HLFs on MSU crystals (0.5mg/mL) was lower than that of 0.25mg/ml and 0 mg/ml at 72h. ROS assay results showed that the production of ROS increased as the concentrations of MSU crystals increased.
Conclusion: MSU crystals inhibit human ligament cells viability through the increase of ROS production. It may contribute to disordered ligament remodeling in gout patients with ligament destruction.
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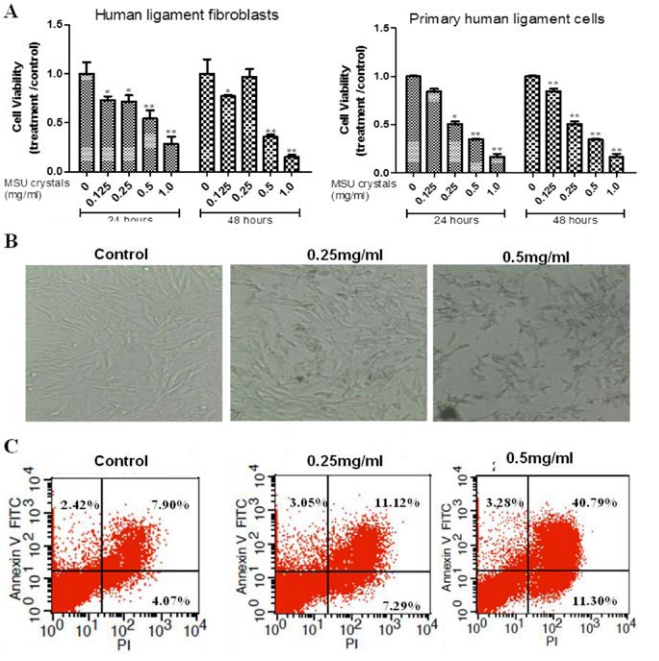

Figure 1. MSU crystals reduce human ligament fibroblasts and primary human ligament cells viability over time. A: CCK-8 assay; B: Observation of HLFs morphology; C: Annexin V-FITC/PI assay.

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POS0134 INCREASED PREVALENCE OF LUMBAR SPINE MONOSODIUM URATE DEPOSITION AMONG GOUT PATIENTS ON DUAL-ENERGY CT

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Background: Gout affecting the spine is reported as a rare event presenting with neuropathy, spinal compression and acute back pain (1). Cases are often diagnosed by tissue confirmation of monosodium urate (MSU) deposition. The frequency of gout involving the spine asymptomatically or with milder, non-specific symptoms is likely higher than reported.
Objectives: Using dual-energy CT (DECT), we are determining prevalence/extent of MSU deposition in the lumbosacral spines of patients with gout and tophaceous gout, compared to non-gout controls.