Lumbar OP was associated with the female sex (OR=3.6). The FN T-score (and, to a lesser extent, lumbar T-score), showed a correlation with age ($r=-0.515$, $p<0.01$). No differences were found in the mean values of BMD, T-score y Z-score of FN and LS between positive or negative patients for FR or ACPA (t-student), neither between their possible combinations (one-way ANOVA). Association between positivity of RF, ACPA or their combinations and T-score <-1 (osteopenia) or T-score <-2.5 (OP) in LS or FN were not found. A negative weak correlation was found between the RF and lumbar BMD values (-0.121 , $p=0.04$) and a positive weak correlation between ACPA and FN (0.136 with BMD, 0.131 with T-score and 0.138 with Z-score; $p<0.05$ for all).

	Patients n (%)	BMD FN g/cm ² mean(SD)	BMD LS g/cm ² mean(SD)	T-score <-1 n (%)	T-score <-2.5 n (%)
Total	291	0805 (0,16)	1063 (0,21)	226 ^(76,9)	81 ^(27,6)
FR+	229	0806 (0,15)	1061 (0,21)	175 ^(76,4)	62 ^(27,1)
ACPA+	194	0808 (0,15)	1065 (0,21)	151 ^(77,0)	49 ^(25,0)
FR+y ACPA+	185	0813 (0,14)	1065 (0,22)	143 ^(76,5)	48 ^(25,7)
FR+ ó ACPA+	51	0767 (0,21)	1049 (0,20)	40 ^(78,4)	15 ^(29,4)
FR- y ACPA-	56	0815 (0,16)	1074 (0,18)	43 ^(76,8)	18 ^(32,1)

Conclusions: OP was very common in our RA population, especially in women and elderly. Any association was demonstrated between OP and the presence/titer of autoantibodies (RF and ACPA) and low dose of corticosteroids treatment.

Disclosure of Interest: None declared

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AB1006 BONE STATUS OF PATIENTS TREATED WITH ANTI-AROMATASE: RESULTS AT ONE YEAR

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Background: First cancer in Algeria, first cause of cancer mortality in women. One in 10 women will develop breast cancer in her lifetime. Its incidence is increasing with 55.8/100000 inhabitants. The majority of these cancers are hormone-dependent. The bone loss induced by anti-aromatase (AA) leads to an increase in bone resorption with bone loss 2 to 4 times greater than the physiological loss. Randomised controlled trials (RCTs) including women under AA for 5 years have suggested an increased risk of fracture of 18% to 20% ie 1 in 5 women will experience this risk.

Objectives: The aim of our work is to describe the initial bone status and after one year of follow-up in patients starting an anti-aromatase.

Methods: Three hundred and twenty seven (327) patients were recruited from the oncology department of Tizi Ouzou University Hospital, 292 patients were analysed in the initial phase of the study and only 250 patients were evaluated at one year. Of these patients, 157 non-osteoporosis patients received calcium and vitamin d-related health care and 93 patients were osteoporotic and treated with calcium and vitamin D bisphosphonates. Inclusion criteria: Women with oestrogen receptor breast cancer Treatment with anti-aromatase indicated: a- Immediately after conventional breast treatment b- Tamoxifen relay- Criteria for non-inclusion: Bone metastases

Methods: Clinical evaluation: screener risk factors for osteoporosis and fractures. Biological Evaluation: Calcium, Phosphoremia, 25 Hydroxy Vitamin D. Radiological assessment: chest radiograph (profile) or IVA (vertebral fracture assessment) looking for vertebral fractures Lumbar and femoral bone densitometry (HOLOGIC QDR)

Results: The mean age of the patients is 56.8 ± 7.3 years, mean body mass index is 27.4 ± 2.8 kg/m². 48% of patients received chemotherapy. The anti-aromatases were given as follows: Anastrozole in 64%, Letrozole in 14% and Exemestane in 11%. At baseline assessment n=292, 31.6% of patients had densitometric osteoporosis (T score <-2) in the lumbar spine and 9.5% in the femoral neck. 37 patients have a history of peripheral fracture. Six patients have at least one vertebral fracture. The average level of vitamin D is 15.2 ± 3.5 ng/L. 6 - 29 283 patients or 97% have a deficiency in vit D (<30 ng/L). After one year of follow-up, patients without osteoporosis (n=157), annual bone loss is 1.5% at the lumbar spine and 1.24% at the hip. 16 patients became osteoporotic. Four patients developed a new vertebral fracture. The one-year follow-up result in osteoporotic patients treated with bisphosphonates with calcium and vitamin D (n=93) had stable bone mineral density (0.3% non-significant bone loss). 57% of patients still have vitamin D insufficiency and two patients had a new vertebral fracture.

Conclusions: Anti-aromatases lead to an increased risk of osteoporosis. It is important to evaluate the fracture risk of breast cancer patients through a rheumatology consultation to find all the risk factors, to detect frequent calcium and vitamin D deficiencies and to treat osteoporosis.

Disclosure of Interest: None declared

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AB1007 SEASONAL VARIATIONS OF 25-HYDROXYVITAMIN D3 LEVELS AND ITS RELATION TO PARATHYROID HORMONE LEVELS

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Objectives: To analyse the relationship between 25-hydroxyvitamin-D3 and parathyroid hormone levels and to determine its variation between the different seasons of the year.

Methods: An observational descriptive study was carried out, collecting and analysing 25-hydroxyvitamin-D3 (25OH-D3) and parathyroid hormone (PTH) serum levels of patients from January to December of 2017. The frequencies distribution analysis of both variables was compared and Pearson's correlation coefficient (PCC) was used to analyse linear relationship between them. The results were classified by date in four seasons: winter, spring, summer, and autumn, assessing the mean seasonal oscillations of each variable and calculating correlation in each case. Different levels of 25OH-D3 were evaluated in order to identify differences in the grade of correlation.

Results: Serum samples from 6265 patients were recollected. 59% of the patients had 25OH-D3 levels lower than 25 ng/ml. Pearson's correlation coefficient between both variables was -0.159 ($p<0.01$). The mean values of 25OH-D3 were calculated for each seasonal period, establishing a mean level of 23 ng/ml for winter, 25 ng/ml for spring, 31 ng/ml for summer and 29 ng/ml for autumn. Regarding PTH levels, the mean values for each season were 108 pg/ml, 101 pg/ml, 86 pg/ml and 84 pg/ml from winter to autumn respectively. PTH/Vitamin D correlation was also assessed for each period: Pearson's correlation coefficient during winter was -0.08 ($p<0.01$), for spring -0.249 ($p<0.01$), for summer -0.21 ($p<0.01$) and for autumn -0.19 ($p<0.01$). At last, correlation calculated with deficiency levels of 25OH-D3 (<30 ng/ml) was -0.18 ($p<0.01$), and with levels inferior than 10 ng/ml was -0.12 ($p<0.01$).

Abstract AB1007 – Figure 1

Conclusions: Linear correlation between levels of 25OH-D3 and PTH could not be established in our study, not even using levels classified as vitamin D deficiency. 25OH-D3 levels tended to increase from winter to summer whereas PTH levels decreased inversely during these seasons, without any linear correlation.

Disclosure of Interest: None declared

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AB1008 COMPARISON OF BONE MINERAL DENSITY BETWEEN RHEUMATOID ARTHRITIS PATIENTS AND HEALTHY INDIVIDUALS OVER SEVEN YEARS FROM THE TOMORROW STUDY

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Background: Despite advances in treatment, rheumatoid arthritis (RA) remains a key cause of secondary osteoporosis and is also a risk factor for fragility fracture. We have previously reported that bone mineral density (BMD) was lower in patients with RA than in healthy individuals (HI) and examined changes in BMD over 3 years¹.

Objectives: To observe BMD changes over 7 years and identify factors that affect BMD changes in patients with RA.

Methods: We analysed data from the TOMORROW study (UMIN000003876), a prospective cohort for patients with RA and age- and sex-matched HI. BMD was measured at three parts (whole body, lower limb, lumbar spine) using dual-energy X-ray absorptiometry (DXA). We compared the percentage change in BMD (%Δ BMD) at the three parts in RA and HI from 2010 to 2017. Factors affecting %Δ BMD in RA were analysed.

Results: Participants comprised 172 HI and 119 RA, after excluding those who dropped out (HI, n=21; RA, n=19) or underwent implant surgery (HI, n=12; RA, n=60). Height and weight reduced significantly over 7 years ($p<0.001$ each) in both groups (table 1). The Δ BMDs of RA were -2.6% (whole body), -3.6% (lower limb), and 1.8% (lumbar spine), compared to -2.0% , -2.7% , and 0.6% , respectively, for HI. No significant differences in BMD for the whole body or lower limb were seen during 7 years, while BMD of the lumbar spine was significantly increased in both groups ($p<0.0001$). No significant differences between groups were identified. In patients with RA, DAS28ESR improved significantly over 7 years ($p=0.008$; table 1) and Δ BMD of the lumbar spine correlated significantly with cumulative period of treatment for osteoporosis ($r=0.341$, $p<0.001$). The cumulative period of osteoporosis treatment was identified as a regulatory factor for increasing BMD of the lumbar spine (odds ratio: 1.36; $p=0.003$) adjusted by age and sex (table 2). However, cumulative period of biologics, change of glucocorticoid and DAS28ESR were not detected as factors affecting BMD by logistic regression analysis.

Abstract AB1008 – Table 1. Changes in characteristics over 7 years

Parameter	Total population (n=291)	Healthy individuals (n=172)	Patients with RA (n=119)	P value
Age 2010	56.6 $\pm$ 12.7	57.1 $\pm$ 12.3	55.9 $\pm$ 13.3	0.431
Height 2010 (cm)	157.3 $\pm$ 7.8	157.9 $\pm$ 7.1	156.4 $\pm$ 8.7	0.107
Height 2017 (cm)	156.1 $\pm$ 8.1	156.8 $\pm$ 7.3	155.2 $\pm$ 9.1	0.107
Body weight 2010 (kg)	56.1 $\pm$ 10.0	56.5 $\pm$ 10.3	55.6 $\pm$ 9.7	0.418
Body weight 2017 (kg)	55.1 $\pm$ 10.4	55.8 $\pm$ 10.7	54.0 $\pm$ 9.9	0.145
DAS28 ESR 2010	-	-	3.17 $\pm$ 1.27	-
DAS28 ESR 2017	-	-	2.86 $\pm$ 1.24	-

Abstract AB1008 – Table 2. Factors associated with increased BMD of the lumbar spine in patients with RA

Factor	Odds ratio	95% CI	P value
Period of osteoporosis treatment	1.36	1.11–1.66	0.003
Period of biologics	1.02	0.92–1.13	0.683
Change of glucocorticoid	1.01	0.83–1.23	0.933
Change of DAS28ESR	1.04	0.76–1.44	0.798

Conclusions: BMD of the whole body and lower limb tended to decrease slightly over 7 years in both groups. However, BMD of the lumbar spine increased significantly. Continued osteoporosis treatment is important for increasing BMD at the lumbar spine in patients with RA.

REFERENCE:

- [1] Use of bisphosphonate might be important to improve bone mineral density in patients with rheumatoid arthritis even under tight control: the TOMORROW study. *Rheumatol Int* 2017;37:999–1005.

Disclosure of Interest: None declared

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AB1009 CONCORDANCE BETWEEN VERTEBRAL FRACTURE ASSESSMENT AND CONVENTIONAL RADIOGRAPHY IN DETECTION OF VERTEBRAL FRACTURE

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Background: Vertebral fractures (VFs) are considered as severe fractures, but often asymptomatic. The VFA (Vertebral Fracture Assessment) performed at the same time as the bone mineral density (BMD) measure, allows the detection of these fractures. Nevertheless, standard radiography remains the reference technique in the diagnosis of VFs.

Objectives: Our objective is to compare the contribution of VFA and the standard thoraco-lumbar spine X-ray in the diagnosis of VFs in patients at risk.

Methods: This is a cross sectional study, including women referred in rheumatology department for measure of bone mineral density (BMD). During the same exam, we practiced a vertebral fracture assessment (VFA) image. An X-Ray of dorsal and lumbar spine was done. The interpretation of the two methods was to diagnose asymptomatic vertebral fractures (VFs) which are defined according to Genant's semi-quantitative classification.

Results: The mean age of our patients (31 patients) was 61.3 $\pm$ 11.3 years^{38–82} with an average body mass index (BMI) of 27.65 $\pm$ 4.8 Kg/m²; [17.8–40.1]. According to the WHO classification, 17 women (54.8%) had osteoporosis, 10 (32.3%) had osteopenia and 4 (12.9%) had normal BMD. The indications for VFA practice were: age over 60 years with T score $\leq$ -2 SD, historical height loss $\geq$ 4 cm, a

history of VF, a long-term corticosteroid therapy, and aromatase inhibitors therapy in 25.8%, 12.9%, 6.5%, 45.2% and 9.7% respectively.

VFA objectified 15 VFs in 6 women (19.4%) which were grade 1, 2 and 3 in respectively 2, 5 and 8 vertebrae. However plain X ray showed 21 VFs in 10 women (32.2%) which were grade 1, 2 and 3 in respectively 5, 7 and 9 vertebrae. The concordance between the two methods was found in 87.1% of cases, with a coefficient of Cohen (kappa) at 0.76 (strong agreement). A significant correlation ($p=0.000$) was found between the two methods concerning the detection of VFs grade II and III.

Conclusions: Our study proved the good agreement between the VFA and the standard X-ray in the detection of VFs. This shows the sensitivity of this technique which has the advantages of low cost and less irradiation.

Disclosure of Interest: None declared

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AB1010 RISK OF INFECTION IN PATIENTS WITH RHEUMATOID ARTHRITIS TAKING DENOSUMAB CONCURRENT WITH BIOLOGIC THERAPY

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Background: Apart from Denosumab effects on bone, there are some promising data on its inhibitory effect on structural damages in patients with Rheumatoid Arthritis (RA).¹ Despite some clinical concerns on its potential harm for increasing risk of infections, Denosumab is officially approved for the treatment of postmenopausal osteoporosis. Still there are even greater debates on its use and predisposing patients to infection in cases receiving immunosuppressive therapy.² Considering the importance of infection in such cases, lack of sufficient convincing safety data has prevented, at least in part, the current guidelines to recommend Denosumab in treatment of osteoporosis in patients on immunosuppressive agents.³

Objectives: We aimed to compare the infection risk in patients with RA taking biologic Disease Modifying Anti Rheumatic Drugs (bDMARDs) alone or concurrent with Denosumab.

Methods: Using records from the files covering January 2013 to May 2016, a retrospective comparative study was performed on two groups of postmenopausal RA patients, group A including 40 patients receiving Denosumab+bDMARDs (Etanercept, Rituximab, Adalimumab), and group B consisting of 44 patients receiving bDMARDs alone. Patients were included if the current therapeutic regimen was used for at least one year. All patients were also on a daily dose of prednisolone (2.5–7.5 mg) and folic acid, and a weekly dose of Methotrexate. Occurrence of serious bacterial or viral infections was extracted from recorded files of the patients' routine visits.

Results: The mean age of the patients was 63.1 $\pm$ 12 years and 62.6 $\pm$ 11.7 years in group A and B, respectively ($p=0.42$). The mean disease duration was 7.2 $\pm$ 1.9 years and 7.1 $\pm$ 1.6 years in group A and B, respectively ($p=0.39$). The mean duration of biologic use was 15.4 $\pm$ 3.2 months and 15.8 $\pm$ 4.6 months in group A and B, respectively ($p=0.28$). Type 2 diabetes mellitus was present in four and five patients of group A and group B, respectively ($p=0.35$). In total, four infections occurred in our study groups, two in each group ($p=0.94$). In group A, the first one was an osteomyelitis of the first metatarsal bone in a diabetic patient receiving Etanercept+Denosumab. The second one was a herpes zoster infection in a patient receiving Adalimumab+Denosumab. In group B two cases of herpes zoster were recorded in two patients receiving Adalimumab.

Conclusions: This study showed that the potential infection risk of concurrent use of Denosumab and bDMARDs was not significantly different from using bDMARDs alone. Based on this finding, Denosumab seems safe in the treatment of osteoporosis in RA patients receiving bDMARDs.

REFERENCES:

- [1] Hasegawa T, Kaneko Y, Izumi K, Takeuchi T. Efficacy of denosumab combined with bDMARDs on radiographic progression in rheumatoid arthritis. *Joint Bone Spine*. 2017;84(3):379–80.
- [2] Miller PD. A review of the efficacy and safety of denosumab in postmenopausal women with osteoporosis. *Therapeutic advances in musculoskeletal disease*. 2011;3(6):271–82.
- [3] Buckley L, Guyatt G, Fink HA, Cannon M, Grossman J, Hansen KE, et al. 2017 American College of Rheumatology Guideline for the Prevention and Treatment of Glucocorticoid-Induced Osteoporosis. *Arthritis Rheumatol*. 2017;69(8):1521–37.

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