Background: Articular involvement in acute gout attack is extremely common and mainly characterized by arthritis, which are usually transient, severe, reversible and well responsive to treatment. The involvement of tendons and entheses in lower extremity in monosodium urate-related disease through US (ultrasound) assessment have been described ^{1,2}. US findings in gout raising the hypothesis that enthesal involvement could be a missing target in the clinical evaluation of gout patients.

Objectives: To evaluate by ultrasound (US) the frequency and characteristics of lower extremity enthesal involvement in acute gout attack patients.

Methods: US assessment were performed by independent rheumatologist on 31 patients with acute gout attack. Presence of lower extremity enthesal involvement were evaluated by grey-scale (GS) and power Doppler (PD). US assessment contain quadriceps, patellar and Achilles tendons, and plantar fascia entheses according to the OMERACT definitions.

Results: US revealed one or more abnormalities in at least one enthesis in 22 out of 31 gout patients (71.0%) and 47 out of 310 entheses (15.2%). Among the affected entheses, the patellar insertion of quadriceps tendon was most commonly involved (57.4%) during acute gout attack, followed by the calcaneal insertion of the Achilles tendon (17.0%) and distal insertion of the patellar tendon (14.9%). The proximal insertion of the patellar tendon and calcaneal insertion of the plantar fascia were involved in 8.5% and 2.1%, respectively. Bone erosions and osteophytes were found in affected entheses (10.6% and 25.5%, respectively).

Conclusion: Our study identifies that lower extremity enthesal involvement is a missing target in the evaluation of patients with acute gout attack. US plays a key role in the assessment of both clinical and subclinical enthesitis in gout patients.

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AB0920

APPLICATION OF THE EULAR 2016 GUIDELINES FOR URATE-LOWERING THERAPY IN CLINICAL PRACTICE (DATA OF A SIX-MONTH PROSPECTIVE STUDY)

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Background: The EULAR 2016 guidelines on gout management provide for a consecutive regimen of urate-lowering medications; however, the possibility of reaching the target uric acid level when using the regimen has not been studied in clinical practice.

Objectives: To assess the possibility of reaching the target uric acid level when following the EULAR 2016 guidelines on gout management with use of different xanthine oxidase inhibitors available in Russia.

Methods: This monocentric prospective study included 83 gout patients (79 (95%) male and 4 (5%) female patients) with the mean age of 51.3±10.9 years old. The inclusion criterion was indications for urate-lowering therapy in accordance with the EULAR 2016 guidelines. The exclusion criteria were the following: absolute contraindications to all of the study drugs, GFR <30ml/min/1.73m², and NYHA class III-IV heart failure.

At urate-lowering therapy initiation, the patients were prescribed allopurinol with the starting dose of 100mg/day; the dose was titrated until the target uric acid level was reached (maximum up to 900mg/day), and in the patients with GFR between 30 and 60ml/min/1.73m² – up to 300mg/day. In case of insufficient efficacy of allopurinol (unachieved target uric acid level of <360μmol/L, for the patients with severe gout of <300μmol/L) or development of adverse reactions, allopurinol was replaced with febuxostat with the starting dose of 80mg/day and dose titration up to 120mg/day if necessary. The laboratory tests included serum creatinine level, uric acid level, AST, ALT, creatine phosphokinase, glucose; clinical blood test. The following parameters were assessed: possibility of reaching the target uric acid level when following the suggested regimen, and frequency of development of adverse reactions when using allopurinol and febuxostat.

Results: 37 (45%) patients had the target uric acid level of <360μmol/L and 46 (55%) pts – of <300μmol/L. The recommended therapy regimen allowed 77 (93%) patients under study to reach their target uric acid level.

The target uric acid level was achieved by 44 (53%) out of 79 patients on allopurinol, of whom 36 (82%) received 100-600mg/day, and 8 (18%) – 700-900mg/day. Of the patients with GFR of >60ml/min/1.73m², 32 (73%) patients achieved their target uric acid level and of those with GFR <60ml/min/1.73m² – so did 12 (27%). Then the patients on allopurinol with unachieved target uric acid level were prescribed febuxostat (in 30 (77%) cases because of inefficacy of the allopurinol

therapy, in 9 (33%) patients because of their development of adverse reactions where 5 pts had a more than doubled level of transaminase (ALT, AST), 2 pts had skin itch and 2 pts had hives).

In total, 39 patients received febuxostat, of whom 4 pts were with initial intolerance for allopurinol in past history, and 35 pts after therapy with maximum dose of allopurinol. A febuxostat dose of 80mg/day was associated with achievement of the target uric acid level in 14 (42%) patients and that of 120mg/day – in 19 (58%) patients, therefore, total 33 (85%) patients reached their target uric acid level. Four patients on febuxostat developed adverse reactions: 3 patients had a more than doubled serum transaminase level (ALT, AST) and 1 patient had hives. Also, an insignificant increase in the mean GFR was registered from 73±21.4ml/min/1.73m² to 78.4±22.5ml/min/1.73m² which did not differ between the two drugs.

Conclusion: The recommended regimen of xanthine oxidase inhibitors in their maximal doses secures reaching the target uric acid level in 93% patients. In 47% patients, allopurinol in maximal doses (up to 900mg/day) does not significantly increase the possibility of reaching the target uric acid level, even though it demonstrates high tolerance.

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AB0921

COMPARISON OF EFFICACY AND SAFETY OF DIFFERENT ANTI-INFLAMMATORY DRUGS AT INITIATION OF URATE-LOWERING THERAPY IN PATIENTS WITH GOUT (PRELIMINARY DATA)

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Background: NSAIDs, colchicine and glucocorticoids are used for prevention of acute arthritis in gout patients, yet there is little data on their comparative efficacy.

Objectives: Comparison of efficacy and safety of different anti-inflammatory drugs used for prevention of acute arthritis at initiation of urate-lowering therapy in gout patients.

Methods: This monocentric prospective study included 79 gout patients (75 (94.9%) male and 4 (5.1%) female patients) with the mean age of 51.3±10.9 years old. The inclusion criteria were the following: established gout (ACR/ EULAR 2015 criteria), aged 18-80, serum uric acid level >360μmol/L, absence of urate-lowering therapy at baseline and at least one gout flare within past three months. The exclusion criteria were: absolute contraindications to all of the study drugs, GFR <30ml/min/1.73m².

All of the patients were prescribed urate-lowering therapy (allopurinol or febuxostat), the dose was titrated until the target serum uric-acid level (<360μmol/L) was achieved. Simultaneously, preventive anti-inflammatory therapy was initiated and the drug for each patient was chosen individually: colchicine 0.5mg/day or any NSAID in minimal anti-inflammatory dose or prednisolone 7.5mg/day. The analysis of the data included 3-month comparative evaluation of the efficacy of the preventive therapy against the following parameters: frequency of gout flare and duration thereof, VAS pain intensity of flare. The laboratory tests included serum creatinine level, uric acid level, AST, ALT, creatine phosphokinase, glucose; clinical blood test before, two weeks and three months after the initiation of the therapy.

Results: NSAIDs were received by 14 (17.7%) patients, colchicine by 56 (70.9%) and glucocorticoids by 9 (11.4%) patients. There were no differences initially in age, GFR or lab test values.

Three months later, the gout flares frequency median lowered to 1 [0;2] flare (p<0.01). The frequency of gout flares did not depend on the chosen drug and was 1 [0;1] for NSAIDs, 1 [0;2] for colchicine and 1 [1;2] for glucocorticoids.

40 (50.6%) patients out of 79 did not have a single flare. The patients who received NSAIDs (57.1%) and colchicine (42.9%) experienced no gout flares more often than those who received glucocorticoids (37.5%), but the differences were not significant.

However, the VAS pain intensity of gout flares in the patients who received NSAIDs (30.7±12.9mm) was lower than in those who received colchicine (42.1±12.3mm) and glucocorticoids (42.2±8.4mm) (p<0.05 for both).

The duration of gout flares on different drugs was not significantly different and was on average 3 [1.5;4] days for the patients on NSAIDs, 5 [3;7] days for those on colchicine and 5 [4;6] days for the patients who received glucocorticoids.

The NSAID therapy was discontinued in two cases, in which the serum transaminase levels (AST, ALT) more than doubled; the colchicine therapy - because of development of diarrhea in two patients and of myopathy in one.

Conclusion: Efficacy and tolerance to a three-month course of preventive therapy with NSAIDs and glucocorticoids in gout patients are comparable to that with colchicine. In case of development of gouty arthritis, preventive use

of NSAIDs is characterized by lower pain intensity than as against colchicine or glucocorticoids.

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AB0922

BUROSUMAB (ANTI-FGF23 MONOCLONAL ANTIBODY) IN THE TREATMENT OF A PATIENT WITH RECURRENT TUMOR INDUCED OSTEOMALACIA.

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Background: Tumor-induced Osteomalacia (TIO) is a rare paraneoplastic syndrome caused by tumoral overproduction of fibroblast growth factor 23 (FGF23), resulting in hyperphosphaturia, hypophosphatemia and osteomalacia. Surgery is the only curative treatment, but tumor can locally recur, even after years from primary surgery. Furthermore, some tumors cannot be removed by surgery due to their location.

Objectives: To describe a case of a 53-year-old woman affected by recurrent TIO after three surgical attempts of removal treated with Burosumab.

Methods: We describe the case of a 53 years old woman with TIO treated with Burosumab, an anti-FGF-23 monoclonal antibody at present approved for X-linked hypophosphatemic rickets only.

Results: A 46-year-old Caucasian female was referred to our Bone Unit after experiencing several fractures in different sites. She reported being in good health until three years prior consultation. At the time of symptoms onset, she experienced a progressive muscle pain, enabling her to stand for a long period. During imaging evaluation for atraumatic fracture of right great trochanter, the MRI abdomen and ¹⁸FDG-PET-CT showed a metabolic pre-sacral lesion. She unsuccessfully underwent to an exploratory laparotomy of that lesion. Then, she suffered from atraumatic intertrochanteric fracture of right femur, surgically treated, and after 3 months, she had an insufficiency dyaphyseal fracture of the left femur, surgically treated. Furthermore, she experienced several ribs fractures. At the time of first evaluation, lab works showed: serum-Phosphate (PS) 1.2mg/dL (reference range (RR) 2.5-4.5 mg/dL), urinary-phosphate of 24h (PU) 842mg/24h, alkaline phosphatase (ALP) 565 UI (RR<300), 1,25(OH)₂ vitamin D₃ 27 ng/L (RR 25-86.5), PTH 24 (RR<75 pg/mL), intact-FGF-23 117 (RR 25-45 pg/mL), normal serum and 24h-urinary Calcium. Patient underwent to ⁶⁸Ga-DOTATATE-PET-CT that showed a pre-sacral lesion, who was studied with MRI and CT before surgery. In 2013 patient underwent surgical excision of the pre-sacral region. After 18 months of well-being, patient complained worsening of articular pain and muscle weakness, and further ribs fractures. Another ⁶⁸Ga-DOTATATE-PET-CT reported a relapse of the previous pre-sacral lesion (32x12x47mm) with an increase of FGF-23 levels (54.6 pg/mL). Even the subsequent surgery was not able to remove the tumor. Since 2015, patient was maintained in phosphorus supplements and 1,25(OH)₂ vitamin D₃, but PS levels never normalized. We asked for compassionate use of Burosumab and, after ethical committee approval, in September 2019 she was started on Burosumab, at a dose of 30 mg per month (0.3mg/kg). At baseline, she had PS 1.2mg/dL, PU 1874mg/24h, TRP 25.96%. After two months, she improved in pain symptom (VAS reduction from 65 to 12mm), which allow her to walk and stand without crutches. She did not normalize her PS levels (1.3mg/dL), while PU reduced to 1000mg/24h. We titrated Burosumab dose at 40 mg per month (0.6mg/kg) and patient is still under therapy, waiting for next blood works.

Conclusion: This is the first European patient affected by TIO treated with Burosumab. Burosumab could be a promising therapy in the medical treatment of TIO refractory or not eligible for definitive surgery. Further data are needed to standardize the proper dose regimen.

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AB0923

DIETARY FACTORS AND TOPHI: A FOOD INTAKE FREQUENCY SURVEY IN CHINESE GOUT PATIENTS

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Background: Tophi is a cardinal sign of advanced gout. Risk factors of gout are also closely related to the formation of tophi, such as impaired kidney function and serum uric acid (sUA). Several dietary factors, such as alcohol, fructose-containing beverage, red meat, sea foods have been confirmed increasing the risk of gout. Diet patterns vary widely in different countries. Dietary factors' association with tophi formation remain elusive in Chinese gout patients.

Objectives: This study aimed to study whether dietary factors were risk factors for tophi.

Methods: We recruited consecutive gout patients who fulfilled the 2015 Gout Classification Criteria of ACR/EULAR and collected demographic data, gout disease characteristics and comorbidities. Tophi was evaluated by physical examination and/or musculoskeletal ultrasound. All gout patients completed 10-items food intake frequency questionnaire which included red meat, animal offal, seafood, alcohol, fructose-containing beverages, milk and dairy products, coffee, hotpot, slow-cooking soup and tea. Patients were advised to report the average frequency of food consumption in the preceding year of first gout attack. Multivariate logistic regression analysis was performed to evaluate risk factors of tophi. Dependent variables were those met p values less than 0.1 on univariate analysis.

Results: a) There were 682 gout patients recruited with 94% male, mean age 44±16 years, and median gout duration 4 (2,7) years. The mean sUA was 9.0±2.3mg/dL. Tophi presented in 166 (24.3%) patients with 31 (4.5%) patients diagnosed by ultrasound. In patients with gout duration <3 years, 3-4.9 years, 5-9.9 years and ≥10 years, the prevalence of tophi were 6.7%, 19.4%, 38.8%, and 49.6%, respectively. b) Tophus patients were characterized by older age (48±16 vs. 42±15 years), longer gout duration [7(4, 10) vs. 3(1, 5) years], more ever involved joints [11(4, 24) vs. 3(2, 5)] and more flare times in the last year [11(4, 24) vs. 3(2, 6)]. For comorbidities, tophus patients presented higher prevalence of urolithiasis (36% vs. 23%), hypertension (54% vs. 40%), and diabetes (20% vs. 11%) but less hypertriglyceridemia (19% vs. 32%, all P<0.05). c) Compared with patients without tophi, tophus gout patients consumed more red meat (>300g/d: 12% vs. 6%), seafood (>2 times/w: 18% vs. 13%), hotpot (≥1 time/w: 17% vs. 10%) and alcohol (>84g/d: 23% vs. 9%). d) Dependent variables of multivariate logistic regression analysis included age, gender, gout duration, diuretics, BMI, sUA, serum creatinine, urine pH, hypertriglyceridemia, hypertension, diabetes, coronary heart disease, urolithiasis, alcohol consumption, hotpot, red meat, and seafoods. Gout duration, sUA, serum creatinine and urine pH were positively correlated with tophi, while hypertriglyceridemia was negatively associated with tophi. For dietary factors, heavy alcohol consumption (> 84g/ day vs. < 1g/ day OR=2.624, 95%CI: 1.437-4.793) and hotpot (≥ 1 time/w vs. < 1 time/w, OR=2.164, 95%CI: 1.217-3.847) were positively correlated with tophi.

Conclusion: Our data suggest tophi should not be ignored in gout patients with short duration. Heavy alcohol consumption and hotpot are associated with the formation of tophi.

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AB0924

CALCIFIC TENDONITIS OF THE ROTATOR CUFF: PERIOSTIN ENRICHMENT IS ASSOCIATED WITH A BETTER RESPONSE TO ULTRASOUND-GUIDED PERCUTANEOUS LAVAGE.

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Background: Calcific tendonitis of the rotator cuff is a frequent cause of chronic shoulder pain. It is due to apatite deposits within the tendons. Little data are currently available about proteins associated to crystals within deposits.

Objectives: The aim of the study was to quantify 6 proteins in calcific powders obtained from patients who have undergone an ultrasound-guided percutaneous lavage (UGPL) of their calcification and to look for correlations between their concentration and patient characteristics.

Methods: Calcific powders were obtained from patients included in the CALCECHO trial whose main objective was to compare post-procedure pain between two groups: methylprednisolone or placebo injected at the end of the lavage [1]. Based on preliminary proteomic data and literature data, the following proteins have been selected and quantified by ELISA: Pigment-epithelium Derived Factor (PEDF), Osteopontin (OPN), Periostin (POSTN), Activin A (ACT A), Osteoprotegerin (OPG) and Bone Morphogenic Protein-2 (BMP-2). The level of each protein was expressed in µg per pg of the total proteins present in the sample. These proteins have been selected for their link to the mineralization. Correlations between the level of each protein and radiographic and ultrasound appearance of the calcific deposits were sought. We also looked for correlations between level of each protein and duration of pain or response to UGPL (Mann-Whitney test).