VF+ and VF- patients (p=0.001). This result is further stressed in untreated T- subjects (p<0.0001). Treatment, any medication (T+), and drug therapy in particular, significantly counteract the difference between VF+ and VF- within groups (Table 1) and between groups with TBLβ values comparable to untreated VF- patients (p=0.319) and statistically higher than untreated VF+ (p=0.014).

Table 1 Lacunarity of trabecular bone microarchitecture, TBLβ, can assess osteoporosis fracture risk and treatment efficacy

Patients	n VF-/VF+ (%)	TBLβ		p
		VF-	VF+	
Overall	191/88 (100)	66±51	46±42	0.001
T-	121/35 (55.9)	67±51	36±29	0.001
T+, any medication	70/53 (44.1)	65±52	52±48	0.091
VitD/Ca supplements *	25/19 (35.8)	56±49	36±24	0.051
Drug therapy*	45/34 (64.2)	70±54	62±56	0.276
Bisphosphonates**	43/27 (88.6)	70±55	60±54	0.225

VF: prevalent vertebral fractures; **T-** without treatment; **T+** with treatment; * % within T+ patients; ** % within drug therapy group; p: statistical significance from one-tail t-test

Conclusions: These promising results stress the usefulness of the method as a diagnostic tool in the assessment of osteoporotic fracture risk and suggest a potential role of TBLβ as a marker of treatment efficacy. More intriguing results are expected from prospective LOTO data.

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FRI0528 SUCCESSFUL IMPLEMENTATION OF A PHARMACIST-LED FRACTURE LIAISON SERVICE AT A US VETERAN AFFAIRS (VA) HOSPITAL

B. Buehring[1,2,3], T. Holobyn[3], J. Kotek[4], B. Glynn-Servedio[5], S. Wright[6], K. Hansen[1,3], A. Bridges[1,3]. *[1]William S. Middleton Memorial Veterans Hospital, Madison, United States; [2]Rheumazentrum Ruhrgebiet, Herne, Germany; [3]Department of Medicine, University of Wisconsin-Madison, Madison; [4]Milwaukee VA Medical Center, Milwaukee; [5]Durham VA Medical Center, Durham; [6]VA Great Lakes Health Care System, Westchester, United States*

Background: Worldwide, an osteoporosis (OP) care gap exists for individuals with a fragility fracture (FF). Published data shows that US veterans are no exception. To address the OP care gap, fracture liaison services (FLS) are being implemented with the goal to prevent additional FF.

Objectives: Here we report the patient outcomes after initiating a FLS at a US Veterans Affairs (VA) hospital.

Methods: We identified veterans with a pelvic, hip and/or femur shaft fracture by querying a central database. Veterans with traumatic fractures, active OP medication, recent dual-energy X-ray absorptiometry (DXA) and/or hospice status were excluded. The remaining veterans were contacted via letter and the responsible primary health care team was sent a template letter with OP management recommendations via the electronic medical record. Recommendations included DXA, laboratory evaluation, and pharmacologic and non-pharmacologic interventions. In most cases, trained clinical pharmacists serving as FLS coordinators performed all tasks with an expert physician available for questions. Presented data are based on a review 4 months after recommendations were sent.

Results: The initial query revealed 149 veterans with pelvic, femoral, and/or hip fractures without a recent DXA and/or active OP therapy. Of those, 32 (31 males, 1 female) patients suffered a FF and were included in the FLS intervention. Our review showed that 59% of these had a DXA scan, 35% had their calcium/vitamin D intake reviewed, and 40% had started OP therapy or were referred to an OP specialist. When the primary care team's clinical pharmacist instead of the primary care provider implemented the FLS recommendations (10/32), 100% of the recommendations were addressed. Furthermore, 70% of patients had a bisphosphonate ordered, whereas it was 9% when no pharmacist was involved (p=0.0004).

Conclusions: Our study suggests that a pharmacist-led FLS improves post-FF care in US veterans. We found a high percentage of OP care goals met when patients interacted with clinical pharmacists. This observation might be due to the fact that most pharmacists had dedicated training in OP management and their interaction with the patient focused on their FF. In summary, our data suggests that clinical pharmacists trained in OP management can very effectively implement a FLS intervention.

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FRI0529 ANALYSIS OF THE EVOLUTION OF CORTICAL AND TRABECULAR BONE COMPARTMENTS IN THE PROXIMAL FEMUR AFTER SPINAL CORD INJURY BY 3D-DXA

L. Gifre[1,2], L. Humbert[3], A. Muxi[4], L. del Rio[5], J. Vidal[6], E. Portell[6], A. Monegal[1], N. Guañabens[1], P. Peris[1]. *[1]Rheumatology, Hospital Clínic of Barcelona, Barcelona; [2]Rheumatology, Hospital Universitari Germans Trias i Pujol, Badalona; [3]Galgo Medical; [4]Nuclear Medicine, Hospital Clínic of Barcelona; [5]CETIR, Barcelona; [6]Spinal Cord Unit, Guttmann Neurorehabilitation Institute, Badalona, Spain*

Background: Spinal cord injury (SCI) is associated with a marked increase in bone loss and risk of osteoporosis development short-term after injury. 3D-DXA is a new imaging analysis providing volumetric measurements of the cortical and trabecular bone from DXA scans.

Objectives: The aim of this study was to assess the evolution of 3D femoral shape, trabecular macrostructure and cortical bone from DXA scans in patients with recent SCI followed over 12 months.

Methods: 16 males with recent SCI (<3 months since injury) were included. Clinical assessment, bone mineral density (BMD) measurements and 3D-DXA evaluation at proximal femur (analyzing the integral, trabecular and cortical volumetric BMD [vBMD] and cortical thickness) were performed at baseline and at 6 and 12 months of follow-up.

Results: vBMD measured by 3D-DXA significantly decreased at integral, trabecular and cortical compartments at 6 months (-31.1 mg/cm^3, -8.8%, p<0.001; -25.4 mg/cm^3, -11.6%, p=0.001; and -20.4 mg/cm^3, -2.4%, p=0.004), with a further decrease at 12 months, resulting in an overall decrease of -58.9 mg/cm^3 (-16.6%, p<0.001), -47.9 mg/cm^3 (-21.9%, p<0.001) and -42.4 mg/cm^3 (-5%, p<0.001), respectively. Cortical thickness also decreased at 6 and 12 months (-8%, p<0.001; and -11.4%, p<0.001), with the maximal decrease being observed during the first 6 months. The mean BMD loss by DXA at femoral neck and total femur were -17.7% (p<0.001) and -21.1% (p<0.001), at 12-months, respectively. Integral vBMD values at baseline were positively correlated with total femur BMD (r=0.874, p<0.001), however no correlation was observed in the changes in these values at 12-months.

Conclusions: 3D-DXA shows the differentiation of the marked bone loss that occurs at both proximal femoral compartments (cortical and trabecular) short-term after SCI. The present data suggest that 3D-DXA could be a useful complementary assessment tool in SCI patients.

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FRI0530 EFECTIVENESS OF AN ORTHOGERIATRIC FRACTURE LIAISON SERVICE COMPARED WITH STANDARD CARE

A. Naranjo[1], S. Fernández Conde[2], S. Ojeda[1], S. Rodríguez[3], L. Torres Hernández[4], I. Bernardos[1], I. Rodríguez[3], V. Kraev[3], C. Hernández Carballo[4], P. Laynez[4]. *[1]Rheumatology, Hospital Univ. Gran Canaria Dr. Negrin, Las Palmas de Gran Canaria; [2]Internam Medicine, Hospital Universitario NS Candelaria, Santa Cruz de Tenerife; [3]Geriatrics, Hospital Univ. Gran Canaria Dr. Negrin, Las Palmas de Gran Canaria; [4]Internal Medicine, Hospital Universitario NS Candelaria, Santa Cruz de Tenerife, Spain*

Background: Our fracture liaison service (FLS) for outpatients has reported to maintain 73% of the patients on antiresorptive 2 years after the fracture. For hip fracture we are concerned about the low capture rate (27%).

Objectives: To analyze the efectiveness of a FLS for inpatients with hip fracture compared with standard care.

Methods: Observational study carried out in two hospitals, one with a FLS (Hospital Negrin) and the other one with standard orthogeriatric care (Hospital Candelaria). The reference population >65 y from H.Negrin and H.Candelaria are 63,382 and 63,249 inhabitants respectively.

We included patient >65 y with fragility hip fracture ocurred between 1th March 2016 and 31th July 2016. Severe dementia, non-fragility fractures and those patients who died during hospital admittance were excluded. All patients underwent hemogram and biochemistry. The densitometry was not performed on any patient. The only difference between hospitals was a dedicated nurse from the FLS H.Negrin who visited inpatients twice a week, interviewed patients, gave education and applied a treatment protocol to be started by Primary Care.

Data recorded were: age, sex, previous fractures and previous treatment for osteoporosis, including calcium, vitamin D, bisphosphonates, denosumab and teriparatide. We also collected the treatment that was included in the discharge report and treatment six month later (checking the electronic prescription).

Results: We included 185 patients (105 from Hospital Candelaria and 80 from Hospital Negrin), mean age 82 y (Table). The percentage of patients receiving a bisphosphonate or equivalent before hospital admittance was similar in both hospitals. However, the percentage after discharge rose by 91% in the hospital with FLS and remain 8% in the hospital with standard care. After six months, 75% of patients from FLS and 15% of patients with standard care had a treatment.

Conclusions: The implementation of an orthogeriatric FLS lead to an increase in treatment for osteoporosis compared with standard care and similar to our outpatient FLS model. The ideal approach to secondary fracture prevention is a FLS model of care in an integrated health care network, overseen by a nurse coordinator.

	Hospital Negrin	Hospital Candelaria	P
Number of patients	80	105	
Age, mean (SD)	82 (7)	82 (8)	0.96
Sex, women n (%)	64 (80)	71 (67)	0.06
Previous fracture, n (%)	13 (16)	12 (11)	0.34
Previous treatment			
Ca and VD, n (%)	26 (32)	13 (12)	<0.001
Bisphosphonate or equivalent, n (%)	8 (10)	9 (8)	0.73
Treatment in the discharge report			
Ca and VD, n (%)	77 (96)	19 (18)	<0.001
Bisphosphonate or equivalent, n (%)	73 (91)	9 (8)	<0.001
Treatment at 6 months			
Ca and VD, n (%)	60 (90)*	27 (29)**	<0.001
Bisphosphonate or equivalent, n (%)	50 (75)*	14 (15)**	<0.001

Ca and VD: calcium and vitamin D. *Data available from 66 patients; 9 not located, 4 deaths, 1 atypical fracture. **Data available from 93 patients; 4 not located, 8 deaths.

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FRI0531 DUAL ENERGY X-RAY ABSORPTIOMETRY TESTING IN ELDERLY MEN WITH PROSTATE CANCER INITIATING ANDROGEN DEPRIVATION THERAPY REDUCES SUBSEQUENT FRACTURE RISK

M.E. Suarez-Almazor[1], G.M. Cabanillas Salazar[1], H. Zhao[1], B. Shi[2], J. Kim[3], L. Elting[4]. *[1]General Internal Medicine, MD Anderson Cancer Center; [2]Health Science, The University of Texas School of Public Health; [3]Health Science, University of Texas School of Public Health; [4]Health Science, MD Anderson Cancer Center, Houston, United States*

Background: Androgen deprivation therapy (ADT) is a mainstay therapy for prostate cancer, and a risk factor for bone mineral density (BMD) loss and fractures. Despite this risk, few patients undergo measurement of BMD when initiating ADT. Conceivably, screening for bone loss could lead to identification of patients at risk, and to implementation of bone conserving therapy (BCT), and subsequent decrease in fracture risk.
Objectives: To evaluate the utilization of Dual Energy X-ray Absorptiometry (DXA) testing for measurement of BMD in elderly patients with prostate cancer initiating treatment with ADT, and the effects of testing on subsequent fracture risk.
Methods: We conducted a population-based retrospective cohort study using the Surveillance, Epidemiology, and End Results (SEER) and Texas Cancer Registry (TCR) databases linked to Medicare claims. Medicare is the United States national health insurance program for individuals aged 65 and older. We identified all men over 66 years old with a diagnosis of prostate cancer who received ADT. We identified claims for DXA within 12 months prior, and 12 months after ADT initiation. We assumed that if patients had DXA testing in the year before ADT, this would not be repeated. We then ascertained claims for fractures during follow-up after ADT onset, comparing those who had undergone DXA with those who had not. Statistical analysis included multivariate logistic regression adjusting for demographic and clinical variables.
Results: The cohort included 36,739 men with prostate cancer treated with ADT; 48.3% were over 75 years of age and 75% were white. Only 5.2% of the patients underwent DXA within the window of evaluation. Men were more likely to have DXA id the were white vs. African American, and if the lived in census tracts with higher socio-economic status. When comparing the incidence of fractures, 11.3% of those who underwent DXA had a fracture, compared to 19.4% of those who did not undergo DXA ($p<0.0001$). In the multivariate model an increase in the odds for a fracture was associated with older age, being White, having a prior history of osteoporosis or fracture, were evaluated with DXA.A decrease in the odds for a fracture was associated with having undergone DXA testing (0.70; 95% CI 0.61 – 0.80).
Conclusions: Very few patients with prostate cancer starting ADT undergo DXA despite being at increased risk of fracture. DXA use was associated with socioeconomic status. Our results show that patients who underwent DXA were significantly less likely to have a fracture. Our findings suggest that DXA should be performed in all patients with prostate cancer initiating ADT.
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FRI0532 DUAL ENERGY X-RAY ABSORPTIOMETRY TESTING IN WOMEN WITH BREAST CANCER INITIATING THERAPY WITH AROMATASE INHIBITORS REDUCES SUBSEQUENT FRACTURE RISK

M.A. Ursani[1], M. Suarez-Almazor[2], M. Yang[2], H.-F. Lu[2], H. Zhao[2], L. Elting[2]. *[1]Medicine, Section of Allergy, Immunology and Rheumatology, Baylor College of Medicine; [2]Internal Medicine, Rheumatology, The University of Texas M.D. Anderson Cancer Institute, Houston, United States*

Background: Estrogen receptor positive breast cancer is commonly treated with aromatase inhibitors (AI). A well-known adverse effect of this therapy is osteoporosis and related bone fractures. National guidelines have promoted the use of dual energy X-ray absorptiometry (DXA) for screening purposes.
Objectives: To evaluate the association between use of DXA among women with breast cancer treated with AI enrolled in Medicare, and subsequent fracture risk.
Methods: Retrospective cohort study using the Texas Cancer Registry (TCR) and the National Cancer Institute's Surveillance, Epidemiology and End Results (SEER) data linked with Medicare claims. To help estimate the likelihood of performing a DXA, a multivariable logistic regression model was used. Covariates of age, ethnicity, stage, residence area, and socioeconomic variables were controlled for the analyses. The outcome variable a DXA claim within 12 months after the initiation of the AI therapy. Cox regression model to evaluate time to first fracture after initiation of AI.
Results: The total number of cases within the SEER-Medicare database was 15,350 and in the TCR 4,532. Women aged between 66–74 years and Non-Hispanic white were more likely to get DXA than were Hispanic and Non-Hispanic Black.
In TCR, 2714 patients did not get treatment for osteoporosis in the first 12 months after AI therapy initiation. 2989 patients did not receive treatment for osteoporosis within 12 months of obtaining their first DXA scan. 1330 patients who did not undergo DXA were not treated for osteoporosis; and 1384 patients who underwent DXA got treated for osteoporosis.
The duration of AI treatment was negatively associated with the risk of fracture. Women who received DXA scan showed 11% lower risk of fracture than those who were not scanned (HR 0.89 (0.83, 0.94).
Conclusions: National guidelines suggest to obtain a DXA and start bisphosphonate therapy in female breast cancer patients who are treated with AI therapy. Our data suggests that the majority of women in the TCR and SEER database were not treated for osteoporosis within the first 12 months after initiation of AI therapy. Women who received DXA scan showed a lower risk of fracture than those who were not scanned.
References:
[1] National guidelines suggest to obtain a DXA and start bisphosphonate therapy in female breast cancer patients who are treated with AI therapy. Our data suggests that the majority of women in the TCR and SEER database were not treated for osteoporosis within the first 12 months after initiation of AI therapy. Women who received DXA scan showed a lower risk of fracture than those who were not scanned.
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FRI0533 INCIDENCE AND RISK FACTORS OF OSTEOPOROTIC FRACTURE IN PATIENTS WITH RHEUMATOID ARTHRITIS: A MULTICENTER COMPARATIVE STUDY OF THE FRAX CRITERIA AND WHO CRITERIA

S.T. Choi[1], S.-R. Kwon[2], H.-A. Kim[3], J.-Y. Jung[3], S.-S. Kim[4], S.-H. Kim[5], J.-M. Kim[5], J.-H. Park[1], C.-H. Suh[3]. *[1]Internal Medicine, Chung-Ang University College of Medicine, Seoul; [2]Internal Medicine, Inha University College of Medicine, Incheon; [3]Internal Medicine, Ajou University College of Medicine, Suwon; [4]Internal Medicine, Ulsan University College of Medicine, Gangneung Asan Hospital, Gangneung; [5]Internal Medicine, Keimyung University College of Medicine, Daegu, Korea, Republic Of*

Background: The fracture risk assessment tool (FRAX) criteria and the bone mineral density (BMD) criteria of the World Health Organization (WHO) are widely used for the assessment of osteoporotic fracture. Rheumatoid arthritis (RA) is the only disease parameter for the evaluation of osteoporotic fracture in the FRAX model, unlike the WHO criteria. However, the input for RA is just a dichotomous variable in FRAX model.
Objectives: In this study, we evaluated the incidence and risk factors of osteoporotic fracture in patients with RA through the comparison of the FRAX criteria and WHO criteria.
Methods: This study is a multicenter study, including 479 RA patients in 5 hospitals and 384 healthy controls, between January 2012 and December 2016. All of the RA patients fulfilled the 1987 American College of Rheumatology (ACR) criteria or the 2010 ACR/European League Against Rheumatism (EULAR) criteria for RA. The FRAX criteria for high risk of osteoporotic fracture, which is a 10-year probability of $\geq$20% for major osteoporotic fracture or $\geq$3% for hip fracture, were calculated by the FRAX tool including the BMD values. The classification of osteoporosis, according to WHO criteria were based on T-score $\leq$ -2.5. We assessed various demographic factors, clinical and laboratory findings of RA, and