metabolism were excluded. Statistical analysis included a descriptive study of the variables to assess the association between the incidence of fractures and various risk factors, as well as univariate and multivariate Cox regression analysis.

Results: 128 patients with osteoporosis were studied, of which 19 (14.7%) suffered an osteoporotic fracture during the follow-up. Bivariate analysis showed in the group of patients with fractures a higher proportion of smoking patients ($p = 0.004$), osteoporosis treatment ($p = 0.005$) and a femoral neck T-score lower at the beginning of the drug holidays period -2.07 (0.68) vs -1.58 (0.63), $p = 0.008$.

In addition, there was a higher proportion of patients with fracture with moderate risk before the start of the drug holidays period ($p = 0.007$). The fracture survival curves were lower in patients older than 75 years ($p = 0.04$). When applying the same treatment, for each year increase, the risk of fracture was increased by 6% ($p = 0.04$), while, for the same age, this risk was increased 4.33 times in patients who were treated with Risedronate versus those with Alendronate ($p = 0.05$).

The multiple regression analysis showed that vertebral fracture was independently associated with Tabaco (HR 4.28 $p=0.047$).

Conclusion: Based on our results, it would be useful to follow closely those patients during drug holidays period who are smokers, older than 75 years, with osteoporosis treatment, who present a low femoral neck T-score and/or have been previously treated with Risedronate.

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AB0819 HANDGRIP STRENGTH PREDICTS HIGH FRACTURE RISK IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

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Background: Accumulating evidence has revealed that the risk of osteoporosis related fractures is significantly increased in type 2 diabetes mellitus (T2DM) patients in comparison with healthy controls. Dual X-ray Absorptiometry (DXA) derived bone mineral density (BMD) is not completely useful to discriminate at risk patients.

Objectives: To find a valuable clinical tool that is helpful to identify T2DM subjects with poor bone health, finally preventing fragility fractures.

Methods: In a setting of Caucasian subjects with T2DM, anthropometric data and information about metabolic control and diabetic complications were recorded. Handgrip strength by dynamometer, FRAX derived 10-years probability of major osteoporotic fractures and hip fractures were also assessed. Bone evaluation was performed by a dual-energy X-ray absorptiometry (DXA) densitometer at the lumbar spine (L1-L4) and at the femoral neck; based on specific software, the trabecular bone score (TBS) was calculated. Lateral scan of thoracic and lumbar spine was assessed to investigate morphometric vertebral fractures (Vfx).

Results: 29 patients (female 65%) [median age 67 (60 to 70)] with T2DM were considered. Morphometric vertebral fractures were detected by DXA in 17% of patients without any gender differences (males vs. females, $p=0.6$). The median ten years probability of fractures was 8.1% and 2.3% as for major osteoporotic or hip fracture respectively. Median femoral neck T-score value $[-1.1$ SD $(-1.8$ to $-0.5)$] was indicative of a slight osteopenia while lumbar spine T-score was even in the normal range $[-0.8$ SD $(-1.5$ to $-0.1)$]. The median TBS value was 1.28 (1.2 to 1.31) and TBS was positively associated with BMD at lumbar spine and femoral neck. Median handgrip strength value was 22.3 kg (18.9 to 31.3). At multiple regression analysis, handgrip strength predicted both lumbar ($\beta = 0.009$, SE 0.0034, $p=0.01$) and femoral neck BMD values ($\beta = 0.006$, SE 0.002, $p=0.01$). Age ($\beta = -0.008$, SE 0.002, $p=0.007$) and handgrip strength ($\beta = 0.01$, SE 0.002, $p=0.0001$) were also independently

associated with TBS score, after correcting for mean HbA1c values and time since T2DM diagnosis.

Conclusion: Handgrip strength may be a reliable tool to screen for bone fragility in T2DM.

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AB0820 COGNITIVE IMPULSIVITY CORRELATES WITH BONE MINERAL DENSITY

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Background: Cognitive impairment is known to be associated with low bone mineral density (BMD) and low levels of BMD have been associated with increased rates of progression from mild cognitive impairment to Alzheimer's disease and with the onset of episodic verbal learning deficit.

Objectives: The potential involvement of executive functions impairment on BMD is still unclear. The aim of this study was to investigate the correlations between cognitive impulsivity, BMD and fall risk.

Methods: Cognitive impulsivity was measured by Stroop Color and Word Test (SCWT) administration in a setting of 40 consecutively recruited postmenopausal women referring to a outpatients clinic for the evaluation of fracture risk. SCWT is a neuropsychological test able to assess the ability to inhibit cognitive interference: during the administration, women were required to quickly read three different tables of which two represented the "congruous condition" in which participants were invited to read names of colors printed in black ink and name different color patches. In the third table, named "incongruous condition", color-words were printed in inconsistent color ink (e.g. the word "red" is printed in green ink) and participants were required to name the color of the ink instead of reading the word. Women with Mini Mental State Examination (MMSE) score < 24 , known neurologic or psychiatric disorders, history of significant hearing or visual impairment, or significant physical disability, history of uncontrolled diabetes and abnormal thyroid function, cancer, heart, respiratory, kidney or liver failure were excluded. BMD was measured at lumbar spine and femoral site by a DXA densitometer (Hologic Discovery). History of falls in the previous 12 months was recorded

Results: Cognitive impulsivity, as highlighted by making errors at the SCWT, was significantly associated with lumbar spine and femoral neck T-score ($r = -0.39$, $p = 0.01$ and $r = -0.43$, $p = 0.008$; respectively). MMSE score was not associated with T-score values, neither at lumbar spine ($r = 0.09$, $p = 0.5$) nor at femoral neck ($r = 0.2$, $p = 0.21$); differently MMSE score was significantly associated both with Stroop test error ($r = -0.34$, $p = 0.02$) and time interferences ($r = -0.39$, $p = 0.01$). Furthermore, time interference was positively associated with the self-reported history of falls ($r = 0.342$; $p = 0.031$).

Conclusion: Cognitive impulsivity was significantly associated with BMD values and higher prevalence of falls in postmenopausal women. It could be considered as a possible clinical risk factor for osteoporotic fractures.

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AB0821 APPRECIATION OF OSTEOPOROTIC TREATMENT COMPLIANCE WITH ALENDRONATE 70MG ORALLY

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Background: Patients suffering from osteoporosis (OP) don't have the opportunity to enjoy from an accurate and concrete parameters response to OP treatment. They therefore have no palpable evidence of the favorable effect generated by anti-osteoporotic treatment (AOT), given the silent nature of the pathology. That is way we see the non-compliance with treatment in some patients.

Objectives: It was essential to estimate the extent of the lack of compliance with AOT in order to deduce the factors related to this deficiency in order to reduce the size of the problem.

Methods: Its a Descriptive cross study performed in all patients over 38 years for both sexes and that exhibit post menopausal or corticosteroid-induced OP justifying AOT orally (alendronate 70mg orally per week) observed over a period of at least 6months.

Results: We collected data of 153 patients, in 9 out of 10 cases this was a woman, the mean age was 59.3 ± 8.1 years, the average duration of gain of treatment was 32.2 ± 18.2 months, 3 of 5 patients believe that treatment is for musculoskeletal pains, 1/3 of respondents confess not to take their weekly treatment regularly, regular physical activity was performed by only 21% of patients, the factors related to non-compliance were : lack of education ($p = 0, 032$) and sedentary life-style ($p = 0, 044$).

Conclusion: OP is unfortunately underestimated by both patients and physicians, and its short- and long- term repercussions are often minimized. Our study has shown that the various measures required in its management are poorly followed by patients despite their proven effectiveness in reducing fractures. One in three patients in ours ample do not follow their treatment properly. Therapeutic education seems to be the answer to overcome this lack of adhesion.

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AB0822 VITAMIN D (25OHD) IN PATIENTS WITH CHRONIC RHEUMATIC DISEASES RECEIVING TREATMENT WITH ADALIMUMAB. DESCRIPTIVE STUDY OF A COHORT

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Background: Patients with chronic rheumatic diseases (CRD) have lower levels of 25OHD, inverse correlation has been describe and greater severity between the different CRD with 25OHD deficit. Most scientific societies recommend levels > 30 ng/mL. Patients with refractory disease to conventional therapy have a higher inflammatory load, require optimal levels of 25OHD and often needs biological disease-modifying antirheumatic drugs (bDMARD) in order to prevent structural damage.

Objectives: The aim of this study was to describe the epidemiological, clinical and therapeutic characteristics of patients receiving Adalimumab (ADL) in which 25OHD levels were determined in 2018.

Methods: Transversal, retrospective study in a hospital setting. We analyzed data from patients included in a study to determine levels of ADL, in whom the serum level of 25OHD was determined at least once during the last year. Among 104 patients, 74 with 25OHD determination were included.

Results: Seventy-four patients selected, 45.9% were men and 54.1% women. The mean age was 54.9 years ($SD \pm 13.6$). 41.9% (31) had Rheumatoid Arthritis, 36.5% (27) Spondyloarthritis, 17.6% (13) Psoriatic Arthritis and 4.1% (3) Juvenile Idiopathic Arthritis. 35.1% (26) had deficit (< 20 ng/mL) of 25OHD, 31.1% (23) insufficiency (20-30 ng/mL) and only 33.8% (25) optimal levels (> 30 ng/mL). The 62.2% (46) of the patients received oral supplementation, of these 67.4% maintained levels > 20 ng/mL and 32.6% < 20 ng/mL. 37.8% (28) did not receive supplementation, despite this 60.7% within this group had levels > 20 ng/mL. No statistical differences were found regarding vitamin D deficit and oral supplementation ($p > 0.05$).

13.5% (10) of the patients also had Osteoporosis (OP); in this group 6 had deficit of 25OHD, 1 insufficiency and only 3 optimal levels, all of

them received 25OHD supplementation. No differences between the groups in relation to the DMARD treatment.

Conclusion: Vitamin D levels were determined in 71.2% of patients and not in all of them as it would be advisable. Among the patients with 25OHD determination, 62.2% received oral supplementation, however only 33.8% of the patients reached optimal levels (> 30 ng/mL) without statistical differences regarding supplementation. 13.5% of the patients who received supplementation also had OP.

Despite the weakness of the study in terms of design and sample, most patients did not reached optimal levels of 25OHD; we can assume that it is necessary to obtain levels of 25OHD > 30 ng/mL in all patients, with adequate supplementation if necessary due to the positive effects known in CRD.

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AB0823 TRABECULAR BONE SCORE AT LUMBAR SPINE IS ASSOCIATED WITH QUANTITATIVE ULTRASOUND MEASUREMENTS AT PHALANGEAL SITE IN BREAST CANCER SURVIVORS RECEIVING AROMATASE INHIBITORS

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Background: In breast cancer (BC) survivors, the age-related reduction in bone mineral density is exacerbated by aromatase inhibitors (AIs) treatment. AIs disrupt also bone quality and enhance fracture risk in aging women. Consequently, bone health evaluation is mandatory in BC women receiving AIs.

Objectives: Quantitative ultrasound of bone (QUS) and trabecular bone score (TBS) are recognized tools to explore bone health beyond bone mineral density (BMD). The aim of our research was to explore the association of TBS with QUS measurements at phalangeal site in a setting of postmenopausal women taking aromatase inhibitors (AIs).

Methods: BMD at lumbar spine, femoral neck and TBS were evaluated by a DXA densitometer (Hologic Discovery). Amplitude Dependent Speed of Sound (AD-SoS), Bone Transmission Time (BTT) and Ultrasound Bone Profile Index (UBPI) were detected at phalangeal site by Bone Profiler (Igea).

Results: In 102 postmenopausal women (mean age 61.64 ± 8.33 yr.) (60 AIs treated and 42 controls), at baseline examination, TBS was negatively associated with age ($r = -0.39$, $p < 0.001$) and positively related with T-score values at lumbar spine and femoral neck. After 18 months, AD-SoS, UBPI and BTT values were significantly decreased in BC women receiving AIs (-3.7%, -6.45%, -8.5%, respectively, $p < 0.001$ for all), but not in controls (-0.7%, -3.53%, -2.97%, respectively). Change of BMD at lumbar spine was significantly different between AIs treated women and controls (-2.94% vs. -0.69%, $p = 0.001$) and the same result was observed as for BMD at femoral neck (-2.5% vs. -0.39%, $p = 0.01$). Percent change of TBS was significantly greater in AIs treated women in comparison with controls (-2.2% vs. -0.4%, respectively, $p = 0.02$). In AIs treated women, but not in controls, CTX levels significantly increased after 18 months [0.47 (0.36 to 0.62) vs. 0.66 (0.43 to 0.77), $p = 0.0004$] and the same trend was observed as for BSAP levels [14 (13.01 to 15.57) vs. 15 (13.75 to 16.75), $p = 0.003$]. At a multiple regression analysis, change of TBS was independently predicted by change of AD-SoS, after correcting