Objectives: To compare hip fracture risk and major osteoporotic fractures risk using the FRAX® tool, with and without the consideration of asymptomatic VF on VFA. To evaluate the impact of FRAX® calculation and asymptomatic VF identified on VFA on osteoporosis fracture management.

Methods: We conducted a cross-sectional study over a period of 5 months at the rheumatology department. The study included post-menopausal women without a previous diagnosis of VF referred for BMD (Bone mineral density) measurement. Each participant had a BMD assessment and a VFA scan to detect VF. The FRAX® was calculated using femoral neck BMD initially without then with consideration of VF. The change of therapeutic decision was assessed after taking into consideration FRAX® and the VFA results.

Results: The study included 210 post-menopausal women with a mean age of 61.5±8.5 years. The mean BMI was 31.04±5.52 kg/m². One woman was a current smoker and alcohol intake was not found in our sample. Thirty-seven percent of our participants had at least one fragility fracture. A severe fragility fracture was recorded in 10.5% and a previous hip fracture was reported in 5.24%. An early menopause was found in 19.5% of our women. Twenty percent of our population were receiving corticosteroids and 8.2% of our population had rheumatoid arthritis. The mean vertebral and total hip BMD was 0.955±0.165 g/cm² and 0.850±0.135 g/cm² respectively. Osteoporosis and low BMD were found in respectively 50% and 34.28%. The median probability of major osteoporotic fracture for our population was 1.5% with an interquartile range from 0.2 to 2.5% without using VFA data and 1.65% with an interquartile range from 1 to 2.6% while taking into consideration VFA results and the difference was statistically significant (p<0.0001). The median probability of hip fracture for our population was 0.4% with an interquartile range from 0.1 to 0.9% without using VFA data and 0.4% with an interquartile range from 0.1 to 1% while taking into consideration VFA results and the difference was statistically significant (p<0.0001). In all patients, the FRAX® was under the threshold intervention even after including the asymptomatic VF and it did not change the therapeutic decision. The presence of asymptomatic VF on VFA changed the therapeutic decision in 15% and indicated an anti-osteoporosis drug therapy.

Conclusion: VFA scanning helped in the therapeutic decision in 15% of our population. In this evaluation, we showed that a comprehensive fracture risk pathway incorporating VFA has enhanced diagnosis of vertebral fractures and improved targeting of treatment better than FRAX® tool.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4206

**POS111**

THE RELEVANCE OF OSTEOPOROSIS DIAGNOSIS AND TREATMENT FOR DOCTORS WORKING IN THE FIELD OF PHYSICAL AND REHABILITATION MEDICINE

L. Marchenkovɑ1, V. Vasileva1, 1National Medical Research Center for Rehabilitation and Balneology of Ministry of Health of Russian Federation, Rehabilitation Department for Somatic Patients, Moscow, Russian Federation

Background: There is a high prevalence of osteoporosis (OP) among patients of the older age undergoing rehabilitation. Therefore, it is obvious that physicians working in the field of physical and rehabilitative medicine should be well oriented in this medical problem.

Objectives: To study the relevance of the problem of osteoporosis (OP) for physicians working in the field of physical and rehabilitative medicine, their awareness of the main methods of diagnosis, treatment and prevention of this disease, as well as the frequency of their use in daily clinical activities.

Methods: A cross-type study was carried out using a questionnaire survey. The study included 157 doctors (M=34, F=123) of 8 medical specialties working in 27 specialized medical institutions on the profile of “medical rehabilitation. The questionnaire for doctors consisted of 21 items of special questions.

Results: 90.45% of the surveyed doctors believed that the problem of OP is relevant for their clinical activities, 100% of the respondents indicated that the presence of OP significantly affects the rehabilitation prognosis and 95.54% on the degree of effectiveness of medical rehabilitation. According to the respondents, OP patients with OP make up on average 30.0% [20.0; 50.0] (0-90) of the total number of OP patients referred their patients to a bone mineral density assessment.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4195

**POS117**

AGREEMENT BETWEEN VERTEBRAL FRACTURE ASSESSMENT AND RADIOGRAPHIC SCANS FOR THE DIAGNOSIS OF VERTEBRAL FRACTURE

C. Daldoul1, N. El Amri1, K. Baccouche1, H. Zegaloui1, E. Bouajina1. 1Farhat Hached Hospital, Rheumatology, Sousse, Tunisia

Background: Conventional radiography of thoracic and lumbar spine are considered the gold-standard imaging for vertebral fracture (VF) identification. However, there was a growing interest in the use of vertebral fracture assessment (VFA) as a low-radiation tool. In fact, the radiation dose for VFA is about 3 micro-Sievert compared to 600 Sievert for lateral standard radiography. Moreover, it costs 2-times less than X-rays. However, the advantage granted by a lower radiation dose is unfortunately counterbalanced by higher noise rates and therefore lower image quality.

Objectives: The aim of this study was to investigate the diagnostic accuracy of VFA compared to lateral spine radiographs.

Methods: We conducted a cross-sectional study over a period of 5 months at the rheumatology department. The study included post-menopausal women without a previous diagnosis of VF. Each participant had a BMD assessment, a VFA scan and a lateral thoracolumbar X-rays (Rx) to detect VF. VF were identified according the Genant semi-quantitative method. The number of unreadable vertebrae were compared between VFA and Rx using a McNemar test. Cohen's kappa was calculated to assess agreement VF between VFA and Rx results.

Results: The study included 62 patients were collected. The mean age was 62.03±7.84 years. The mean body mass index (BMI) was 29.99±9.13 kg/m² and the mean menopausal duration was 15.2±28 years. Parental history of hip fracture and prior history of fragility fracture were recorded in 25.9% and 40.3% respectively. A premature menopause, Rheumatoid arthritis and use of corticosteroids were found in 12.9%, 4.8% and 19.4% respectively. A historical height loss of more than 4cm and a prospective height loss of more than 2cm were reported in 21% and 38.7% respectively. Using VFA, 22.6% of our population had at least one VF and 33.9% had at least one VF using Rx. Using Rx, 19.4% of our population had at least one VF grade2 and 25.8% had at least one VF grade1. Among all vertebral levels, no statistically significant difference was found while comparing the number of unreadable vertebral on VFA and radiographs. Taking into consideration VF grade2, there was an almost perfect agreement between VFA and Rx (k=0.806, p<0.001); the Se, Sp, PPV and NPV of VFA were respectively 91.7% (95% CI 58.9-98.9), 94% (95% CI 82.5-98.4), 78.6% (95% CI 48.8-94.3) and 97% (95% CI 87.9-99.9). Taking into consideration VF grade1, there was a moderate agreement between VFA and Rx (k=0.580, p<0.001); the Se, Sp, PPV and NPV of VFA were respectively 81.3% (95% CI 53.7-96), 82.6% (95% CI 68-91.7), 61.9% (95% CI 38.7-81) and 92.7% (95% CI 79-98.1). At the vertebral level and when including only grade 2 and 3 VF, the Se, Sp, PPV of VFA were 100% (95% CI 82.2-100), 98.9% (95% CI 97.9-99.5), 74.2% (95% CI 55.1-87.5) and 100% (95% CI 93.2-100) respectively. At the vertebral level, the Se, Sp, PPV and NPV of VFA in detection of grade-1 VF were 65.8% (95% CI 48.6-79.9), 98.3% (95% CI 96.9-99.1), 67.6% (95% CI 50.1-81.4) and 98.1% (95% CI 96.8-99.0) respectively. The analysis by vertebral level revealed substantial to almost perfect agreement for all levels except for T4 and T6 where the test was not applicable. There was a perfect agreement for T5, T8, L3 and L4 vertebral.

Conclusion: VFA showed a high diagnostic performance compared to Rx. One interesting finding is that the NPV of VFA is very high at the vertebral and the individual level and either grade 1 VF were took into consideration or not. This means that a normal VFA can formally rule out the presence of VF.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4206

**POS119**

A SINGLE DOSE OF ZOLEDRONATE INDUCES MODIFICATIONS OF SERUM VEGF IN OSTEOPOROTIC POSTMENOPAUSAL WOMEN

F. Bellone1, N. Morabito1, A. Gaudio1, A. Sottile1, S. Loddo1, F. Corica1, A. Catalano1. 1University of Messina, Department of Clinical and Experimental Medicine, Messina, Italy; 2University of Catania, Department of Clinical and Experimental Medicine, Catania, Italy

Background: Zolendronic acid (ZOL) is an amino-bisphosphonate commonly used to treat osteoporosis and other benign and malignant skeletal diseases. Exposure to bisphosphonates has been previously associated with the risk of osteonecrosis of the jaw (BRONJ), a rare but serious side effect. In cancer patients,
the Vascular Endothelial Growth Factor (VEGF) has been advocated to take part to BRONJ pathogenesis via interfering with angiogenesis. No information is currently available on the VEGF concentrations after Zol administration for osteoporosis.

Objectives: To explore change of VEGF concentrations after Zol administration in postmenopausal women with osteoporosis.

Methods: A total of twenty-eight postmenopausal women treated for osteoporosis, and at least one prevalent vertebral fracture were recruited and randomized in two groups. Eighteen women received a single i.v. dose of Zol 5 mg, while the other 10 served as controls. Serum samples were collected at baseline, after 3 and 30 days, for repeated measurements of VEGF, and measurement of bone turn over markers and 25-hydroxvitamin D (25(OH)D).

Results: VEGF levels increased significantly after 3 days in women receiving Zol; then levels decreased after 30 days compared with VEGF concentrations at both day-3 and baseline (18% at day-30 vs. baseline, p=0.01). 25(OH)D level, a surrogate of vitamin D status, was associated with VEGF change at the end of the study (r=0.29, p=0.028), and this association was maintained also after correcting for age, BMI, time since menopause, femoral neck BMD, osteocalcin, C-terminal telopeptide of collagen type I and baseline levels of VEGF (β=1.7, SE=0.71, p=0.03). Conclusion: Zol administration induced a reduction of circulating VEGF in postmenopausal women treated for osteoporosis, and vitamin D status has been showed to modulate this change. Further studies in this setting of women are needed to define whether VEGF modifications may predict the risk of BRONJ.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.4312

Crystal diseases, metabolic bone diseases other than osteoporosis

Crystal diseases, metabolic bone diseases other than osteoporosis

POS1120 PRESENCE OF TOPHI IS ASSOCIATED WITH A RAPID DECLINE IN THE RENAL FUNCTION IN PATIENTS WITH GOUT

Y. J. Oh1, K. W. Moon2, 3Kangwon National University Hospital, Division of Rheumatology, Department of Internal Medicine, Chuncheon, Korea, Republic of (South Korea); 2Kangwon National University Hospital, Division of Rheumatology, Department of Internal Medicine, Chuncheon, Korea, Republic of (South Korea)

Background: Gout is the most common inflammatory arthritis resulting from a chronic deposition of MSU crystals in the joints and other soft tissues. After the process of repeated tissue damage and repair due to gout, tophi could be formed around the affected joints. Intra-articular tophi may sometimes result in bone destruction, joint deformities, and dysfunction which can adversely affect the patient’s quality of life. Furthermore, early-onset tophaceous gout patients are more likely to develop renal dysfunction, however, few studies have investigated if the presence of tophi is related with the progression of renal dysfunction in gout patients.

Objectives: We aimed to compare clinical characteristics of patients with and without tophi at the time of the diagnosis of gout and investigate the effect of tophi on the renal function in gout patients.

Methods: Data of 257 patients who were first diagnosed with gout at the Kangwon National University Hospital from January 2012 to December 2018 were retrospectively studied. Patients were divided into 2 groups according to the presence of tophi at the diagnosis. We compared clinical characteristics and the progression of renal dysfunction between the two groups.

Results: Of all patients, 66 (25.5%) initially presented with tophi. Patients with tophi were older, had a longer duration of symptoms, and had a higher prevalence of hypertension, joint involvement than those without tophi. The decrease in eGFR from the time of the diagnosis to the end of the study (n=50), indicating uncon- trolled gout patients were co-treated with an immunomodulator. Future studies using more cur- rent data for this analysis pre-dated emerging data on the use of immunomodulation as co-therapy, only 19 of 791 (2%) patients received immunomodulation co-therapy with pegloticase.

Conclusion: This relatively large group of patients with uncontrolled gout treated with pegloticase had similar patient characteristics of those studied in the phase 3 randomized clinical trials. Patients with uncontrolled gout are significantly burdened with systemic co-morbid diseases. The majority of patients had unstable or improved kidney function following pegloticase treatment. As these results reflect patients initiating treatment prior to 2018, before co-treatment with immunomodulation was introduced, this cohort only included a small percentage of patients who were co-treated with an immunomodulator. Future studies using more current data are needed to evaluate real world outcomes in patients treated with pegloticase/imunomodulator co-therapy and to evaluate the impact of systemic co-morbid diseases.

REFERENCES:

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.50

POS1121 DEMOGRAPHICS, COMORBIDITIES, AND RISK FACTORS OF UNCONTROLLED GOUT PATIENTS WHO RECEIVED PEGLOTICASE: FINDING FROM A LARGE US CLAIMS DATABASE

C. Vesel1, A. Morton2, M. Francis-Sedlak1, B. Lamoreaux1, 1Horizon Therapeutics plc, Medical Affairs, Deerfield, United States of America; 2Michigan State University, School of Osteopathic Medicine, Internal Medicine, East Lansing, United States of America

Background: NHANES data indicate that approximately 9.2 million Americans have gout, with a small subset having uncontrolled disease. Pegloticase is a PEGylated recombinant uricase enzyme indicated for treating uncontrolled gout that irreversibly reduces serum uric acid levels (sUA) and resolves tophi. It is contraindicated in patients with uncontrolled gout.

Methods: The TriNetX Diamond database includes de-identified data from 4.3 million US patients with gout (as of September 2019), including demographics, medical diagnoses, laboratory values, procedures (e.g. infusions, surgeries), and pharmacy data. Patients who had received ≥1 pegloticase infusion were included in these analyses. The number of infusions was evaluated for a subgroup of patients who were in the database ≥3 months before and ≥2 years after the first pegloticase infusion (i.e. first infusion prior to September 2017) to ensure only complete courses of therapy were captured. In this subpopulation, kidney function before and after pegloticase therapy was examined, along with the presence of immunomodulation prescriptions (methotrexate, mycophenolate mofetil, azathioprine, leflunomide) within 60 days prior to and 14 days after the first pegloticase infusion.

Results: 1494 patients treated with pegloticase were identified. Patients were 63.1 ± 14.0 years of age (range: 23-91), mostly male (82%), and white (76%). Mean sUA prior to pegloticase was 8.7 ± 2.4 mg/dL (n=50), indicating uncontrolled gout in the identified population. The most commonly reported comorbidities were chronic kidney disease (CKD, 48%), essential hypertension (71%), type 2 diabetes (39%), and cardiovascular disease (38%), similar to pegloticase pivotal Phase 3 trial populations. In patients with pre-therapy kidney function measures (n=134), pre-treatment eGFR averaged 61.2 ± 25.7 ml/min/1.73 m², with 44% having Stage 3-5 CKD. In patients with complete therapy course capture and pre-and post-therapy eGFR measures (n=48), kidney function remained stable (change in eGFR: -2.9 ± 18.2 ml/min/1.73 m²) and CKD stage remained the same or improved in 81% of patients. In 791 patients with complete treatment course capture, patients had received 8.7 ± 13.8 infusions (median: 3, IQR: 2-10). Of these, 189 (24%) patients received only 1 pegloticase infusion and 173 (22%) received ≥2 infusions. As the data cut-off for this analysis pre-dated emerging data on the use of immunomodulation as co-therapy, only 19 of 791 (2%) patients received immunomodulation co-therapy with pegloticase.

Conclusion: This relatively large group of patients with uncontrolled gout treated with pegloticase had similar patient characteristics of those studied in the phase 3 randomized clinical trials. Patients with uncontrolled gout are significantly burdened with systemic co-morbid diseases. The majority of patients had stable or improved kidney function following pegloticase treatment. As these results reflect patients initiating treatment prior to 2018, before co-treatment with immunomodulation was introduced, this cohort only included a small percentage of patients who were co-treated with an immunomodulator. Future studies using more current data are needed to evaluate real world outcomes in patients treated with pegloticase/imunomodulator co-therapy and to evaluate the impact of systemic co-morbid diseases.