responses to synovial crystals are more pronounced in elderly patients or not is unknown.

Objectives: To test the hypothesis whether aging associates with a more pronounced synovial inflammation in response to urate and CPP crystals.

Methods: Gout or CPPD patients with a synovial fluid (SF) aspiration were included. Clinical, blood and synovial parameters were recorded. In the Cytokine study, SF was analyzed for interleukin (IL)-1-beta, IL-6, IL-8, IL-10, IL-12p70, interferon-gamma (IFN-gamma), tumor necrosis factor-alpha (TNF-alpha), IL-17, and transforming growth factor-beta (TGF-beta) by multiplexed cytokine analysis.

In the Cell study, SF samples were immunophenotyped by flow cytometry, including surface markers CD4+ (CD3+), CD8+ (CD3+), and following stimulation for intracellular IFN-gamma and IL-17. The patients were divided into two groups by age median-split.

Statistical analysis

Categorical variables were reported as frequencies. Continuous variables were compared using Student's t-test or in case of non-normal distribution Mann-Whitney U test.

Table 1. Patients Characteristics

Medians, (IQR), Frequencies in %	Cytokine study (n=15)	Cell study (n=19)
Age [years]	76.6 (69.5; 83.0)	59.0 (54.5; 76.0)
Age Median Split	75	65
Male	80.0%	68%
Gout; CPPD patients [n pat]	10; 5	10; 9
crystals*		
Oligo-/Polyarticular [n pat]	7	8

IQR=Interquartile ranges, CPPD=Calcium pyrophosphate deposition disease, n pat=number of patients

Cytokine study

Median C-reactive (CRP), SUA levels and synovial cell counts were higher in the older patient group. Serum creatinine levels were similar between the two groups. Synovial IL-1-beta, IL-8, and IL-17 levels were significantly higher in the older subjects. Age was correlated with SF IL-1-beta ($r=0.62$, $p=0.02$), IL-17 ($r=0.63$, $p=0.04$) and IL-8 ($r=0.54$, $p=0.04$) levels.

Cell study:

Median CRP was higher in older patients: 87 mg/l (IQR 65; 115) vs. 20 mg/l (IQR 7; 65, $p=0.0129$). Although not significant, a higher frequency of total Th17 (both CD4+IL17+ and CD8+IL17+) T-cells were seen in the SF of the older patient group. The remaining T-cell subsets were comparable between the two groups.

Conclusion: Gout and CPPD are paradigms for auto-inflammatory diseases. We here show an important autoinflammation enhancing cofactor: age. Inflammation measured as serum CRP, SF-IL-8, SF-IL-1-beta, and SF-IL-17 was pronounced in the older patients. Moreover, the adaptive immune system with a predominant Th-17 immune response was more prominent in the older patient group. High IL-17 concentrations may promote differentiation of T-cells in Th-17 cells and thus perpetuate inflammation in older patients with crystal arthritis (4).

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AB0918

FACTORS ASSOCIATED WITH ACHIEVEMENT OF TARGET SERUM URIC ACID IN PATIENTS WITH NON-TOPHACEOUS GOUT ATTENDING PRIMARY CARE CLINICS.

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Background: Gout is characterised by deposition of monosodium urate crystal in the synovial fluid of joint and other tissues, in the presence of elevated serum uric acid (SUA). Dose-escalation strategy with allopurinol as first-line urate lowering

therapy (ULT) was shown to be cost effective and a target SUA of less than 360µmol/L was recommended in non-tophaceous gout.¹ Some of the barriers to treatment effectiveness were related to physician and patient-related factors.^{2,3}

Objectives: To investigate the factors associated with achievement of target SUA in patients with non-tophaceous gout attending primary care clinics.

Methods: A cross-sectional study was conducted over four months on patients with gout attending 21 primary care clinics in Selangor, an urbanised state in Malaysia. The demographic and clinical data, including the most recent SUA within six months of study participation, were obtained from patients' interview and medical records. Obesity was defined as body mass index (BMI) of >27.5kg/m². Data was analysed for patients with non-tophaceous gout. Comparison between patients who achieved and did not achieve target SUA, defined as <360µmol/L, was performed using chi-square and student t-test for categorical and continuous data, respectively.

Results: Four hundred and twenty-six patients with gout participated in this study and 343 (80.5%) patients had non-tophaceous gout. Their mean age was 57.7 (±12.9) years. Majority were men (280 patients), Malay (260 patients) and had at least a secondary education (223 patients). There were high prevalence of cardiovascular co-morbidities; hypertension in 279 (81.3%), dyslipidaemia in 235 (68.5%), diabetes mellitus in 154 (44.9%) and obesity in 167 of 265 (63%). There were 280 patients diagnosed with gout for more than six months and 201 (71.8%) had recent SUA; 44 (21.9%) achieved target SUA and 157 (78.1%) did not achieve target SUA. The factors found to be significantly different between the two groups were age, ethnicity, education level, BMI and SUA level before ULT initiation. (Table 1) The mean allopurinol dose were similar between patients who achieved and did not achieve target SUA (191.3±80.8mg vs 197.1±72.5mg, $p=0.56$) despite significant difference in the mean SUA (301.5±70.3µmol/L vs 488.3±93.1µmol/L, $p<0.01$).

Table 1. Comparison between patients who achieved and did not achieve target SUA level.

Factors	Target SUA achieved, mean (±SD)	Target SUA not achieved, mean (±SD)	p-value
Age, years	63.9 (8.9)	58.1 (12.5)	<0.01
Gender*			0.92
• Male	35 (21.7)	126 (78.3)	
• Female	9 (22.5)	31 (77.5)	
Ethnic*			0.03
• Malay	30 (19.1)	127 (80.9)	
• Others	14 (35)	26 (65)	
Education*, n=181			0.14
• Primary	17 (35.4)	31 (64.6)	
• Secondary and beyond	24 (18.0)	109 (82.0)	
Disease duration, years	94.5 (99.9)	96.39 (94.8)	0.91
BMI, kg/m ²	28.3 (4.3)	31.1 (7.8)	<0.01
SUA before ULT, µmol/L	553.2 (109.2)	603.2 (98.5)	0.03
Recent SUA, µmol/L	301.5 (70.3)	488.3 (93.1)	<0.01
Allopurinol dose, mg	191.3 (80.8)	197.1 (72.5)	0.67

*no of patients

Conclusion: There was a low percentage of patients who achieved target SUA in primary care clinics. Older age, ethnicity other than Malay, lower BMI and lower SUA level before ULT initiation were significantly associated with achievement of target SUA. Higher education was significantly associated with failure to achieve target SUA and in these patients, allopurinol was not titrated according to SUA level.

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AB0919

WHAT IS LOWER EXTREMITY ENTHESEAL INVOLVEMENT IN ACUTE GOUT ATTACK? AN ULTRASOUND-STUDY

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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