knee was the most frequent (21.38%), followed by DC in right knee (17.24%) and DC in 1st MTP (10.24%).

Conclusion: Almost 100% of patients with recently diagnosed gout without ULT, presented on at least one of the scanned locations MSUS images suggestive by MSU crystals deposition. Most of MSU crystals deposits were on knees and 1st MTP. Patients with non-treated longer than 6 months of disease duration gout had a greater number of MSU crystals deposit locations detected by MSUS. The presence of tophi and HA was statistically higher in patients with disease duration longer than 6 months (table 2).

Table 2. MSU crystals median locations and MSUS images in both groups

	<6months (n,%)	>6months (n,%)	p value
Deposits locations	56 (43,07)	74 (56,92)	0,075 ¹
MSUS images with deposits -Tophi	8 (28,57) 0 (0-0)	20 (71,43) 0 (0-1)	0,018 ¹
Median, IR () - HA Median, IR () -	7 (21,21) 0 (0-0) 39	26 (78,79) 0 (0-1)	0,023 ¹
DC Median, IR ()	(46,43) 0,5 (0-1)	45 (53,57) 0 (0-2)	0,853 ¹

¹Mann-Whitney U test comparing medians between both groups IR: interquartile range

References:

- [1] Norkuviene E, Petraitis M, Apanaviciene I, Virviciute D and Baranauskaitė A. An optimal ultrasonographic diagnostic test for early gout: A prospective controlled study. *J Int Med Res.* 2017 Aug.
- [2] Neogi T, Jansen TLA A, Dalbeth N, Fransen J, Schumacher HR, Berendsen D et al. 2015 Gout Classification Criteria. *An American College of Rheumatology/European League Against Rheumatism Collaborative Initiative. Arthritis & Rheumatology.* Vol. 67, No. 10, October 2015.

Disclosure of Interests: : Luis A Torrens Cid: None declared, Juan Molina Colada: None declared, Christian Y Soletto: None declared, Liz R. Caballero Motta: None declared, Ana Melissa Anzola Alfaro: None declared, Alfonso Ariza: None declared, Isabel Castrejón Fernández: None declared, Javier Rivera: None declared, Jose-Maria Alvaro-Gracia Grant/research support from: Abbvie, Eli-Lilly, MSD, Novartis, Pfizer, Consultant of: Abbvie, BMS, Janssen-Cilag, Eli-Lilly, MSD, Novartis, Pfizer, Sanofi, Tigenix, Roche, UCB, Paid instructor for: Eli-Lilly, Pfizer, Roche, Speakers bureau: Abbvie, BMS, Janssen-Cilag, Eli-Lilly, Gedeon Richter, MSD, Novartis, Pfizer, Sanofi, Tigenix, Roche, UCB, Juan Carlos Nieto Speakers bureau: Pfizer, Abbvie, MSD, Novartis, Janssen, Lilly, Nordic Pharma, BMS, Gebro, FAES Farma, Roche, Sanofi

DOI: 10.1136/annrheumdis-2020-eular.4098

THU0446

SUCCESSFUL TREATMENT OF GOUT IS FREQUENT IN CLINICAL PRACTICE WHEN APPLYING A TREAT-TO-TARGET STRATEGY: RESULTS FROM THE NOR-GOUT STUDY

T. Uhlig¹, L. F. Karoliussen¹, T. K. Kvien¹, E. A. Haavardsholm¹, H. Berner Hammer¹. ¹Diakonhjemmet Hospital, Rheumatology, Oslo, Norway

Background: International EULAR and ACR recommendations support lifestyle changes, diet and urate lowering therapy (ULT) in gout. Treat-to-target ULT is often not performed, resulting in insufficient treatment of gout. We studied how many patients achieved the recommended treatment target of <360 µmol/l for serum urate (SUA) when a treat-to-target approach was applied in clinical practice, and which factors predicted reaching this target.

Objectives: We studied how many patients achieved the recommended treatment target of <360 µmol/l for serum urate (SUA) when a treat-to-target approach was applied in clinical practice, and which factors predicted reaching this target.

Methods: 211 patients with crystal proven gout were included into the prospective, observational NOR-Gout study if they recently had a gout flare as well as insufficiently treated serum urate SUA >360 µmol/l).

The intervention consisted of individual verbal information on lifestyle, including factors related to physical activity, diet and the importance of drug adherence. ULT (mainly allopurinol) was initiated and escalated monthly according to EULAR recommendations. Patients were during the first year seen by physician and nurse every three months with additional visits after month 1 and month 2, with further visits monthly as necessary until the treatment target of SUA <360 µmol/l (or <300 if tophi) was met.

Baseline age was 53.6 (SD 12.2) years, disease duration 7.8 years (SD 7.6), BMI 28.8 (SD 4.5) kg/m², 95.3% were males. Baseline SUA was 500 (77) µmol/l and 16.6% had subcutaneous tophi. Assessments included questions on frequency of alcohol use, and application of the self-efficacy scales for symptoms (SES, range 10-100) as well as the beliefs in medicines questionnaire (BMQ), which included a scale for general overuse of medicines (range 4-16).

186/211 (88.2%) patients completed the visit for the primary SUA endpoint at 12 months.

Results: SUA continuously declined over 12 months and the frequency of responders increased (table 1):

Table 1. Responders and SUA levels during the treat-to-target intervention

Month	Month 0	1	2	3	6	9	12	
% n Responders	0	21.3	43/202	48.7	69.3	86.7	81.9	85.5
SUA<360	0/211		94/193	131/189	151/187	136/166	159/186	
SUA µmol/l (mean, SD)	500 (78)	413 (77)	371 (64)	341 (61)	327 (59)	316 (56)	311 (49)	

At 12 months 87.6% (163/186) of patients used allopurinol and 13.4% (23/186) febuxostat with mean daily doses of 289 mg (range 100-900) and 59 (20-120) mg, respectively.

Reaching the treatment target of SUA after 12 months was bivariate related to work status, alcohol use, and beliefs in general overuse of medicines. In multivariable analyses in the final model also adjusted for baseline SUA, several variables predicted reaching the SUA target of <360 µmol/l: age (per 10 years) (OR 1.5; 95% CI 1.06 – 1.96, p=0.026), alcohol use no more than monthly vs. at least weekly (OR 6.9, 95% CI 1.90 – 25.2, p=0.003), self-efficacy for symptoms (per 10 units) (OR 1.31; 95% CI 1.00 – 1.63; p=0.05), and low belief that medicines are generally overused (per decreasing unit) (OR 1.30; 1.04 – 1.62, p=0.019).

Conclusion: Most patients (85.5%) with recent gout flare und increased SUA reached the target SUA after 12 months. A good treatment result was predicted by increasing age,

less frequent alcohol use, when patients believed they could cope with symptoms and when they did not believe that drugs are generally overused.

Disclosure of Interests: : Till Uhlig Consultant of: Lilly, Pfizer, Speakers bureau: Grünenthal, Novartis, Lars Fridtjof Karoliussen: None declared, Tore K. Kvien Grant/research support from: Received grants from Abbvie, Hospira/Pfizer, MSD and Roche (not relevant for this abstract), Consultant of: Have received personal fees from Abbvie, Biogen, BMS, Celltrion, Eli Lilly, Hospira/Pfizer, MSD, Novartis, Orion Pharma, Roche, Sandoz, UCB, Sanofi and Mylan (not relevant for this abstract), Paid instructor for: Have received personal fees from Abbvie, Biogen, BMS, Celltrion, Eli Lilly, Hospira/Pfizer, MSD, Novartis, Orion Pharma, Roche, Sandoz, UCB, Sanofi and Mylan (not relevant for this abstract), Speakers bureau: Have received personal fees from Abbvie, Biogen, BMS, Celltrion, Eli Lilly, Hospira/Pfizer, MSD, Novartis, Orion Pharma, Roche, Sandoz, UCB, Sanofi and Mylan (not relevant for this abstract), Espen A Haavardsholm Grant/research support from: AbbVie, UCB Pharma, Pfizer Inc, MSD Norway, Roche Norway, Consultant of: Pfizer, AbbVie, Janssen-Cilag, Gilead, UCB Pharma, Celgene, Lilly, Paid instructor for: UCB Pharma, Speakers bureau: Pfizer, AbbVie, UCB Pharma, Celgene, Lilly, Roche, MSD, Hilde Berner Hammer: None declared

DOI: 10.1136/annrheumdis-2020-eular.5571

THU0447

HOME-MONITORING GOUT FLARES WITH A SMARTPHONE APP – RESULTS OF A FEASIBILITY STUDY

B. Pouls^{1,2}, C. Bekker², B. Van den Bemt^{1,2}, A. Gaffo³, M. Flendrie¹. ¹Sint Maartenskliniek, Ubbergen, Netherlands; ²Radboud University Medical Center, Nijmegen, Netherlands; ³University of Alabama Medical Centre, Tuscaloosa, United States of America

Background: Gout flares are considered a key clinical and research outcome in gout. Early treatment of gout flares increases patient well-being and warrants timely notification of the treating clinician.

Objectives: To test the feasibility of a smartphone app to home-monitor gout flares real-time for both patients with a suspicion of and established gout.

Methods: Thirty patients were recruited during their visit at the outpatient rheumatology clinic. Inclusion criteria were age ≥ 18 years, smartphone possession, established gout (crystal proven) or a clinical suspicion of gout and at least one flare reported in the last three months.

A straight-forward query app was used to incorporate an adapted version of the 2017 four-criteria gout flare definition.[1] For 90 consecutive days the app asked patients to report their current pain score on an 11-points scale as screening question. Scoring pain below 4 terminated the query, otherwise the app posed the remaining criteria: does the patient experience warm and/or swollen joints and are symptoms regarded as a gout flare. Responses were transmitted in real-time to the dashboard and the clinician was alerted via email if predefined conditions were met. End of study evaluation consisted of the number of generated alerts, duration of (possible) flares and actions taken. Patient feasibility was assessed by measuring app attrition and using a questionnaire based on the Technology Acceptance Model. [2] All constructs were analysed using descriptive statistics.

Results: All 30 recruited patients finished the trial. Three minor, resolvable technical issues were reported. Seventeen participants never missed a question. In total 110 responses (4.1%) were missed with three participants responsible for

66 missings. 90% of the participants rated app usability good to excellent and 70% would recommend the app to other patients.

Twelve out of thirty patients generated a total amount of 174 alerts where four patients with a suspicion of gout were responsible for 148 alerts (85%). These patients scored three out of four criteria as they had warm, swollen and painful joints but, after consultation with the clinician, their symptoms were not regarded as a gout flare.

The 174 alerts belonged to 23 (possible) flares with a median duration of 5 days [IQR 3.5 – 7.5]. Twenty-one pro-active telephone calls were made which resulted in four visits to the clinic within 48 hours. Clinical guidance over the phone consisted of checking in on patient's symptoms, giving advice and ten medication adjustments.

Conclusion: This prospective study shows feasibility of a smartphone app for home-monitoring gout flares for patients because of high usability scores and low attrition rates. The app has added value for gout care because it enables clinicians to act on flares as they occur. The next step is to further implement the app whilst perpetuating investigation into the added value for patients and clinical practice alike.

References:

- [1] Gaffo AL, Dalbeth N, Saag KG, et al. Brief Report: Validation of a Definition of Flare in Patients With Established Gout. *Arthritis Rheumatol*. 2018;70(3):462-467.
- [2] Davis Jr. FD. A Technology Acceptance Model for empirically testing new end-user information systems: theory and results. MIT PhD thesis. 1985
- [3] Stoyanov SR, Hides L, Kavanagh DJ, Wilson H. Development and Validation of the User Version of the Mobile Application Rating Scale (uMARS). *JMIR Mhealth Uhealth*. 2016;4(2):e72.

Acknowledgements: This study was funded by AbbVie and Menarini.

Disclosure of Interests: : Bart Pouls: None declared, Charlotte Bekker: None declared, Bart van den Bemt Grant/research support from: UCB, Pfizer and Abbvie, Consultant of: Delivered consultancy work for UCB, Novartis and Pfizer, Speakers bureau: Pfizer, AbbVie, UCB, Biogen and Sandoz., Angelo Gaffo Grant/research support from: Received a research grant from AMGEN, Marcel Flendrie Grant/research support from: M. Flendrie has received grants from Menarini and Grunenthal., Consultant of: M. Flendrie has received consultancy fees from Menarini and Grunenthal.

DOI: 10.1136/annrheumdis-2020-eular.3643

THU0448

NO DIFFERENCE IN GOUT FLARES AFTER INITIATION OF URATE LOWERING THERAPY BETWEEN ONCE OR TWICE DAILY 0.5 MG COLCHICINE PROPHYLAXIS

F. Veenstra¹, L. M. Verhoef¹, L. Nieboer¹, A. Den Broeder^{1,2}, W. Y. Kwok³, I. Meek², F. Van den Hoogen^{1,2}, N. Van Herwaarden^{1,2}, M. Flendrie¹. ¹Sint Maartenskliniek, Ubbergen, Netherlands; ²Radboud University Medical Center, Nijmegen, Netherlands; ³Rijnstate, Arnhem, Netherlands

Background: Initiation of urate lowering therapy (ULT) is associated with an increase in gout flares¹. Therefore, guidelines advice prophylactic therapy during the first six months of ULT². Colchicine 0.5-1 mg/day is recommended. Whether 1 mg/day colchicine is superior to 0.5 mg/day is unknown.

Objectives: To examine the difference in gout flares in the first six months after initiation of ULT between 0.5 and 1.0 mg/day colchicine prophylaxis.

Methods: Patients with clinical diagnosis of gout, a first outpatient visit between January 2010 and March 2018 and a follow-up of at least 6 months were included in a retrospective cohort study, conducted in two rheumatology centres in the Netherlands. Within this cohort, patients starting ULT and colchicine prophylaxis were selected. Difference in gout flare incidence density (ID) in the first six months after start of ULT between colchicine 0.5 and 1.0 mg/day was analysed using Poisson regression, corrected for confounders. Secondary analyses included the proportion of patients reaching a target of serum urate acid (SUA) of < 0.36 mmol/l within the first six months.

Results: Of 2108 gout patients, 379 patients started ULT and used colchicine prophylaxis (table 1). ID of flares was 2.8 and 2.6 per patient year on colchicine 1.0 and 0.5 mg/day respectively, resulting in an incidence rate ratio of 1.05 (95% CI 0.86 – 1.27). Within the first six months 68% in the colchicine 1mg/day and 63% in the colchicine 0.5 mg/day reached their target (difference 5%, 95% CI -0.08 – 0.18).

Table 1. Baseline patient, disease and treatment characteristics

	Colchicine prophylaxis	
	0.5 mg/day (n=275)	1 mg/day (n=104)
Men, no. (%)	226 (82%)	88 (85%)
Age, years	67.3 (58.8-76.3)	65.3* (54.4-71.9)
BMI, kg/m ²	29.0 (26.1-32.1)	29.5 (27.9-31.6)
Comorbidity no. (%)		
Hypertension	146 (53%)	54 (52%)
Diabetes Mellitus	66 (24%)	24 (23%)
Hypercholesterolemia	43 (16%)	15 (14%)
Renal insufficiency	56 (20%)	18 (17%)
Crystal-confirmed diagnosis, no. (%)	197 (72%)	77 (74%)
Serum urate acid at start ULT (mmol/l), mean ± SD	0.51 ± 0.11	0.50 ± 0.11
ULT medication, no. (%)		
Allopurinol	272 (99%)	103 (99%)
Benzbromaron	2 (0.6%)	
Febuxostat	1 (0.4%)	1 (1%)

*Compared to colchicine 0.5 mg/day, P<0.05.

**No SD possible, n = 1.

Conclusion: Use of 1 mg/day colchicine is not superior to 0.5 mg/day as prophylaxis for ULT induced gout flares. For generalisability it should be noted that flare rates were not very high, probably due to the background ULT being characterised by a "start low, go slow" approach. In this context colchicine 0.5 mg/day is sufficient as prophylaxis.

References:

- [1] Seth R et al. *J Rheumatol* 2014;92:42-47.

- [2] Richette P et al. *Ann Rheum Dis* 2017;76:29-42.

Disclosure of Interests: : Frouwke Veenstra: None declared, L.M. Verhoef: None declared, Lieke Nieboer: None declared, Alfons den Broeder: None declared, Wing-Yee Kwok: None declared, Inger Meek: None declared, Frank van den Hoogen: None declared, Noortje van Herwaarden: None declared, Marcel Flendrie Grant/research support from: M. Flendrie has received grants from Menarini and Grunenthal., Consultant of: M. Flendrie has received consultancy fees from Menarini and Grunenthal.

DOI: 10.1136/annrheumdis-2020-eular.3635

THU0450

OPTIMISTIC STATUS ASSOCIATES WITH COMPLIANCE TO URATE-LOWERING THERAPY IN GOUT PATIENTS

W. Zhao^{1,2}, Z. Huang¹, Y. Huang¹, Y. Liu^{1,2}, X. Liu^{1,3}, Z. Zhong^{1,3}, S. Chen^{1,3}, T. Li¹. ¹Guangdong Second Provincial General Hospital, Department of Rheumatology and Immunology, Guangzhou, China; ²University of South China, Hengyang, China; ³Southern Medical University, The Second School of Clinical Medicine, Guangzhou, China

Background: Compliance to urate-lowering therapy (ULT) is poor in gout patients, which contributes to increased frequency of acute gout attacks, deposition of tophi and urate nephropathy [1]. Optimistic status is probably a potential and considerable factor affecting compliance to ULT in gout patients.

Objectives: To compare optimistic status between gout patients and healthy controls, and also between gout patients with good and poor compliance. Relationship between optimistic status and compliance to ULT, sUA target achievement of gout patients were assessed as well.

Methods: This was a monocentric and observational study which was performed from August 2018 to December 2019. Adult patients who met the 2015 gout classification criteria were included in this study. The healthy controls were individuals who were free of gout, hyperuricemia and other rheumatic diseases from the physical examination center of our hospital. Demographic data, including age, gender and education were collected from all individuals. Serum uric acid (sUA) were collected from gout patients at enrollment and again after 3 months. Disease duration of gout, visual analogue scale (VAS) of pain were also assessed for gout patients at enrollment. Compliance to ULT was measured using the medication possession ratio (MPR) in the following 3 months. Poor compliance was defined as MPR<0.8 and good compliance was defined as MPR≥0.8. All subjects completed the life orientation test-revised (LOT-R) for optimistic status assessment.

Results: Five hundred and thirty gout patients and 307 healthy controls matched by age (41.4±12.3 vs. 42.1±9.3 years), gender (male 97.1% vs. 95.1%) and education (college graduated 54.2% vs. 58.0%) were included in this study. Of the 530 gout patients, the mean disease duration was 5.7±4.9 years, and 292 (55.1%) patients' MPR were lower than 0.8. There was no statistic difference in LOT-R between gout patients and healthy controls (19.0±2.4 vs. 19.2±2.5, P>0.05) (Table 1). Gout patients with poor compliance (MPR<0.8) had higher level of sUA (525.5±138.0 vs. 471.2±152.5 μmol/L, P<0.05), followup sUA (450.1±154.5 vs. 361.6±120.0 μmol/L, P<0.05) and higher LOT-R (19.6±2.6 vs. 17.8±1.7, P<0.05) than those with good compliance (MPR≥0.8). Of the 292 gout patients with poor compliance, there were only 83 (28.4%) patients achieved sUA target after 3 months, and their LOT-R were significantly lower than