non-traumatic acute pain, between 2014 and 2015. All included registries must had a radiological assessment. The gathering of registries concluded after reach 120% of the estimated sample size for a non finite theoretical population, a precision of 3% and a hypothetical estimated prevalence of 7% based on local previous studies of prevalence of vertebral osteoporotic fractures. Vertebral body measures were performed according to Genant scale recommendations from D7 to L5 as far as possible according to the field of study of the radiological chart plate.

Results: 275 randomized registries of dorsal and lumbar pain were included (total=550). Among patients with dorsal pain we identified 62 (22.5%), 30 (10.9%) and 18 (6.5%) vertebral deformities grade I, II and III respectively. Among patients with lumbar pain we identified 31 (11.2%), 49 (17.8%) and 33 (12%) vertebral deformities grade I, II and III respectively. Prevalence of any grade of dorsal vertebral deformity was 40.00% (CI 34.39 – 45.89) and lumbar was 41.09% (CI 95% 35.44 – 46.99). Lumbar vertebral body deformities grade I and II summed 70.7% while dorsal grade I and II summed 83.6%. From the 93 vertebral body deformities grade I, 6.4% were recognized in their clinical histories, 20.2% of the grade II deformities and 92.1% of the grade III deformities, ($P<0.001$).

Conclusions: Although our population sample is circumscribed to symptomatic patients, our results contribute with prevalence of vertebral body deformities in postmenopausal patients grade I and II and who were mostly unnoticed. Proper identification of vertebral body deformities in patients with osteoporosis is crucial to decide treatment strategies in patients with known osteoporosis. Due to that, prevalence studies of this kind are relevant and useful to avoid diagnostic mistakes.

Disclosure of Interest: None declared

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FRI0543 WHICH FACTORS CAN HELP PREDICT FRAGILITY FRACTURES IN PATIENTS DIAGNOSED WITH INFLAMMATORY BOWEL DISEASE? A CASE-CONTROL STUDY

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Background: Inflammatory Bowel Disease (IBD) is a known risk factor for developing low bone mineral density (BMD) osteoporosis, due to malabsorption and treatment with steroids. These patients are more susceptible to fragility fractures. Though the percentage of such fractures is low, they can be associated with impaired mortality and morbidity. The difficulty lies in early detection of patients at an increased risk of fractures. Currently the diagnosis of osteoporosis and predictions of fracture risk are calculated assessing patient BMD on dual energy X-ray absorptiometry (DEXA). However, previous studies suggest that despite a decreasing BMD being significantly associated with an increased risk of fracture, its measurement alone is fairly restricted in predicting them; other patient factors must also be brought into consideration (1).

Objectives: To identify specific factors which may assist in the prediction of fragility fractures in a cohort of patients diagnosed with IBD.

Methods: Patients referred to a DEXA scan in the North West of England were identified and those with a referral reason of IBD were studied. Factors measured at BMD scanning include patient age, height, weight, lumbar and femoral head bmd, BMI, smoking history, alcohol use, family history of fractures, steroid exposure, rheumatoid arthritis and secondary osteoporosis. Patients where assorted into cases and controls after adjusting for age and gender. They were then analysed using T tests for continuous variables and Chi squared tests for categorical variables. Univariate and multivariate logical regression models were then utilised to identify factors predicting fractures.

Results: 938 patients were identified of which 721 (76.9%) were female with an average age of 58 as compared to an average age of 53 in men. 274 patients (29%) had fractures of which 238 were females (87%), at an average age of 63 compared to 60 in men. Men were shown to have a greater risk of fractures. Results of the univariate analysis are shown below.

Predictor	All Pts	Pts with Fracture	Pts without Fracture	P-value	Odds ratio (95% CI)
Age at scan	56.8	62.5	54.5	0.00	1.03 (1.03–1.05)
Height	163.7	161.2	164.7	0.21	0.99 (0.96–1.01)
Weight	71.6	70.0	72.2	0.63	0.99 (0.99–1.08)
Alcohol	52	16	36	0.24	1.48 (0.77–2.82)
Smoking	373	109	264	0.69	1.06 (0.79–1.44)
Family History	169	53	116	0.34	1.19 (0.81–1.74)
RA	49	20	29	0.20	1.49 (0.81–2.75)
Secondary op	108	40	78	0.93	1.02 (0.66–1.56)
Left Femoral Neck BMD	0.87	0.82	0.89	0.00	0.11 (0.04–0.31)
Right Femoral Neck BMD	0.92	0.86	0.94	0.00	0.19 (0.62–0.58)
Lumbar Spine BMD	1.22	1.01	1.10	0.00	0.10 (0.44–0.24)
BMI	28.7	26.9	26.6	0.96	0.99 (0.97–1.03)
Steroid	617	134	483	0.00	0.49 (0.36–0.67)

In the multivariate analysis, statistically significant variables were BMI (OR 1.05, 95% CI 1.01–1.08) and steroids (OR 0.49, 95% CI 0.35–0.69) with steroids being protective against fractures.

Conclusions: In the univariate analysis several risk factors are shown to be associated with fractures. These include femoral neck BMD, steroid use, lumbar BMD and the patient age at the time of the scan. The multivariate analysis showed that the biggest predictor after adjusting for age and gender is steroids and BMI with steroids being protective.

References:

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FRI0544 CLINICAL AND DEMOGRAPHIC PROFILE OF PATIENTS CONSULTING FOR FRAGILITY FRACTURES IN A HOSPITAL IN COLOMBIA DURING THE YEARS 2014-2016: IMAGE OF THE COLOMBIAN HEALTH SYSTEM

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Background: Osteoporosis represents a major public health problem due to the seriousness of a patient's main complication: fracture. The lack of the Colombian health system for a structured public policy aiming diagnosis and early intervention generates a high volume of patients having fragility fractures.

Objectives: To describe the clinical and demographic characteristics of patients with fragility fractures seen in our hospital. To describe the risk factors for fragility fractures. To inquire about the patient's knowledge about osteoporosis. To follow each case establishing whether after presenting the complication (fracture), the patient would receive an ambulatory treatment covered by the health insurance.

Methods: Cross-sectional descriptive study

Results: 111 patients mean age of 74.4 years (± 11.3 years), 84 (75.6%) were women. All consulted for osteoporotic fracture. The most frequent type of fracture was hip (51.4%), followed by vertebra (23.4%), wrist (22.5%) and humerus (4.5%). 87.4% (n=97) had no personal history of fracture and only 1% had a history of frailty fracture in a first-degree relative. Risk factors: 7.2% (n=8) used glucocorticoids, 3.6% (n=4) antiepileptics and 3.6% (n=4) warfarin. 21.6% (n=24) were smokers. 77.5% (n=86) had never previously undergone a densitometry despite the fact that, because of their age, they had indicated that this study had previously been performed. Knowledge of osteoporosis by patients: 49.5% (n=55) did not know that osteoporosis was present, 58.6% (n=65) did not know that fracture was the main complication of this disease and 62.2% =69) does not relate to fractures with osteoporosis. All patients were educated and sensitized about osteoporosis and the importance of diagnosis and treatment and they were given an order to perform densitometry at discharge, despite the above 24.3% (n=27) densitometry was performed in the next year of the fracture. As for treatment, 33.3% (n=37) received calcium plus vitamin D. Only 9.9% (n=11) received treatment for osteoporosis (7 patients with bisphosphonate and 4 with denosumab), none received teriparatide osteoformer therapy.

Conclusions: The present study demonstrates the lack of understanding by the Colombian patients about osteoporosis. Despite of clear indications described international guidelines, we have found a the lack of densitometry measurements on our follow up patients. More serious, only 10% of the patients received treatment for osteoporosis and none of them used a osteoformer therapy. This proves the suboptimal follow-up made by the health insurance companies of our country. Urgent educational and public health policies are needed.

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FRI0545 COMPARISON OF MINERAL BONE DENSITY IN HIV-INFECTED PATIENTS FOLLOWED IN A SPANISH TERTIARY HOSPITAL WITH THAT OF NON HIV-INFECTED SPANISH POPULATION

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Background: Patients with human immunodeficiency virus (HIV) have a higher prevalence of low bone mineral density (BMD) and fractures than the general population, but there are no comparative studies in Spanish population.

Objectives: To assess the BMD in HIV-infected patients followed in a tertiary hospital of Madrid and compare it with the ESOSVAL cohort, which included 11035 patients and is representative of non-HIV population seen in Spanish tertiary centers.

Methods: We performed a cross-sectional study in which BMD values were determined in a prospective cohort that included HIV-infected patients seen our center during the period 2010–2015. Collected data included demography, comorbidities, treatment and densitometric variables.

Results: 93 patients from a total of a total of 924 with BMD data were eligible for the study after discarding those younger than 55 years, because that group is not included in the ESOSVAL cohort. Mean age of patients of our whole cohort was 43.8 years (range: 17–83), 11% were older than 55 years, of whom 83 were men (83%). Most of them were Caucasians, with a mean body mass index 24.1 (range: 14,7–40.6). Median time of HIV infection was 162,6 months (interquartile range [IQR]: 77.7- 283,3), median CD4+ cells nadir was 224 (IQR: 100–332) and median maximun viral load was 4,9 log (IQR: 4,3–5,4); concomitant hepatitis C

virus infection was present in 29%. 25% were treated with tenofovir plus protease inhibitors, and 47% with tenofovir plus a non-nucleoside reverse transcriptase inhibitor. The mean value of BMD in lumbar spine (LS) was 0.93 g/cm^2 (range: 0.84–1.02) and in femoral neck (FN) 0.78 g/cm^2 (range: 0.69–0.86). For the comparison with the ESOSVAL cohort the worst value of T-score in either LS or FN was chosen and patients were classified according to WHO definitions (osteoporosis ≤ -2.5, osteopenia -1 to -2.5); the results are presented in the table. Only the data for the 50–64 and 65–74 years groups were compared because the number of older HIV patients in our center was small. Significant differences were found between the categories of osteoporosis in men in the 65–74 years old group, and that of osteopenia in women in the 55–64 years old group.

	55–64y		*p*-value	65–74y		*p*-value
	HIV+ n=60	ESOSVAL n=2893		HIV+ n=16	ESOSVAL n=1555	
Males						
T-score ≤ -2,5	20%	12.6%	0.08798	44%	11.2%	0.00005*
T-score -1 to -2,5	61%	48.9%	0.02888*	63%	59.2%	0.79102
Females						
T-score ≤ -2,5	31%	21%	0.38845	50%	29,8%	0.37768
T-score -1 to -2,5	82%	50.1%	0.01296*	50%	49,7%	0.99107

Conclusions: We observed a statistically significant increase in prevalence of osteoporosis in HIV-infected men in the 65–74 years group, and in osteopenia HIV-infected men in the 55–64 years group, in concordance with the presumed greater risk derived from a variety of causes (treatment, chronic inflammatory status, comorbidities, etc.). A non significant trend towards an increased prevalence of osteoporosis in the 55–64 years group, and in osteopenia in the 65–74 years group was seen. As for women, there was a statistically significant increase in osteopenia prevalence in the 55–64 years group with HIV and a non significant trend towards increased prevalence of osteoporosis in that age group, whereas no significant increase was observed in the 65–74 years HIV group, presumably due to the small number of patients included in it.
Disclosure of Interest: None declared
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FRI0546 COMPARISON OF MINERAL BONE DENSITY AND RISK FRACTURE ASSESSED BY THE FRAX TOOL IN HIV-INFECTED PATIENTS FOLLOWED IN A SPANISH TERTIARY HOSPITAL WITH THOSE OF NON HIV-INFECTED SPANISH POPULATION

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Background: The Fracture Risk Assessment Tool (FRAX) is a validated clinical fracture risk calculator that estimates 10-year risk of both major osteoporotic and hip fractures in the general population. However, its role in patients with human immunodeficiency virus (HIV) infection is still not clear because may underestimate their risk.
Objectives: To assess the bone mineral density (BMD) and 10-year fracture risk according to FRAX in HIV-infected patients followed in a tertiary hospital of Madrid and compare them with the ESOSVAL cohort, which included 11035 patients and is representative of the non-HIV population seen in Spanish tertiary hospitals.
Methods: We performed a cross-sectional study in which FRAX and BMD values were determined in a prospective cohort that included HIV-infected patients seen our center during the period from 2010 to 2015. Collected data included demography, comorbidities, treatment, risk factors required for the FRAX calculation and densitometric variables.
Results: 97 patients from a total of a total of 311 had bone densitometry data and FRAX assessment available and were included in this study. The mean age of the patients was 55.4 years (range: 50–80), 75 were men (77%), most of them were Caucasians (89%), with a mean body mass index of 24.2 (range: 15–32.7). Median time of HIV infection was 194 months (interquartile range [IQR]: 155.2- 259), median nadir of CD4+ cells was 168 (IQR: 81–308) and concomitant hepatitis C virus infection was present in 40%. Among the risk factors included in FRAX calculation, 44% reported smoking, 10% inadequate alcohol consumption and 3% hyperthyroidism; there was no history of steroid therapy or previous fractures and only one had a family history of hip fracture. The mean value of BMD in lumbar spine (LS) was 0.9 g/cm^2 (range: 0.83–0.99) and in femoral neck (FN) 0.74 g/cm^2 (range: 0.65–0.82). For the comparison with the ESOSVAL cohort the worst value of T-score in either LS or FN was chosen and the patients were classified according to WHO definitions; the results are presented in the table.

	Men 50–64y		*p*	Women 50–64y		*p*
	HIV (n=68)	ESOSVAL (n=2983)		HIV (n=21)	ESOSVAL (n=3043)	
T-score ≤-2,5	14%	12.6%	0.606	33%	21%	0.167
T-score -1 to -2,5	56%	48.9%	0.255	52%	50.1%	0.834
FRAX major fracture ≥10	1.8% (0.4–5.1)	0.1% (0–0.2)	0.002*	2,36% (1.3–4.1)	0.6% (0–1)	0.015
FRAX hip fracture ≥3	0.47% (0–3.5)	0.1% (0.-0.3)	0.002*	0.57% (0–2)	0.7 (0.4–1.1)	0.702

Only the data for the 50–64 years group were compared because the number of older HIV patients in our center was small. No significant differences were found between the categories of osteopenia and osteoporosis in both genders, but there was a significant difference with respect to the risk of both major and hip fractures in males, being higher in patients with HIV infection compared to the population of the ESOSVAL cohort.
Conclusions: HIV-infected patients followed in our center do not show significant differences regarding the prevalence of osteopenia and osteoporosis compared to non-HIV Spanish population represented by the ESOSVAL cohort. However, a trend towards a lesser BMD is seen in all HIV infected groups. The fracture risk estimated by FRAX is significantly higher in HIV-infected men probably due to a higher frequency of associated risk factors.
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FRI0547 OSTEOPOROSIS AND BONE METABOLISM IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) has been associated with bone loss and increased risk for bone fractures. Disease-related factors, age, corticosteroid therapy may be associated with increased bone turnover and bone loss.
Objectives: Here we performed a detailed study on osteoporosis in SSc. We performed bone density assessment by DXA, as well as peripheral forearm quantitative CT (pQCT). In addition, we assessed bone biomarkers and correlated bone- and disease-associated measures.
Methods: Altogether 44 SSc patients (36 women, 8 men; age: 64.1 years; disease duration: 17.6 years) were randomly recruited for the study. Bone density was assessed by DXA at the lumbar spine and femoral neck. pQCT (Stratec) is able to assess total, trabecular and cortical density. We also determined FRAX, levels of vitamin D, as well as bone markers (Ca, PTH, osteoclacin, P1NP, beta-CTX), markers of autoimmunity (ANA, ACA and anti-Scl70) and clinical manifestations of the disease. Statistical analysis was performed by SPSS v22.0.
Results: Vitamin D levels were lower (53.9 +/- 36.8 nM) than the normal range (>75 nM). 34 out of 44 patients (77%) had D-hypovitaminosis. Abnormally increased PTH, P1NP, OC, CTX levels were observed in 10, 7, 2 and 6 patients, respectively. Previous fractures occurred in 19 patients (43%). The vertebral and hip FRAX values were 13.5% and 4%>respectively. By DXA, osteoporosis of the lumbar spine and hip was detected in 10 and 10 patients, while osteopenia were found in 16 and 20 patients, respectively. With respect to pQCT, total and trabecular bone density in SSc patients (248.4 and 150.9 mg/cm^3) was significantly lower than in healthy controls (354 and 193 mg/cm^3, respectively). Higher OC levels were assocated with the diffuse form of SSc (R=0.330, p=0.035). Longer disease duration correlated with lower pQCT total (R=-0.341, p=0.023) and trabecular density (R=-0.336, p=0.026). Interestingly, most bone markers (P1NP, OC, CTX) positively correlated with gastrointestinal manifestations. Furthermore, pQCT total bone density was siognificantly lower in patients with pulmonary involvement, digital ulcer and anti-Scl70+.
Conclusions: A high proportion of SSc patients have osteopenia or osteoporosis, as well as low vitamin D levels. As determined by pQCT, trabecular loss is more common. Both total and trabecular bone loss, as well as bone markers may be associated with disease duration, anti-Scl70 and some organ manifestations. SSc patients should be screened and treated for osteoporosis.
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FRI0548 INFLUENCE OF HOMOCYSTEINE AND VERTEBRAL FRACTURES ON PREVALENT ABDOMINAL AORTIC CALCIFICATION IN POSTMENOPAUSAL WOMEN: A MULTICENTRIC CROSS-SECTIONAL STUDY

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Background: Osteoporosis and cardiovascular diseases are two major public health problems. Both are associated with high morbidity, long-term hospitalization, mortality and loss of independence leading to institutionalization. Vertebral morphometry using dual-energy X-ray absorptiometry (DXA) also known as vertebral fracture assessment (VFA) is a fast, low-radiation technique which produces images that are of sufficient quality to be used to diagnose the presence of vertebral deformity consistent with fracture. VFA has demonstrated utility for vertebral visualization and thus is an important tool for fracture detection in women and men. It has been shown also in many populations that this technique can simultaneously identify abdominal aortic calcification (AAC). Hyperhomocysteinemia, a condition that recent epidemiological studies have shown to be associated with increased risk of vascular disease. A potential role of homocysteine in bone fragility has been considered from the observation of a high prevalence of osteoporosis in subjects with homocystinuria.