Characterization of the Risk of Osteoporosis in a Cohort of Rheumatic Patients during 10 Years of Follow-Up.

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Background: Osteoporosis is the most common cause of fractures. The lifetime risk of fracture after age 50 is 40% for women and 13% for men.

Objectives: Patients with rheumatological diseases are at greater risk for the development of osteoporosis, either due to the natural history of their disease or due to the side effects of the medications used. We proposed to carry out this study.

Methods: Retrospective study aimed at determining the presence of risk factors in patients over 50 years of age who attend the Rheumatology service of a hospital in Venezuela during a follow-up from January 2010 to December 2020 in order to know these risk factors and thus generate strategies that allow better orienting the care of these patients.

Results: The main group of patients was constituted by the female gender and the ages between 50 and 65 years. The main rheumatological pathology was rheumatoid arthritis, followed by Lupus, Osteoarthritis in 3 place and finally in the last box other entities other than those indicated.

Conclusion: Prevalence of Osteoporosis due to rheumatological pathologies.

Graph 1. Prevalence of Osteoporosis due to rheumatological pathologies.

Exercise is Associated with Higher Bone Mineral Density in Patients with Polymyalgia Rheumatica and Vasculitides

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Background: Exercise is an effective non-pharmaceutical intervention for osteoporosis (OP). However, it has not yet been explicitly validated whether it is associated with bone mineral density (BMD) in patients suffering from polymyalgia rheumatica (PMR) and vasculitides.

Objectives: To assess whether exercise is associated with BMD in PMR and vasculitis patients.

Methods: We evaluated baseline visits of patients enrolled in the monocentric, prospective “Rh-GIOP” cohort. Patients were included when having PMR or any kind of vasculitis. Simple and multiple linear regression models with minimum T-score (lumbar spine or hip, whichever was lowest) as the dependant variable were constructed. A dose-response analysis (frequency of exercise per week) was conducted in patients who were doing any kind of exercise. In multiple regression, we adjusted for potential confounders associated with minimum T-scores in an analysis of the overall cohort (manuscript in preparation): age, sex, menopause, body mass index, bisphosphonate use, denosumab use, current glucocorticoid dose, proton-pump inhibitor use, history of vertebral fractures, health assessment questionnaire scores, alkaline phosphatase levels, and gammaglutamyltransferase levels. Multiple imputation by chained equations was used to handle missing data.

Results: 198 patients were included. The mean age was 68 ± 11 years, 68% were females, and the most common diseases were PMR (36%), giant cell arteritis (26%), and granulomatosis with polyangiitis (17%). The mean minimum T-score was -1.74 ± 0.9. Five patients had a disease duration of less than three months. In both unadjusted (Figure 1) and adjusted analysis, exercise was positively associated with minimum T-scores (unadjusted: β = 0.36, 97.5% CI 0.09 to 0.63; p = 0.01; adjusted: β = 0.30, 97.5% CI 0.04 to 0.56; p = 0.02). In exercising patients, there was no association between frequency and minimum T-scores (p(ANOVA) = 0.66).

Conclusion: In PMR and vasculitis, exercise is positively associated with BMD. We adjusted for several covariates, including health assessment questionnaire scores, so it is unlikely that the association between exercise and BMD is only caused because generally healthier patients have a higher likelihood of exercising. However, we found no dose-response relationship by looking at exercise frequency. This is probably due to confounding caused by different kinds of exercises. E.g., weight-bearing exercise is thought to be more effective in elevating BMD. Furthermore, our analysis might have been underpowered (too few patients) to assess differences within the group of exercising patients. Our findings underpin the general advice given to most patients suffering from low bone mass or OP irrespective of their underlying disease, which is to start or to continue exercising within the scope of personal possibilities. Of note, this study is of cross-sectional nature and must be interpreted accordingly as residual confounding cannot be fully ruled out. We plan for the future longitudinal analyses.

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