medication use for RA and osteoporosis, and then evaluated the incidence and risk factors for osteoporotic fracture.

Results: The mean age of RA patients was 61.7±11.9 years, and 426 patients were female (88.9%) with 353 postmenopausal women (82.9%). The BMD score of L-spine in RA patients was significantly lower than that in healthy control (-2.21±1.41 vs. 0.97±0.11, p<0.001). Osteoporotic fracture was detected in 81 (16.9%) patients with RA. In RA patients, 226 (47.2%) patients met the FRAX criteria for high risk of osteoporotic fracture, and 240 (50.1%) patients satisfied the WHO criteria. The result of the FRAX criteria was affected by the female sex, menopause, smoking, drinking, higher dose of glucocorticoid (≥5mg/day), vitamin D use, calcium use and proton pump inhibitor (PPI) use (p<0.05). In multiple linear analysis, the FRAX score to 10-year probability of ≥3% of hip fracture was associated with age (β=0.384, p<0.001), body weight (β=-0.110, p=0.038), erythrocyte sedimentation rate level (β=0.125, p=0.010), glucocorticoid dose (β=0.105, p=0.024), and PPI use (β= -0.123, p=0.010). The independent risk factors for FRAX criteria were age (OR 1.160, p<0.001), female sex (OR 3.942, p=0.010), body mass index (BMI) (OR 0.869, p=0.001), glucocorticoid dose (OR 1.167, p=0.025) and PPI use (OR 2.552, p=0.019), and those for WHO criteria were age (OR 1.021, p=0.040), glucocorticoid dose (OR 1.109, p=0.046) and smoking (OR 2.924, p=0.031).

Conclusions: Osteoporotic fractures were found in 16.9% of RA patients. The proportion of patients with high risk of osteoporotic fracture was 47.2% in the FRAX model and 50.1% in the WHO model. Age, female sex, lower BMI, higher dose of glucocorticoid, PPI use and smoking were independent risk factors for osteoporotic fracture in RA patients.

Disclosure of Interest: None declared

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FRI0534   **REPEATED OSTEOPOROSIS SCREENING IN RHEUMATOID ARTHRITIS: ARE WE COMPLYING WITH GUIDELINES?**

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Background: Osteoporosis rates are higher in patients with rheumatoid arthritis (RA). Patients with RA diagnosed with osteoporosis have a 30% increased risk of major fracture [1]. Monitoring response to osteoporosis treatment is recommended however there is no consensus on how frequently this should be performed. The International Society for Clinical Densitometry (ISCD), National Osteoporosis Foundation (NOF) and the American Association of Clinical Endocrinologists (AACE) all recommend repeat Bone Mineral Density (BMD) assessment within two years after initiating osteoporosis treatment to assess response to treatment [2–4]. Furthermore, the NOF and AACE recommend repeat screening every two years after diagnosis [3,4].

Objectives:
- To identify patients with RA and osteoporosis
- To identify if international guidelines are being achieved for reassessment of BMD within two years of treatment commencement in keeping with international guidelines.

Methods: A database of patients with a diagnosis of RA and osteoporosis who attend the Rheumatology department of the Midlands Regional Hospital, Tullamore since January 2013 was reviewed. Outpatient summaries, date of diagnosis, radiology investigations (DEXA scanning), pharmacological treatment and follow up investigations and treatment were documented.

Results: As of August 2016, 770 patients were identified as having RA. 90% of patients had attended the department since 2013. 117 (16.7%) patients were identified as having osteoporosis. Of these, 52.14% of patients were prescribed bisphosphonate therapy, 31.62% denosumab, 9.4% calcium/vitamin D alone, 0.85% other treatment (teriparatide/strontium) and 5.1% were on no treatment. Only 11.9% of these patients had a repeat DEXA scan within two years of starting or changing treatment. 11.1% of patients had repeat DEXA scans booked. The average length of time since a patient's most recent DEXA is 35 months.

Conclusions: Repeat DEXA scanning to assess the response to osteoporosis treatment in people with RA within the timeframe recommended by international guidelines has not been achieved. Patients who fail to respond to osteoporotic treatment are not being identified in a timely manner and therefore are at an increased risk of fractures. The results of this audit will make us more vigilant to identify those patients who are treated for osteoporosis that need repeat DEXA scanning to ensure that treatment is efficacious.

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FRI0535   **STRONG INFLUENCE OF VITAMIN D STATUS ON BONE MINERAL DENSITY AND BONE TURNOVER MARKERS DURING WEIGHT RESTORATION IN PATIENTS WITH ANOREXIA NERVOSA**

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Background: Anoressia nervosa (AN) is associated with an increased risk of low bone mineral density (BMD) and fractures as a consequence of an inadequate bone mass peak in adolescence and bone loss in young adulthood. Moreover, recently we have showed that vitamin D (25-OH-D) deficiency is widespread in untreated patients with AN, and there is a strong positive relationship between vitamin D status and BMD in AN. However, if vitamin D status could affect the efficacy of weight restoration in improving bone health in patients with AN is currently unknown.

Objectives: Our aim was to investigate the potential role of vitamin D status in determining the efficacy on bone mineral density (BMD) of weight restoration in AN.

Methods: Bone mineral density assessed by dual-energy x-ray absorptiometry (DXA), vitamin D, N-propeptide of type I collagen (P1NP), C-terminal telopeptide of type I collagen (CTX), intact parathyroid hormone (PTH) were evaluated before and after a 20-weeks intensive weight restoration therapy in patients with anorexia nervosa and secondary amenorrhoea for at least 6-months. The subjects were not receiving medications known to affect bone metabolism.

Results: Ninety-one female patients aged 13–45 years old were evaluated, baseline weight 39.4±5.6 kg and BMI 15.1±1.6 kg/m². Weight and BMI were significantly increased in all patients after treatment. The mean BMD values were significantly increased only at the spine (1.0±3.6%, p=0.009). A positive trend was demonstrated between post-treatment 25-OH-D and BMD changes at the spine (p=0.032). However, only the patients with post-treatment 25-OH-D ≥30 ng/ml showed significantly higher increases in BMD at the spine (2.5% vs 0.5% respectively for 25-OH-D ≥30 ng/ml and 25-OH-D <30 ng/ml, p<0.03; Figure 1). Both P1NP and PTH increased, whereas a significant decrease was found in 25-OH-D and CTX (p<0.05). Post-treatment CTX levels were inversely correlated with spine BMD. A positive relationship was found between changes in weight and P1NP (R2 =0.27).
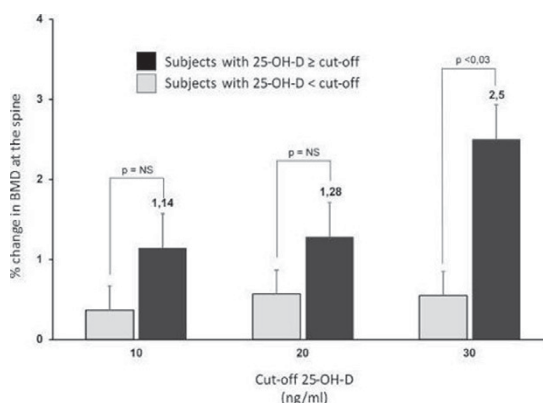
Conclusions: In anorexia nervosa, a hypovitaminosis D status counteracts the efficacy of the weight restoration treatment because of an increase in bone resorption mediated by a secondary hyperparathyroidism. Our study strongly support the use of vitamin D supplements for bone health in anorexia nervosa.

Disclosure of Interest: None declared

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FRI0536   **THE METHOD OF CALCULATING THE PROBABLE VALUE OF T-SCORE IN PATIENTS WITH MULTIFOCAL ATHEROCALCIFICATION**

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Objectives: To determine probable value of T-score for early detection of osteopenic syndrome in patients with multifocal atherosclerosis based on the multislice computed tomography (MSCT) evaluation of vascular calcification.

Methods: 186 male (60±6,7 years) with multifocal atherosclerosis. All the patients underwent the measurement of BMD with X-ray absorptiometry. Moreover, calcium scores (CS) of coronary and brachiocephalic arteries were obtained using Agatston method.

Results: T-score values of lumbar vertebrae -1.07 [-1.54;-0.40], T-score of the proximal femur -2.01 [-2.71;-1.49]. Calcification of the coronary arteries: CS=471.8 [118.2;916,8] and carotid arteries: CS=113.9 [44.5;300.8]. Factors that affect the