OVX group. In the TPTD and ALN group, the expression levels of TNF-α was significantly degreased than the OVX group. And the expression levels of TNF-α was no significance between the TPTD and ALN group.
Conclusions: In this study, TPTD and ALN treatments prevented bone loss in OVX mice. Mechanical hyperalgesia in hindlimbs tended to be decreased in the OVX group compared with the TPTD and ALN group. ALN treatment was more effective in bone formation compared with TPTD treatment, whereas pain relief was no significance between TPTD and ALN treatment. These results suggest that TPTD treatment was more effective in osteoporosis patients with skeletal pain.
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FRI0567 DIFFERENCES IN ADCHERENCE TO OSTEOPOROSIS MEDICATIONS IN PATIENTS WITH RHEUMATIC DISEASES: A 3-YEAR RETROSPECTIVE COHORT STUDY

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Background: Patients with rheumatic diseases (RD) have an increased risk of developing osteoporosis (OP) compared with healthy population due to chronic inflammation, low physical activity and using some kind of medications. Persons with RD and OP require prolonged osteoporosis treatment due to increased risk of fracture.
Objectives: To evaluate adherence and persistence with different osteoporosis medications in RD patients with OP during 3 years.
Methods: We conducted a retrospective study of 204 patients (82% women, mean age 54±11 years) with RD (93 – rheumatoid arthritis, 48 – systemic sclerosis, 39 – systemic lupus erythematosus and 24 – ankylosing spondylitis), whom OP was diagnosed in 2013. In 2016 we revised there medical charts for collection information on the osteoporosis treatment and performed telephone contact for patient's self-reporting.
Results: 196 (96%) patients started the OP treatment. Among them 26% - alendronate, 24% received alfacalcidol or supplements of calcium and vitamin D only, 16% - stroncium ranelate, 12% - ibandronate, 9% zoledronic acid, 8% - calcitonin and 5% - denosumab.
8 (4%) patients didn't start the drug treatment at all, 72 (35%) patients were persisted less than 12 months, 47 (23%) – 2 years and 77 (38%) – 3 years. Mean persistence was 2.1, 2.4, 1.6, 1.7, 1.9, 2.0 years for alendronate, alfacalcidol, stroncium ranelate, ibandronate, zoledronic acid, denosumab, respectively. 61 (31%) persons were switched from one antiosteoporotic medication to another due to side effects, inconvenient dose regimen or other reasons. Persistence to oral therapy was better among women than men ($p<0.05$), especially on daily regimen. Discontinuers were less likely than persistent subjects to visit rheumatologist and BMD measurement each year for control of treatment ($p<0.05$). Patients with ankylosing spondylitis were less persistent than persons with other RD. Presence of OP fractures in anamnesis had no significant influence on adherence. 8 (4%) patients had fractures during retrospective period, among them 6 - received only supplements of calcium and vitamin D, 1 - zoledronic acid once and 1 – without OP therapy.
Conclusions: Only 1/3 of patients with RD received antiosteoporotic drugs during 3 years. Visits to rheumatologist and BMD measurements increased subject's persistence. Improving the quality of medical care can be achieved through education and motivation of patients for a long-term treatment of OP.
Disclosure of Interest: None declared
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FRI0568 ECHOSOUND APPROACH FOR SHORT-TERM FOLLOW-UP OF THE DENOSUMAB EFFECT ON BMD RECOVERY AGAINST AROMATASE INHIBITOR IMPACT IN BREAST CANCER PATIENTS

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Background: The Aromatase Inhibitors (AIs)-based therapy used in breast cancer patients to profoundly lower estrogen levels seems to enhance the loss of bone mineral density (BMD) and to increase the fragility fracture rate [1]. Several clinical studies demonstrated that, in breast cancer patients that received the adjuvant AIs, the subcutaneous administration of Denosumab-based therapy significantly increased BMD values and reduced the rate of clinical fractures.
Objectives: To monitor the short-term Denosumab and AIs therapeutic effects on BMD in breast cancer patients through an innovative echographic approach, the EchoSound technology [2].
Methods: 154 breast cancer patients selected for receiving the adiuvant AIs therapy were recruited. All the patients underwent spinal and femoral dual X-ray absorptiometry (DXA) examinations before AIs therapy administration starting (time T0). After AIs treatment starting, enrolled patients were divided into 2 groups: 105 patients received only the AIs treatment (Group A), whereas the remaining 49 patients (Group B) received also an additional Denosumab treatment, in order to contrast the BMD reduction induced by AIs administration. Follow-up measurements were conducted at two different time points: 12 (T1) and 18 (T2) months from AIs treatment starting. At time T1, patients underwent both DXA examinations and EchoSound echographic scans, whereas at time T2 only the echographic scans were performed, since DXA cannot be used for short-term follow-ups.
Results: At time T1, the following results were obtained on lumbar spine: Group A showed a BMD decrement, which was equal to -2.07%±1.66% ($p<0.01$) according to DXA and to -2.22%±0.89% ($p<0.01$) according to EchoSound; Group B showed a BMD increase of 4.06%±1.49% ($p<0.01$) and 4.31% ±0.62% ($p<0.01$) as measured by DXA and EchoSound scans, respectively. At time T2, Group A showed a further BMD decrement, resulting in a total decrease of -3.95%±1.09% ($p<0.01$) with respect to T0 values; on the contrary, in Group B Denosumab treatment produced an additional BMD increment, resulting in a total BMD increase of 4.98%±1.03% ($p<0.01$) in the same 18-month period. Similar results were obtained for femoral neck BMD: a total BMD decrease of -2.37%±0.97% ($p<0.01$) during the whole treatment period was observed in Group A, whereas a total BMD increment of 3.53%±0.43% ($p<0.01$) was measured in the same period in Group B.
Conclusions: By using the EchoSound technology the short-term follow-up of the positive Denosumab effects on BMD reduction in patients treated with adjuvant AIs was feasible and accurate. This approach can be also useful to monitor the therapy effectiveness in patients undergoing specific anti-osteoporotic treatments.
References:
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FRI0569 EVALUATION OF BONE MICROARCHITECTURE IN SYSTEMIC SCLEROSIS PATIENTS: RELATIONSHIPS BETWEEN TRABECULAR BONE SCORE (TBS) AND DISEASE SEVERITY

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Background: Systemic sclerosis (SSc) is a rare connective tissue disorder characterized by an increased synthesis and deposition of extracellular matrix in the skin and internal organs (1). Several studies described SSc as potential risk factor for osteoporosis, however, to date the bone quality in SSc is unclear (2). Trabecular bone score (TBS) has been recently proposed as an indirect measure of bone microarchitecture (3).
Objectives: The aim of this study was to assess bone microarchitecture in SSc patients and possible association with disease severity and microangiopathy.
Methods: Twenty-three female SSc patients (mean age 63.2±12.8 SD years, mean disease duration 92.8±66 SD months, mean Raynaud's Phenomenon duration 142.6±126.1 SD months) were enrolled after written informed consent. The assessment of disease severity was performed using the Medsger's severity scale (4). Bone Mineral Density (BMD) measurements at L1-L4, femoral neck and total hip, were performed using DXA Prodigy Densitometer (GE Lunar). TBS was derived for each spine DXA examination using the TBS index (TBS iNsight Medimaps). Nailfold videocapillaroscopy (NVC) was used to assess the microangiopathy based on nailfold video capillaroscopic pattern (NVC) analysis and the microangiopathy evolution score (MES) (5–6). Using the FRAX (Fracture Risk Assessment Tool) we also evaluate the 10-year risk of hip and major joints osteoporotic fracture.
Results: A positive correlation was observed between TBS and Medsger's general organ score (r=0.5; p=0.01); no other correlations were found between TBS and Medsger's score. Interestingly, TBS was positively and significantly correlated with modified Rodnam skin score (mRss) (p=0.01). When the patients were divided in two groups considering skin involvement by mRss, TBS was found significantly higher into the group with mRss >15 compared to the group with mRss <15 (1.255±0.08 vs 1.163±0.03; p=0.01) No correlations were found between NVC patterns/MES and bone quality assessment (TBS) or bone density assessment (BMD), only a significant correlation, as expected, was observed