Figure 2: Presence of anti-drug antibodies and neutralizing antibodies over time

ADA, anakinra anti-drug antibodies; NAb, anakinra neutralizing anti-drug antibodies; bars indicate number of flares with 3 timepoints for each flare, flare baseline and flare post baseline; gray bullets indicate presence of ADA at that timepoint; filled bullets indicate presence of NAb at that timepoint; empty bullets indicate absence of ADA/NAb at that timepoint.

Disclosure of Interests: : Kenneth Saag Grant/research support from: Horizon, Sobi, Shanton, Grant/research support from: Horizon Pharma, Sobi, Shanton, Consultant of: Horizon and Sobi, Consultant of: Horizon Pharma, Amgen, Radius, LG-Pharma, Takeda, Sobi, Atom, Arthroci, Puja Khanna Grant/research support from: Dyve, Selecta, Sobi, Consultant of: Sobi, Horizon, Robert Keenan Consultant of: Sobi, Selecta, Horizon, Sven Ohlman Shareholder of: Sobi, Employee of: Former employee of Sobi, Erik Sparve Shareholder of: Sobi, Employee of: Sobi, Daniel Lindqvist Employee of: Sobi, Ann-Charlotte Åkerblad Shareholder of: Sobi, Employee of: Sobi, Margareta Wikén Shareholder of: Sobi, Employee of: Former employee of Sobi, Alexander So Consultant of: Sobi, Grünenthal, Michael H. Pillinger Grant/research support from: Horizon, Hikma, Consultant of: Sobi, Horizon, Robert Terkeltaub Consultant of: Sobi, Selecta, Horizon, Astra-Zeneca

DOI: 10.1136/annrheumdis-2020-eular.3813

THU0440

LOW DOSE COLCHICINE COMBINED WITH SPORADIC INTRAMUSCULAR INJECTIONS OF BETAMETHASONE – EFFICIENT AND SUSTAINED TREATMENT OF ACUTE GOUTY ARTHRITIS

A. Sargsyan¹, V. Vardanyan^{2,3}, K. Ginosyan³, S. Vardanyan², V. Mukuchyan⁴.

¹Yerevan State Medical University, Yerevan, Armenia; ²“Mikayelyan” Institute of Surgery, Yerevan, Armenia; ³Yerevan State Medical University, Yerevan, Armenia;

⁴“Erebouni” Medical Center, Yerevan, Armenia

Background: Gouty arthritis is a common, potentially disabling and increasingly prevalent disease [1]. The main goals of treatment are to treat acute arthritis, decrease uric acid (UA) levels and prevent occurrence of further attacks. According to 2016 updated EULAR evidence-based recommendations for the management of gout, the most common and efficient options include prescription of colchicine (up to 6 mg during the first day) and intra-articular injections of glucocorticoids (GC) [2]. First option often causes diarrhea, the latter is extremely traumatic and painful in this group of patients.

Objectives: The aim of this study was to determine the efficacy of sustainability of anti-inflammatory effect of combination of low dose colchicine with sporadic intramuscular injections of betamethasone in the treatment of acute gouty arthritis.

Methods: 41 treatment naïve patients with acute gouty arthritis (27 male /65,9 %, 14 female /34,1 %, mean age 55,9 ± 13,7 years, mean disease duration 5,9 ± 4,4 years) were recruited in the study. On the first visit all the patients were prescribed 1.5 mg of colchicine per day and 2 intramuscular injections of betamethasone preparation (7mg-1ml) with an interval of 4 days. On the second visit (30th day) daily dose of colchicine was decreased to 1.0 mg, urate-lowering therapy (ULT) was begun. 21 patients (51,2%) received febuxostat 80 mg/day, 20 patients (48,8%) – allopurinol 100-150 mg/day.

Routine investigation included accurate collection of disease history, objective examination with determining the disease activity (Gout Activity Score /GAS/) and visual analogue scale (VAS patient), CBC, CRP, measurement of serum UA and creatinine level, urinalysis and other examinations [4]. GAS, VAS, CRP and uric acid were measured 3 times: at baseline, on 30th and 60th day of follow-up period.

Results: Investigation had shown the following results at baseline: sUA₁ - 9,2 ± 1,5 mg/dl, CRP₁ - 24,3 ± 21,5 mg/L, VAS₁ - 8,3 ± 1,3 cm, GAS₁ 6,3 ± 0,7. All enrolled patients completed 60 days of treatment. Preparations were well tolerated, no serious adverse events occurred: mild dyspepsia was observed in 4 (9,8%) patients, mild hypertension – in 7 (17,1%), 10 (24,4%) patients had transient diarrhea. Only in 14 out of 41 patients (34,1 %) there was a necessity to add NSAIDs to the main scheme of treatment.

On the second visit (30th day) all investigated measures with exception for UA (sUA₂ - 8,8 ± 1,9 mg/dl, p>0.05) had shown significantly lower results: CRP₂ - 4,9±3,5 mg/dl, VAS₂ - 4,2±1,2 cm, GAS₂ - 4,9 ± 0,7 (p<0.001).

On the third visit (60th day) the following results were obtained: sUA₃ - 4,7 ± 1,3 mg/dl, CRP₃ - 3,5±2,0 mg/L, VAS₃ - 3,3±2,1 cm, GAS₃ - 3,7±0,9. All the measures were significantly lower than at baseline (p<0,001).

During all the follow-up period recurrent attacks of arthritis were observed in 6 patients (14,6%), particularly, only 2 patients experienced arthritis after the prescription of ULT.

Conclusion: Low dose colchicine in combination with sporadic (1-2) intramuscular injections of betamethasone can present as an efficient, non-traumatic, safe and cost-effective option for the treatment of acute gouty arthritis. Moreover, according to results of our study, anti-inflammatory effect was stable even after the prescription of ULT.

References:

- [1] Kuo C-F, Grainge MJ, Zhang W, et al. Global epidemiology of gout: prevalence, incidence and risk factors. *Nat Rev Rheumatol* 2015;11:649–62. doi:10.1038/nrrheum.2015.91
- [2] Richette P, et al. 2016 updated EULAR evidence-based recommendations for the management of gout *Ann Rheum Dis* 2017;76:29–42. doi:10.1136/annrheumdis-2016-209707
- [3] Scirè, Carlo A et al. “Development and First Validation of a Disease Activity Score for Gout.” *Arthritis care & research* vol. 68,10 (2016): 1530-7. doi:10.1002/acr.22844

Disclosure of Interests: : None declared

DOI: 10.1136/annrheumdis-2020-eular.3762

THU0441

DIAGNOSTIC ACCURACY OF THE NIJMENGEN SCORE FOR GOUTY ARTHRITIS IN PATIENTS HOSPITALIZED FOR ACUTE MONOARTHRITIS

M. Schmitt¹, A. Ramon², P. Ornetti², J. F. Mailliefert². ¹Dijon University Hospital, Dijon, France; ²Dijon University Hospital, Dijon, France

Background: The gold-standard for diagnosis of gout is the identification of monosodium urate (MSU) crystal in joint fluid. However, the sensitivity, specificity, and reproducibility of such analysis are not excellent, and joint aspiration is sometimes difficult, or impossible. The Nijmegen score is an easy-to-use rule without joint fluid analysis with excellent validity, in primary as well as in secondary care (1, 2). However, its validity as not been evaluated in the particular situation of patients whose acute arthritis necessitates hospitalization.

Objectives: The objective of the present study was to assess diagnosis performances of the score in patients hospitalized for acute monoarthritis.

Methods: *Inclusion:* all patients hospitalized for acute monoarthritis in the rheumatology department of the Dijon University Hospital between 2016 and 2019. *Assessment:* 1- clinical examination by an experimented rheumatologist; 2- joint aspiration and synovial fluid analysis following aspiration; 3- ultrasound (US) examination of the knees, first metatarsophalangeal joints, and arthritic joint by a trained rheumatologist; 4- dual-energy computed tomography (DECT) of the arthritic joint; 5- Nijmegen score (cutoff scores of ≥ 8 needed for diagnosis of gout, and ≤ 4 to rule out gout) and ACR/EULAR 2015 classification criteria (3) (cut-off score of ≥ 8 needed for diagnosis of gout). *Analysis:* positive and negative predictive values, and ROC curve analysis of the Nijmegen score, using as gold-standard on one hand the results of the MSU crystal research, on the other hand those of the ACR/EULAR criteria.

Results: A total of 39 patients were included (mean age = 69.8 ± 15 years, 74.4 % males, mean BMI = 27.5 ± 4.6 Kg/m², mean serum uric acid = 354.6 ± 117.5 μmol/l). The affected joints were the knee (n = 31), ankle (n = 3), hip (n = 2), wrist (n = 2), shoulder (n = 1). Joint fluid analysis revealed MSU crystal in 11 patients. The ACR/EULAR was ≥ 8 in 15 patients. The Nijmegen score was ≥ 8 in 11 patients, including 5 with MSU crystal on joint fluid analysis and 9 with an ACR/EULAR score ≥ 8. The Nijmegen score was ≤ 4 in 15 patients, including 14 with no MSU crystal on joint fluid analysis and 14 with an ACR/EULAR score < 8. The positive predictive values of a Nijmegen score ≥ 8 were 45 % (joint fluid analysis as gold standard) and 81.8 % (ACR/EULAR). The negative predictive values of a Nijmegen score ≤ 4 were 93.3 % (joint fluid analysis and ACR/EULAR as gold standard). On ROC curve analyses, the areas under the curve were 0.763 (95% CI = 0.612 – 0.914) using joint fluid analysis as gold standard (figure 1) and 0.908 (95% CI = 0.814 – 1.0) using the ACR/EULAR score as gold standard (figure 2).

Fig. 1 ROC curve (fluid analysis as gold standard)

Fig. 2 Roc curve (ACR/EULAR as gold standard)

Conclusion: Although having been developed for use in primary-care, the Nijmegen score appears to be useful in patients hospitalized for acute monoarthritis in a rheumatology unit.

References:

- [1] Janssens et al. A diagnostic rule for acute gouty arthritis in primary care without joint fluid analysis. *Arch Intern Med* 2010; 170:1120-6.
- [2] Kienhorst L et al. The validation of a diagnostic rule for gout without joint fluid analysis: a prospective study. *Rheumatology* 2015; 54:609-14.
- [3] Neogi T et al. 2015 Gout Classification Criteria: An American College of Rheumatology/European League Against Rheumatism Collaborative Initiative: ACR/EULAR CLASSIFICATION CRITERIA FOR GOUT. *Arthritis and Rheumatology*. oct 2015;67(10):2557-68.

Disclosure of Interests: : marie Schmitt: None declared, André Ramon: None declared, Paul Ornetti: None declared, Jean Francis Maillefert Grant/research support from: Abbot, Shugai, Roche, Pfizer, BMS, Speakers bureau: Abbot, Shugai, Roche, Pfizer, BMS

DOI: 10.1136/annrheumdis-2020-eular.5999

THU0442 GOUT AND HEART FAILURE IN THE US: A NATIONAL PERSPECTIVE

G. Singh¹, M. Sehgal², A. Mithal³. ¹Stanford University, Gastroenterology and Hepatology, Stanford, United States of America; ²University of California Los Angeles, Los Angeles, United States of America; ³Institute of Clinical Outcomes Research and Education (ICORE), Woodside, United States of America

Background: Heart failure (HF) is the eighth leading cause of death in the US, with a 38% increase in the number of deaths due to HF from 2011 to 2017 (1). Gout and hyperuricemia have previously been recognized as significant risk factors for heart failure (2), but there is little nationwide data on the clinical and economic consequences of these comorbidities.

Objectives: To study heart failure hospitalizations in patients with gout in the United States (US) and estimate their clinical and economic impact.

Methods: The Nationwide Inpatient Sample (NIS) is a stratified random sample of all US community hospitals. It is the only US national hospital database with information on all patients, regardless of payer, including persons covered by Medicare, Medicaid, private insurance, and the uninsured. We examined all inpatient hospitalizations in the NIS in 2017, the most recent year of available data, with a primary or secondary diagnosis of gout and heart failure. Over 69,800 ICD 10 diagnoses were collapsed into a smaller number of clinically meaningful categories, consistent with the CDC Clinical Classification Software.

Results: There were 35.8 million all-cause hospitalizations in patients in the US in 2017. Of these, 351,735 hospitalizations occurred for acute and/or chronic heart failure in patients with gout. These patients had a mean age of 73.3 years (95% confidence intervals 73.1 – 73.5 years) and were more likely to be male (63.4%). The average length of hospitalization was 6.1 days (95% confidence intervals 6.0 to 6.2 days) with a case fatality rate of 3.5% (95% confidence intervals 3.4% – 3.7%). The average cost of each hospitalization was \$63,992 (95% confidence intervals \$61,908 - \$66,075), with a total annual national cost estimate of \$22.8 billion (95% confidence intervals \$21.7 billion - \$24.0 billion).

Conclusion: While gout and hyperuricemia have long been recognized as potential risk factors for heart failure, the aging of the US population is projected to significantly increase the burden of illness and costs of care of these comorbidities (1). This calls for an increased awareness and management of serious co-morbid conditions in patients with gout.

References:

- [1] Sidney, S., Go, A. S., Jaffe, M. G., Solomon, M. D., Ambrosy, A. P., & Rana, J. S. (2019). Association Between Aging of the US Population and Heart Disease Mortality From 2011 to 2017. *JAMA Cardiology*. doi:10.1001/jamacardio.2019.4187
- [2] Krishnan E. Gout and the risk for incident heart failure and systolic dysfunction. *BMJ Open* 2012;2:e000282. doi:10.1136/bmjopen-2011-000282

Disclosure of Interests: : Gurkirpal Singh Grant/research support from: Horizon Therapeutics, Maanek Sehgal: None declared, Alka Mithal: None declared

DOI: 10.1136/annrheumdis-2020-eular.3905

THU0443 SEASONAL VARIATIONS AND ASSOCIATED FACTORS OF GOUT ATTACKS: A PROSPECTIVE MULTICENTER STUDY IN SOUTH KOREA

H. J. Choi¹, K. W. Moon², H. O. Kim³, Y. A. Lee⁴, S. J. Hong⁴, J. Y. Jung⁵, H. A. Kim⁵, C. H. Suh⁵, Y. J. Ha⁶, I. J. Kim⁷, J. Lee⁷, E. K. Park⁸, S. G. Lee⁸, M. R. Seo¹, H. J. Baek¹, S. T. Choi⁹, J. S. Song¹⁰. ¹Gil Medical Center, Gachon University College of Medicine, Incheon, Korea, Rep. of (South Korea); ²Kangwon National University School of Medicine, Chuncheon, Korea, Rep. of (South Korea); ³Gyeongsang National University School of Medicine, Jinju, Korea, Rep. of (South Korea); ⁴Kyung Hee University Hospital, Seoul, Korea, Rep. of (South Korea); ⁵Ajou University School of Medicine, Suwon, Korea, Rep. of (South Korea); ⁶Seoul National University Bundang Hospital, Seongnam, Korea, Rep. of (South Korea); ⁷Ewha Womans University College of Medicine, Seoul, Korea, Rep. of (South Korea); ⁸Pusan National University School of Medicine, Busan, Korea, Rep. of (South Korea); ⁹Chung-Ang University, School of Medicine, Seoul, Korea, Rep. of (South Korea); ¹⁰Chung-Ang University, School of Medicine, Seoul, Korea, Rep. of (South Korea)

Background: Gout shows a seasonal variation that widely differs among geographic areas, and we previously reported a seasonal effect on gout in Korea. However, we had no information regarding changes in diet and had only limited laboratory data because this was a retrospective study in patients receiving a urate-lowering therapy. Therefore, we designed this prospective study to elucidate the seasonality and associated factors of gout attacks in Korea.

Objectives: To evaluate the seasonality and associated factors of the incidence of gout attacks in Korea.

Methods: We prospectively enrolled patients with gout attacks who were treated at nine rheumatology clinics between January 2015 and July 2018 and followed them for 1-year. Demographic data, clinical and laboratory features, and meteorological data including seasonality were collected.

Results: Two hundred-five patients (males, 94.1%) were enrolled. The proportion of patients with initial gout attacks was 46.8% (n = 96). The mean age, body mass index, attack duration, and serum uric acid level at enrollment were 50.5 years, 26.1, 10.2 days, and 7.3 mg/dL, respectively. Gout attacks were most common during spring (43.4%, $P < 0.001$) and in March (23.4%, $P < 0.001$). A similar pattern of seasonality was observed in the group with initial gout attacks. Alcohol was the most common provoking factor (39.0%), particularly during summer (50.0%). The mean diurnal temperature change on the day of the attack was highest in the spring (10.3°C), followed by winter (9.1°C), summer (8.1°C), and fall (8.0°C) ($P = 0.027$). The mean change in humidity between the 2 consecutive days (the day before and the day of the attack) was significantly different among the seasons (3.4%, spring; 0.2%, summer; 0.4%, fall; -3.9%, winter; $P = 0.015$). One hundred twenty-five (61%) patients completed 1-year follow-up (51% in the