that fetuin-A is also associated with bone mineral density [3], it may be regarded as a marker of bone remodeling.

REFERENCES:

- [1] Engvall I.L., Elkan A.C., Tengstrand B., Cederholm T., Brismar K., Hafstrom I. Cachexia in rheumatoid arthritis is associated with inflammatory activity, physical disability, and low bioavailable insulin-like growth factor. *Scand J Rheumatol.* 2008; 37 (5): 321–328.
- [2] Coin A., Sergi G., Minicuci N., Giannini S., Barbiero E., Manzato E., Pedrazzoni M., Minisola S., Rossini M., Del Puente A., Zamboni M., Inelmen E.M., Enzi G. Fat-free mass and fat mass reference values by dual-energy X-ray absorptiometry (DEXA) in a 20-80 year-old Italian population. *Clinical Nutrition.* 2008; 27 (1): 87-94.
- [3] Sari, A., & Uslu, T. The relationship between fetuin-a and bone mineral density in postmenopausal osteoporosis. *Turkish Journal of Rheumatology.* 2013; 28 (3): 195-201.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.568

POS0510

EPIDEMIOLOGY OF COCAINE AND HALLUCINOGEN USE DISORDER HOSPITALIZATIONS IN RHEUMATIC DISEASES

J. Singh¹. ¹University of Alabama at Birmingham, Medicine, Birmingham, United States of America

Background: Cocaine use disorder is a frequent cause of drug use disorders in the U.S. Although hallucinogen use disorder is less common, both are potentially preventable public health issues. To our knowledge, epidemiological studies estimating burden of cocaine or hallucinogen use disorders in common Musculoskeletal diseases (MSDs) are lacking.

Objectives: To assess national time-trends in cocaine use and hallucinogen use disorders in people with MSDs

Methods: This study used the U.S. National Inpatient Sample (NIS), a de-identified national all-payer inpatient health care database (<https://www.hcup-us.ahrq.gov/nisoverview.jsp>) from 1998-2014. The NIS is a 20% stratified sample of hospital discharges in the U.S. It is commonly used to derive national estimates of hospitalization and outcomes. Cocaine or hallucinogen use disorder hospitalization was defined in a validated approach as the presence of the following International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) diagnostic codes: cocaine use disorder, 304.2x, or 305.6x; and hallucinogen use disorder, 304.5x or 305.3x; hospitalizations for drug use in remission, drug counseling, rehabilitation or detoxification were excluded, as in previous studies. MSDs were identified based on the respective ICD-9 codes, a validated approach (5-9), in non-primary position: Gout: 274.xx; rheumatoid arthritis (RA): 714.xx; Fibromyalgia: 729.1; osteoarthritis (OA): 715.xx; or low back pain (LBP): 724.

Results: In 1998-2000, the highest frequency of cocaine use hospitalizations was in people with LBP: LBP (n=5,914), followed by OA (n=4,931), gout (n=2,093), RA (n=2,026), and fibromyalgia (n=1,620). In 2013-2014, the order changed slightly with OA (n=22,185), followed by LBP (n=16,810), gout (n=10,570), RA (n=8,975), and fibromyalgia (n=5,680). Respective rates per 1 million U.S. NIS hospitalizations in 2013-2014 and the relative increase from 1998-2000 to 2013-2014 were: Gout, 10.2 (increase, 4.1-fold); OA, 21.4 (3.5-fold); fibromyalgia, 5.48 (2.5-fold); RA, 8.66 (3.4-fold); and LBP, 16.22 (1.8-fold; figure 1).

Figure 1. Time-trends in the rates of hospitalization with cocaine use and hallucinogen use disorder (A), non-home discharge (B), and in-hospital mortality (C) per 100,000 NIS hospitalization claims. The x-axis shows rate per 100,000 NIS hospitalization claims and the y-axis shows the study periods

In 1998-2000, hallucinogen use disorder hospitalizations were as follows: LBP (n=176), followed by OA (n=63), RA (n=42), fibromyalgia (n=41) and gout (n<10; cells with frequency of 10 or fewer are reported as <10 per NIS guidance). In 2013-2014, the frequency order was the similar, with the highest numbers for LBP (n=525) followed by OA (n=400), RA (n=395), gout (n=135) and fibromyalgia (n=125). Respective rates per 1 million US NIS hospitalizations in 2013-2014 and the relative increase from 1998-2000 to 2013-2014 were: Gout, 0.13 (increase, 25-fold); OA, 0.39 (5.5-fold); fibromyalgia, 0.12 (2-fold); RA, 0.38 (8.5-fold); and LBP, 0.51 (2-fold; figure 1).

Conclusion: This study confirmed an increasing rate of both, cocaine use and hallucinogen use disorder hospitalizations in people with 5 MSDs over a 17-year period from 1998-2014 in the U.S.

Acknowledgements: John D. Cleveland, MS of the University of Alabama at Birmingham for performing data analyses according to the protocol.

Disclosure of Interests: Jasvinder Singh Speakers bureau: JAS is on the speaker's bureau of Simply Speaking. JAS is a member of the executive of Outcomes Measures in Rheumatology (OMERACT), an organization that develops outcome measures in rheumatology and receives arms-length funding from 12 companies., Consultant of: consultant fees from CreaIta/Horizon, Medisys, Fidia, UBM LLC, Trio Health, Medscape, WebMD, Two labs Inc., Adept Field Solutions, Clinical Care options, Clearview healthcare partners, Putnam associates, Focus forward, Navigant consulting, Spherix, MedIQ, Practice Point communications, the National Institutes of Health and the American College of Rheumatology.

DOI: 10.1136/annrheumdis-2021-eular.613

POS0511

USING HIP STRUCTURAL ANALYSIS MEASUREMENTS TO PREDICT FRACTURE IN RHEUMATOID ARTHRITIS

B. Ark^{1,2}, M. Bukhari^{1,2}. ¹Lancaster University, Lancaster Medical School, Bailrigg, United Kingdom; ²University Hospitals of Morecambe Bay NHS Foundation Trust, Royal Lancaster Infirmary, Lancaster, United Kingdom

Background: Rheumatoid arthritis (RA) is a chronic inflammatory autoimmune disease and increases the risk of developing osteoporosis. Incidence of fracture is higher in this group of patients compared to the general population and can lead to increased morbidity (1). Bone strength of the proximal femur is not only linked to bone mineral density; it also depends on the geometric properties of the bone mass (2). Hip structural analysis (HSA) is a technique used to assess hip bone structure that takes geometric measurements of the femur from dual-energy X-ray absorptiometry (DEXA) images (3).

Objectives: To determine whether HSA measurements help predict fracture in patients with RA.

Methods: Data were collected from June 2004 to August 2017 from RA patients who underwent a DEXA scan at a District General Hospital. This included hip axis length (HAL), cross-sectional area (CSA), cross-sectional moment of inertia (CSMI), distance from centre of femoral head to centre of femoral neck (D1) and to inter-trochanteric line (D2), mean femoral neck diameter (D3), shaft angle (A) neck/shaft angle (Θ) and proximal femur strength index (SI) and distance from centre of mass of femoral neck to superior neck margin (Y). Fracture was predicted by a series of binomial logistic regression models, adjusted for sex, age and bone mineral density (BMD). Odds ratios with 95% confidence intervals and area under the receiver operating characteristic curve (AUC) were calculated.

Results: 2077 patients with RA were identified, 1632 were female and the mean age was 66.7. HAL, D1, D2, D3, A, Θ and Y were not significant predictors of fracture in regression models; odds ratios are included in table 1. CSA, CSMI and SI predicted fracture risk. The AUC for CSA, CSMI and SI regression models were 0.632, 0.609 and 0.625 respectively.

Table 1. Odds ratios of fracture for different HSA parameters in RA patients

HSA Parameter	Odds Ratio (95% Confidence Interval)
HAL	1.01410 (0.99958 - 1.02883)
CSMI	0.99994 (0.99990 - 0.99998)
CSA	0.98523 (0.98065 - 0.98982)
D1	1.01683 (0.98925 - 1.04518)
D2	1.01286 (0.99886 - 1.02705)
D3	1.00664 (0.96958 - 1.04511)
Y	1.04580 (0.98633 - 1.10886)
A	1.00898 (0.98878 - 1.02959)
Θ	1.00276 (0.98672 - 1.01906)
SI	0.56769 (0.43400 - 0.74258)

Figure 1. Receiver operating characteristic curves for CSA (red), CSMI (green) and SI (blue). AUC for CSA was 0.632, CSMI-0.609 and SI-0.625.

Conclusion: These data suggest that CSA, CSMI and SI help predict the fracture risk in patients with RA. HAL, D1, D2, D3, A, Θ and Y do not predict risk of fracture. The CSA regression model was the strongest predictor of fracture. HSA measurements can therefore help predict risk of fracture in conjunction with other factors. Limitations of the study are that it was retrospective and only studied patients who had a DEXA scan.

REFERENCES:

- [1] Xue A, Wu S, Jiang L, Feng A, Guo H, Zhao P. Bone fracture risk in patients with rheumatoid arthritis: A meta-analysis. *Medicine*. 2017; 96 (36): e6983. Available from: doi: 10.1097/MD.0000000000006983.
- [2] Faulkner KG, Wacker WK, Barden HS, Simonelli C, Burke PK, Ragi S, Del Rio L. Femur strength index predicts hip fracture independent of bone density and hip axis length. *Osteoporos Int*. 2006;17(4):593-9. doi: 10.1007/s00198-005-0019-4.
- [3] Kaptoge S, Beck TJ, Reeve J, Stone KL, Hillier TA, Cauley JA, et al. Prediction of Incident Hip Fracture Risk by Femur Geometry Variables Measured by Hip Structural Analysis in the Study of Osteoporotic Fractures. *Journal of Bone and Mineral Research*. 2008; 23 (12): 1892-1904. Available from: doi: https://doi.org/10.1359/jbmr.080802.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.802

POS0512

DIFFERENCES IN TREATMENT SATISFACTION, PATIENT PREFERENCES, AND TREATMENT PATTERNS BETWEEN EUROPEAN, SOUTH AMERICAN, AND JAPANESE PATIENTS WITH SUBOPTIMALLY CONTROLLED RHEUMATOID ARTHRITIS: A SUBGROUP ANALYSIS OF THE SENSE STUDY

P.C. Taylor¹, P. Sidiropoulos², C. Ancuta³, I. Lagunes-Galindo⁴, M. Delavega⁵, U. Kalyoncu⁶, O. Nagy⁷, A. Kawakami⁷. ¹University of Oxford, Botnar Research Centre, Nuffield Department of Orthopaedics, Rheumatology and Musculoskeletal Sciences, Oxford, United Kingdom; ²University of Crete, Faculty of Medicine, Heraklion, Greece; ³Grigore T. Popa University of Medicine and Pharmacy, Department of Rheumatology, Iași, Romania; ⁴AbbVie, Inc., North Chicago, United States of America; ⁵CEIM Investigaciones Medicas, Buenos Aires, Argentina; ⁶Hacettepe University, Department of Internal Medicine, Division of Rheumatology, Ankara, Turkey; ⁷Nagasaki University Graduate School of Biomedical Sciences, Department of Immunology and Rheumatology, Nagasaki, Japan

Background: Despite the availability of advanced therapies, many patients with rheumatoid arthritis (RA) do not achieve their treatment goals. Understanding geographic influence on patient perspectives and physicians' attitudes toward

treatment adjustments may inform region-specific strategies to improve outcomes in RA.

Objectives: To explore differences in treatment satisfaction, patient preferences, and treatment strategies between patients from Europe (EU), South America (SA), and Japan (JP) with suboptimal control of RA.

Methods: This is a subgroup analysis of SENSE, a non-interventional cross-sectional study in adults with RA who had moderate/high disease activity as measured by Disease Activity Score in 28 joints with erythrocyte sedimentation rate (DAS28[ESR]) >3.2, despite disease-modifying antirheumatic drug (DMARD) treatment. Patient satisfaction and preferences, treatment adherence, patient-reported outcomes, and physicians' plans for DMARD switch were assessed as previously described.¹ Predictors of good treatment satisfaction and physician's decision not to switch DMARDs were identified using multiple logistic regression analyses.

Results: Of 1234, 272, and 118 patients enrolled from EU, SA, and JP, respectively, 13.9%, 15.4%, and 5.9% reported good treatment satisfaction. Irrespective of region, patients reported impaired quality of life and good treatment adherence, and around one-third of patients received targeted synthetic (ts) or biologic (b) DMARDs. Among patients treated with ts/bDMARDs, monotherapy was most common in SA (45.3%), followed by EU (26.3%) and JP (18.8%), consistent with a greater acceptance of combination therapy in JP. More than 80% of JP patients preferred oral treatments versus <60% of EU/SA patients. DMARD switches were planned in 51.8% (EU), 57.4% (SA), and 38.1% (JP) of patients, most commonly to a tumor necrosis factor inhibitor. Predictors for good treatment satisfaction included treatment with ts/bDMARDs and the presence of psychiatric disorders in EU and SA; however, current disease activity was not a common predictor (Table 1). Reluctance to switch treatments was predicted by lower disease activity assessed by DAS28(ESR) (all regions) and current treatment with ts/bDMARDs (EU/SA).

Table 1. Predictors for good treatment satisfaction and no treatment switch planned

OR (95% CI)	Europe (n=1234)	South America (n=272)	Japan (n=118)
Good treatment satisfaction (TSQM global treatment satisfaction ≥80)			
Current treatment with ts/bDMARDs	3.8 (2.7, 5.4)****	4.9 (2.2, 10.8)****	—
Psychiatric disorders	2.4 (1.3, 4.6)**	3.1 (1.2, 8.4)*	—
Number of comorbidities	—	—	2.3 (1.2, 4.3)*
Worst joint pain	—	1.3 (1.1, 1.5)**	—
SF-36 MCS	1.0 (1.0, 1.1)****	—	1.3 (1.1, 1.5)**
SF-36 PCS	1.1 (1.0, 1.1)****	—	—
Work Productivity and Activity Impairment—Rheumatoid Arthritis:	—	1.0 (1.0, 1.0)***	—
Total activity impairment	—	0.3 (0.1, 0.7)**	—
DAS28(ESR) >5.1	—	—	0.1 (0.0, 0.9)*
Female	—	—	—
No treatment switch planned			
Current treatment with ts/bDMARDs	3.9 (3.0, 5.2)****	2.4 (1.4, 4.2)**	—
Number of comorbidities	1.2 (1.1, 1.4)****	—	—
Age	—	—	1.0 (1.0, 1.1)*
TSQM effectiveness subscore	1.0 (1.0, 1.0)***	1.0 (1.0, 1.0)***	—
Number of concomitant medications	0.9 (0.8, 1.0)**	—	—
DAS28(ESR)	0.5 (0.5, 0.6)****	0.6 (0.5, 0.8)***	0.6 (0.4, 0.9)*

X² test: ****p<0.0001, ***p<0.001, **p<0.01, *p<0.05CI, confidence interval; OR, odds ratio; SF-36M/PCS, 36-Item Short-Form Survey mental/physical component summary; TSQM, Treatment Satisfaction Questionnaire for Medication

Conclusion: In patients with moderate to high RA disease activity, current disease control was a common determinant of treatment switches. Predictors for good treatment satisfaction revealed region-specific patient attitudes to treatment acceptance despite poor disease control.

REFERENCES:

- [1] Taylor PC, et al. *Ann Rheum Dis* 2020;79:996–7

Acknowledgements: AbbVie funded this study; contributed to its design; participated in data collection, analysis, and interpretation of the data; and participated in the writing, review, and approval of this abstract. No honoraria or payments were made for authorship. Medical writing support was provided by Hilary Wong, PhD, of 2 the Nth (Cheshire, UK), and was funded by AbbVie.

Disclosure of Interests: Peter C. Taylor Speakers bureau: AbbVie, Biogen, Bristol-Myers Squibb, Celgene, Eli Lilly, Fresenius, Galapagos, Gilead, GSK, Janssen, Nordic Pharma, Pfizer, Roche, Sanofi, and UCB., Consultant of: AbbVie, Biogen, Bristol-Myers Squibb, Celgene, Eli Lilly, Fresenius, Galapagos, Gilead, GSK, Janssen, Nordic Pharma, Pfizer, Roche, Sanofi, and UCB., Grant/research support from: AbbVie, Biogen, Bristol-Myers Squibb, Celgene, Eli Lilly, Fresenius, Galapagos, Gilead, GSK, Janssen, Nordic Pharma, Pfizer, Roche, Sanofi, and UCB., Prodomos Sidiropoulos Speakers bureau: AbbVie, Amgen, MSD, Novartis, Pfizer, Roche, and UCB., Consultant of: AbbVie, Amgen, MSD, Novartis, Pfizer, Roche, and UCB., Grant/research support from: AbbVie, Amgen, MSD,