unexposed patients. Restrictive bariatric surgery yielded lower risks of CTS (HRs of 0.81, 95% CI 0.69-0.88) than did malabsorptive bariatric surgery (HR of 0.95, 95% CI 0.88-1.02) when compared to obese unexposed patients. The risk of CTS increased with duration of follow-up. The lowest risk was observed 1-3 years after bariatric surgery (HR of 0.77, 95% CI 0.68-0.88) and the highest risk 6-13 years after bariatric surgery (HR of 1.20, 95% CI 1.05-1.36) when compared to obese unexposed patients.

Conclusion: Our results suggest that substantial weight loss is not overall associated with severe CTS in an obese patient population. However, bariatric surgery was associated with an initial decreased risk of CTS after bariatric surgery followed by an increased risk in later follow-up. Furthermore, restrictive bariatric surgery but not malabsorptive bariatric surgery was associated with a decreased risk of CTS.

Acknowledgements: We thank Prof. Dr. Jesper Lagergren (Karolinska Institutet, Stockholm, Sweden) for hosting Dr. Theresa Burkard for a research stay at the Uppsala University Hospital, Sweden Group and making the data available for use. Furthermore, we thank Dr. Giola Santoni (Karolinska Institutet, Stockholm, Sweden) for her technical support.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4083

POS0012 EPIDEMIOLOGY OF FIBROMYALGIA HOSPITALIZATIONS IN THE UNITED STATES

K. Mathias1, A. Mantha2, L. Mathias3, D. Arkfeld3. 1University of Chicago, 2Internal Medicine, Los Angeles, United States of America; 3USC Keck School of Medicine, Internal Medicine, Los Angeles, United States of America

Background: Fibromyalgia is a chronic pain syndrome that is associated with protein symptoms including musculoskeletal pain, psychiatric symptoms, cognitive dysfunction, memory difficulty, and sleep disturbance. Fibromyalgia can be a primary diagnosis, or it can be associated with other conditions. Fibromyalgia is often seen in conjunction with autoimmune diseases such as systemic lupus erythematosus and rheumatoid arthritis. In 1990, the American College of Rheumatology released classification criteria for fibromyalgia that included symptoms of diffuse pain and physical exam findings of at least 11 of 18 defined tender points. In 2010, the ACR updated these criteria and eliminated the requirement of tender points. In 2011, these criteria were further modified to that they could be self-administered. A previous study used the national inpatient sample to examine hospitalization data for patients with fibromyalgia from 1999-2007. 

No studies, however, have examined this data since the new ACR criteria were established in 2010.

Objectives: We aim to characterize the epidemiology of hospitalized patients with diagnosis of fibromyalgia.

Methods: Hospitalized patients with a diagnosis of fibromyalgia were identified in the 2016-2018 National Inpatient Sample (NIS) using the International Classification of Diseases 10 system (ICD-10). The NIS is an all-payer inpatient database that estimates over 37 million annual U.S. hospitalizations and is maintained by the Healthcare Cost and Utilization Project. The primary outcomes were prevalence of fibromyalgia and comorbid rheumatologic conditions among hospitalized patients. Secondary outcomes included cause of admission, mortality, length of stay, and cost of care.

Results: Of 1,351,234 patients with fibromyalgia identified, 437,145 were admitted in 2016 increasing to 461,820 in 2018. On average 59.1 years old, more likely female (1,262,735, 93.5%) and white (1,060,845, 81.3%). Patients were more likely to have Medicare (775,420, 57.5%) and were in the bottom quartile of income (402,945, 30.3%). The most common rheumatologic comorbidities were rheumatoid arthritis (142,195, 10.5%), lupus (69,980, 5.2%), and inflammatory bowel disease (38,165, 2.2%). Notably fibromyalgia was commonly associated with depression (500,420, 37.0%), obesity (379,324, 28.1%), hypothyroidism (334,585 24.7%), and congestive heart failure (213,790, 15.8%). The mortality rate was 19,605 (1.0%) patients, the average length of stay was (4.53 days), and the average cost of hospitalization ($12,522). The most common causes of admission were inflammatory syndromes and joint disorders (13.4%) of which OA (4.2%) was most common, and digestive complaints (12.1%) of which IBD (4.4%) was most common.

Conclusion: The yearly number of fibromyalgia hospital discharges was greater than previously described. This may be a result of a more sensitive classification criteria. Further investigation into the etiology of this increase in fibromyalgia hospitalization diagnosis is warranted.

REFERENCES:

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.3416

POS0013 MUSCULOSKELETAL MANIFESTATIONS IN PATIENTS WITH ENDOCRINE DISEASES IN TERTIARY SERVICE

T. Quezera e Silva Faria1, S. Ribeiro1, J. Simão1, A. Vieira1, A. P. Nascimento2, R. Marião2, R. Patricia Quezera e Silva Faria3, L. Praciano1, G. Araújo1, B. Corrêa1 on behalf of IMUNOLOGIA DAS DOENÇAS TROPICAIS - IMMUNOLOGY OF TROPICAL DISEASES. 1UFAM, Clinica médica, Manaus, Brazil

Background: Musculoskeletal diseases represent about 50 to 70% of the frequency of chronic diseases according to previous studies (SOUZA, OLIVEIRA, 2015). Chronic pain is often associated with these diseases and is an important cause of care in the health service. Thus, medical professionals are required to adequately manage their patients. Despite the lack of knowledge of some, endocrine diseases are basic diseases linked to musculoskeletal manifestations. Thus, secondary arthropathies of the non-rheumatologic origin or ostearticular complaints that simulate or show rheumatic diseases can be seen in patients with endocrine diseases during their evolution or in the initial phase along with other systemic symptoms.

Based on this concept, the musculoskeletal manifestations presented by patients with endocrine disorders in tertiary health service were monitored and evaluated.

Objectives: The objective of this study is to characterize the musculoskeletal manifestations in patients with endocrine diseases: type 1 and type 2 diabetes mellitus; hypothyroidism; hyperthyroidism and pituitary diseases and to clinically classify the patients based on physical and imaging findings.

Methods: A cross-sectional and descriptive study, where clinical screening was performed at the endocrinology outpatient clinic, in which patients with musculoskeletal complaints were identified. These patients were referred for evaluation with a rheumatologist with clinical, laboratory and imaging investigation for the diagnosis of rheumatic disease. A questionnaire with epidemiological and clinical data was applied.

Results: In this study, 325 patients with endocrine diseases were interviewed, 53 ± 16.4 years old, 258 (80%) were female and 64 (20%) males. Of the interviewed patients, 236 (72.8%) reported musculoskeletal pain, being that 196 (75.9%) of the women and 33% of the men indicated this type of symptom. Regarding endocrine diseases, the most frequent was Diabetes Mellitus type 2 with 158 patients (48.6%), and 75% of these people have chronic musculoskeletal pain, most 5 to 7 times a week, showing an intrinsic character of this disease with pain complaints from a large part of this population. It was also identified the prevalence of 25% of Hypothyroidism, 12% of Diabetes type 1, 9% of Hyperthyroidism and less expressive amounts of other endocrine diseases such as Acromegaly (2.1%), Gigantism (0.3%) and similar. About 63% of those who have pain are not followed up in the service of rheumatology, 42% of these have already indicated these pains to their endocrinologist, however they have not had their complaint properly flagged. Of these patients, 94 (29%) use Antihypertensives and 25% Oral Antidabetic. The most notable diagnoses in rheumatology are: Rheumatoid Arthritis (29%); Osteoarthritis (27%); Osteoporosis and Fibromyalgia both with 20.6% of diagnoses and Psoriatic Arthritis and GOUT with 6%. The main musculoskeletal complaints are to be pain the Hands (52%); Knees (40%); Spine and feet with 30% each.

Conclusion: Although there is a demand of more confirmatory studies, our preliminary results showed the mutuality between endocrine diseases and musculoskeletal manifestations and, therefore, that rheumatological findings are increasingly frequent in this population. The high prevalence of these symptoms secondary to endocrine diseases raises serious questions in order to improve the quality of life of these patients, and also to increase the number of researches in this field, because the pathophysiological mechanisms of this association are not well elucidated and, from this, expand this information to professionals who may not be aware of this relationship.

REFERENCES:

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1481

POS0014 TIME-TRENDS IN COCAINE AND HALLUCINOGEN USE DISORDER HOSPITALIZATIONS IN RHEUMATIC DISEASES: A NATIONAL TIME-TRENDST STUDY

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 hospitalizations were 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=1,820). 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=6,680). 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).

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 of 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 U.S. NIS hospitalizations in 2013-2014 and the relative increase from 1998-2000 to 2013-2014 were: Gout, 0.12 (increase, 4.1-fold); OA, 2.14 (5.5-fold); fibromyalgia, 5.48 (2.5-fold); RA, 6.66 (3.4-fold); and LBP, 16.22 (1.8-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.

**Disclosure of Interests:** Jasvinder Singh Shareholder of: JAS owns stock in Focus forward, Navigant consulting, Spherix, Practice Point communications, the National Institutes of Health and the American College of Rheumatology, Rehabilitation and Pain Care, the Fondation National de la Recherche Médicale, the American Medical Association, the American College of Rheumatology; Consultant to: Focus forward, Navigant consulting, Spherix, Practice Point communications, Allergan, Inc., Lilly, Pfizer, Amgen, and the National Institutes of Health; Speaker to: Focus forward, Navigant consulting, Spherix, Practice Point communications, Allergan, Inc., Lilly, Pfizer, Amgen, and the National Institutes of Health.

**Co-authorship:** Tschernatsch, Reinhard, Neumann, Tina, Gerriets, Till, Allendörfer, Jochen, Ruck, Thomas, Schänzer, Andrea, Müller-Ladner, Ursula.

**Funding:** This study was funded by the National Institutes of Health (NIH), the American College of Rheumatology, the Fondation National de la Recherche Médicale, the American Medical Association, the American College of Rheumatology, Rehabilitation and Pain Care, the National Institutes of Health, GlaxoSmithKline, Pfizer, Amgen, Novartis, Lilly, and Janssen-Cilag. The National Institutes of Health (NIH) and the American College of Rheumatology funded the study. The Fondation National de la Recherche Médicale, the American Medical Association, the American College of Rheumatology, Rehabilitation and Pain Care, the National Institutes of Health, GlaxoSmithKline, Pfizer, Amgen, Novartis, Lilly, and Janssen-Cilag paid for the data collection and analysis for this study. The authors have reported that no potential conflicts of interest exist.

Figure 1. Time-trends in the rates of hospitalization with cocaine use and hallucinogen use disorder from 1998-2014 in people with 5 MSDs. The x-axis shows the annual number of hospitalizations per 100,000 people, and the y-axis shows the percentage of hospitalizations.

**Table 1. Subtypes of NP in RMD**

<table>
<thead>
<tr>
<th>Subtype</th>
<th>Number of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Axial NP</td>
<td>14/31 (45%)</td>
</tr>
<tr>
<td>Demyelinating NP</td>
<td>2/31 (6%)</td>
</tr>
<tr>
<td>Mixed axial and demyelinating NP</td>
<td>4/31 (12%)</td>
</tr>
<tr>
<td>Sensory NP</td>
<td>9/31 (28%)</td>
</tr>
<tr>
<td>Sensorimotor NP</td>
<td>5/31 (16%)</td>
</tr>
<tr>
<td>Motor NP</td>
<td>1/31 (3%)</td>
</tr>
</tbody>
</table>

**Disclosure of Interests:** None declared.

DOI: 10.1136/annrheumdis-2021-eular.3931

**POS0016**

**THE EVALUATION OF FUNCTIONAL ABILITIES OF PATIENTS WITH OSTEOPOROTIC VERTEBRAL FRACTURES AS A BASIS FOR REHABILITATION PROGRAMS DEVELOPING**

L. Marchenkova1, V. Vasiliev1, M. Eryomushkin1, 1National Medical Research Center for Rehabilitation and Balneoology of Ministry of Health of Russian Federation, Rehabilitation Department for Somatic Patients, Moscow, Russian Federation

**Background:** Due to the demand for special rehabilitation programs for patients with osteoporotic vertebral fractures (VF), it is of interest to study the functional abilities of those patients. The scientific hypothesis suggests that osteoporotic VF would cause muscle weakness, muscle dysfunction and postural disturbances.

**Objectives:** to establish muscle strength, motor function and coordination disorders in patients with VF in the setting of systemic osteoporosis as a basis for rehabilitation programs developing.

**Methods:** 120 patients aged 43-80 with primary osteoporosis were enrolled. Study group comprised of 60 subjects (56 women, 4 men) with at least 1 VF confirmed by X-rays. Control group included 60 subjects (56 women, 4 men) with osteoporosis but without any osteoporotic fracture. The examination program included back muscles manual myometry, balance tests and stabilometry.

**Results:** Muscle strength deficiency was estimated in study group in trunk flexors (TF) — 40.9% and in trunk extensors (TE) — 18.1% with an adequate function of the left lateral flexors (LLF) and in right lateral flexors (RLF). Patients with VF had the lower muscle strength vs controls of TE (15.6±4.9 vs 27.7±3.9, p=0.00002), TF (14.6±1.8 vs 21.2±8.3, p=0.00006), LLF (13.10±7.2 vs 36.2±7.8, p=0.00002).