the baseline - 17.4 ± 10.2 years. All patients retrospectively calculated the 10-year probability of fractures and prognostic model developed by the IR.

Results: According to the Fracture Risk Assessment Tool, 32 (46%) patients had a low risk of osteoporotic fractures, 38 (54%) had a high risk. According to the predictive model of IR 33 (47%) patients had a low risk of osteoporotic fractures, 37 (53%) had a high risk. During the follow-up period, osteoporotic fractures were occurred in 18 (26%) patients: 14 (78%) of them had a high risk of fractures according to the predictive IR model, and 13 (72%) patients - according to the Fracture Risk Assessment Tool. Positive and negative predictive value of the Fracture Risk Assessment Tool was 34% and 84%, respectively, of the predictive model of IR - 38% and 88%, respectively. Prognosis of the predictive model of IR in 73% cases coincided with assessing the 10-year probability of fracture.

Conclusion: The predictive model developed at V.A. Nasonova Research Institute of Rheumatology (Russia) showed a higher sensitivity and specificity in determining the risk of osteoporotic fractures in RA patients vs FRAX algorithm.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1717

POS1109 MULTIVARIATE ANALYSIS OF RISK FACTORS FOR REDUCED BONE MINERAL DENSITY ASSESSED WITH RADIOFREQUENCY ECHOGRAPHIC MULTI SPECTROMETRY (REMS)

Z. Batalov1, M. Nikolov2, N. Nikolov2. 1Medical University of Plovdiv, University Hospital Kaspela, Plovdiv, Bulgaria; 2UMBAL Dr Georgi Stranski, Rheumatology, Ploven, Bulgaria

Background: Radiofrequency echographic multi spectrometry (REMS) is an innovative radiation-free approach for the assessment of bone mineral density (BMD) at axial sites. The principle of this technology is based on the analysis of native raw ultrasonic signals, the so called radiofrequency ultrasound signals, acquired during an echographic scan of the lumbar spine and/or femoral neck [1]. A previous published study showed a high degree of correlation between the T-score values provided by the two techniques-REMS and dual energy X-ray absorptiometry for both lumbar spine and femoral neck [2]. REMS software outputs information about BMD (g/cm2), T-scores, Z-scores [standard deviations (SD)], percentage of body fat and basal metabolic rate (BMR (kcal/daily)] [3].

Objectives: The aim of the current study is to investigate the multivariate significant risk factors for reduced BMD through REMS technology.

Methods: In this study, a total of 273 women with mean age 62 years (yrs.) ± 12 yrs. (range 25-88 yrs.) underwent REMS assessments. Subjects were divided into two groups after acquiring information about the spinal T-scores: 1st group with T-scores > -1 SD and 2nd group with T-scores < -1 SD. Age, weight, height, body mass index (BMI), basal metabolic rate (BMR), body fat and menopausal status were the risk factors included in the multivariate statistical analyses. Binary logistic regression was used to assess which are the significant risk factors for T-score < -1 SD. Youden’s indices were calculated for selecting the cut-off points for each risk factor.

Results: 273 women had mean weight of 70.5 kg ± 15.7 kg (range 39.4-127 kg), mean height 157.1 cm ± 8.8 cm. (range 100-182 cm), and mean body mass index (BMI) 26.8 kg/m2 ± 6.1 kg/m2 (range 14.9-47.9 kg/m2). The mean body fat of the subjects was 37.8% ± 8.8% (range 9-52%) and the mean BMR was 1274.01 kcal/daily ± 163.17 kcal/daily (range 929.7-1908.4 kcal/daily). 260 women the subjects was 37.8% ± 8.8% (range 9-52%) and the mean BMR was 1274.01 kcal/daily ± 163.17 kcal/daily (range 929.7-1908.4 kcal/daily). 260 women

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1866

POS1111 RELIABILITY OF VERTEBRAL FRACTURE ASSESSMENT ON DUAL-ENERGY X-RAY ABSORPTIOMETRY

M. Yasmin1, S. Mariem1, S. Miladi1, A. Fazaa1, E. Fguiri1, L. Soueini1, K. Ouenniche1, S. Kassab1, S. Chekili1, K. Ben Abdelghani1, A. Laatar1, Mongi Slim Hospital, Rheumatology, Tunisia

Background: Vertebral Fracture Assessment (VFA) is a new feature available on modern densitometers. Yet, the assessment of vertebral fracture (VF) status has not become standard practice.

Objectives: Our study aimed to evaluate the reliability of VFA as assessed by a rheumatologist and a radiology technician.

Methods: We conducted a cross-sectional study assessing the performance of low-energy dual energy x-ray absorptiometry (DEXA) for the detection of VF. We selected patients who were assessed for osteoporosis according to screening protocols. Bone mineral densitometry was measured using standard methods over the lumbar spine LoL4, the total proximal femur, and results were expressed as T-scores. All VFA were independently evaluated by 2 experienced readers: a rheumatologist and a radiology technician for the identification of VF (T 4-L4). VF was classified according to the t-score using the Fracture Risk Assessment Tool: grade 1 for an anterior, mid or posterior reduction of 20–25% in vertebral height; grade 2 for a reduction of 25–40% and grade 3 for a reduction of more than 40% in vertebral height. A score for the inter-rater reliability between the readers was expressed using the kappa statistic.

Results: One hundred and sixty-three women were included with a mean age of 66.9 ± 9.5 years [46.7-83] years. There was a female predominance (91%). Nearly half of patients had osteopenia (48.9%), 27.7% had osteoporosis and 23.4% had a normal bone mineral density. On VFA scans, the non-visible vertebral was mostly located in the upper thoracic spine (60%). The mean number of VF was 1.2 [0-3] for both readers. According to the doctor’s evaluation, 25% of patients had at least one VF, of which 75.9% had an lumbar grade 1, 17.2% had a lumbar grade 2, and 6.9% had a VF grade 3. According to the technician evaluation, at least oneVF was found in 36% of patients. A grade 1 was assessed in 91.7% of cases, a grade 2 in 8.3% of patients but no VF grade 3 was assessed. A kappa score for the inter-rater reliability between the readers for VFA was 0.545 (p=0.000). The overall agreement by grade between the readers was 0.785 (p=0.000). The exclusion of non-visible vertebra resulted in a better agreement (k=0.835). Further analysis excluding vertebra T4 to D10, revealed a very good agreement (k=0.9).

Conclusion: Our study showed a low agreement between the readers on VFA and a better agreement when non-visible vertebral were excluded. Thus, caution should be advocated when relying exclusively on this device.

Disclosure of Interests: None declared.

DOI: 10.1136/annrheumdis-2021-eular.1866

POS1112 DIAGNOSIS OF OSTEOPOROSIS USING RADIOFREQUENCY ECHOGRAPHIC MULTI SPECTROMETRY (REMS) AT THE LUMBAR SPINE IN PATIENTS WITH DIFFERENT BODY MASS INDEX

B. Corten1, E. Dennison2, A. Díez-Perez3, M. Locquet4, M. Muratore5, D. Ojevi Crespo6, X. Nogués7, M. Lind2, M.L. Brand1,6,7. 1University of Lille, Department of Rheumatology and EA 4490, Lille, France; 2Southampton General Hospital, University of Southampton, MRC Lifecourse Epidemiology Unit, Southampton, United Kingdom; 3IMIM (Hospital del Mar Medical Research Institute), Centro de Investigación Biomédica en Red en Fragilidad y Envejecimiento Saludable (CIBERFES), ISCIII, Musculoskeletal Research Group, Barcelona, Spain; 4University of Ljubljana, Department of Public Health, Epidemiology and Health Economics, Ljub, Belgium; 5Vito Fazzi Hospital, ASL-LE, O.U. di Rheumatology, Lecce, Italy; 6FIRM0 Foundation, Florence, Italy; 7The National Observatory on Fragility Fractures, Florence, Italy

Background: In recent years, the technology based on the analysis of raw ultrasound signals, Radiofrequency Echographic Multi Spectrometry (REMS), has not become standard practice.

Objectives: To develop a specific REMS-based risk prediction model for BMD, corresponding to T-score < -1 SD. Postmenopausal women over age of 65 yrs. with BMI lower than 28.63 kg/m2 and BMR <1331.75 kcal/daily were at the highest risk for T-score < -1 SD of the lumbar spine.

REFERENCES:

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.

Disclosure of Interests: None declared.