



## Editorial

# Evaluating bone mass in patients with systemic lupus erythematosus<sup>☆</sup>



## Evaluando la masa ósea en pacientes con lupus eritematoso sistémico

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Osteoporosis and low bone mass in lupus is a recent and little explored topic. Bone comorbidities in patients with systemic lupus erythematosus (SLE) have not been understood or studied widely and clearly. Patients with SLE are at increased risk of having a reduced bone mineral density (BMD) compared with the general population, and therefore, of suffering from osteoporosis and fragility fractures, demonstrated in many cross-sectional retrospective studies and in some longitudinal studies.<sup>1-3</sup> The cause of the bone mass loss is considered unknown but is probably multifactorial. Patients with SLE have risks to develop osteoporosis, both traditional and typical of the disease. The traditional risks described have been smoking, age, physical inactivity, low weight, family or personal history of fragility fractures and early menopause. The inherent risks of the disease are the chronic systemic inflammation that decreases the formation of osteoblasts altering the osteoblasts/osteoclasts balance, the use of drugs (corticoids, immunosuppressive agents, heparin, anticonvulsants, selective inhibitors of serotonin receptors

used in neuropsychiatric disorders, and probably the proton pump inhibitors), vitamin D deficiency, hypogonadism, and the duration and severity of the disease.<sup>2,4,5</sup> Taking into account these comorbidities in these patients will undoubtedly improve the healthcare and the outcomes.

The use of corticosteroids is a risk for osteoporosis, but the studies on osteoporosis in SLE have not been clear to demonstrate its association when the confounding factor of their use as a result of the degree of inflammation determined by the activity scales, the cumulative damage and the duration of the disease, is controlled. In addition, almost all studies have been conducted in patients with lupus who have taken corticosteroids and without a comparator such as SLE patients who have not consumed corticosteroids. The average chronic dose of the corticosteroids is not established to define it as a cause of osteoporosis.<sup>6-8</sup>

Although evidence supports the higher frequency of osteoporosis in SLE compared with healthy controls and the association of decreased bone mineral density and

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osteoporosis with lupus, it has not been possible to determine if there is a greater risk and frequency in relation with other rheumatic diseases such as rheumatoid arthritis (RA) in which it also has been found that the BMD is decreased.<sup>9</sup>

The study conducted by Carlos Velasquez and collaborators, entitled: "Low Bone Mass and Osteoporosis in Patients with Systemic Lupus Erythematosus" which makes a contribution to knowledge on the decrease of bone mass in patients with SLE, is published in this issue of the Journal. In this study were obtained data from patients treated in 2 third-level referral centers, which included the values of the bone densitometry in addition to clinical and demographic data. It is shown that data on the bone health were obtained in a small number of patients (in about one-fifth of patients it was possible to obtain the information) and that this problem is not actively investigated. The frequency of alterations in BMD was 31% in premenopausal patients with low bone mass for their age. In postmenopausal patients, 77% had alterations in BMD; 50% with osteoporosis and 27% with low bone mass. The frequency of alterations in the BMD in patients with SLE has been reported widely and varies from 1.4% to 74%.<sup>1,4</sup> These frequencies vary widely according to differences in the group sizes, age, gender, ethnicity, degree of disease and medication used.

Dr. Velasquez and his coauthors found some factors associated with low BMD such as fractures, alcohol consumption, active smoking, anti-Ro antibodies and neurological and chronic renal disorders. The use of the corticosteroid prednisolone in these patients was about 74% with a daily dose of 10 mg.

In this study it was not possible to draw clear conclusions in male patients or in those with chronic renal failure due to the size of the patients' sample, although, as expected, all patients with renal failure had osteoporosis. Other limitations of the study, as they admit, are its design, the vitamin D status, since its decrease plays an important role in bone health, as well as in the muscle strength and balance of the patients with lupus, which in turn may have an impact on resulting fragility fractures, which were described in this study with a frequency of 10.2%. Vitamin D, in addition, has been associated with higher disease activity indexes.<sup>10</sup> The majority of patients with fragility fractures have osteoporosis and its prevalence is around 9–12%, although asymptomatic vertebral fractures may be more frequent in SLE.<sup>11</sup>

There are not guidelines for clinical practice in patients with lupus and osteoporosis, and the guidelines devoted to the evaluation and treatment of SLE rarely mention this topic. In general, the guidelines for patients who use chronically glucocorticoids are employed<sup>12</sup> and the American College of Rheumatology recommends the use of an antiresorptive or an anabolic agent for patients who have received 7.5 mg of prednisone daily for more than one month, with history of fracture or with a T score which indicates bone loss, and also recommends the evaluation of asymptomatic vertebral fractures.<sup>13</sup> EULAR only recommends screening and primary prevention of osteoporosis in the guidelines for the treatment of SLE.<sup>14,15</sup>

They have been published quality guidelines in health care or the so called Quality indicator set in SLE and osteoporosis, whose objective has been to determine the minimum standardized health care. These guidelines recommend to evaluate the BMD, and prescribe supplementary calcium and

vitamin D for patients treated with more than 7.5 mg per day of prednisone or its equivalent used for more than 3 months.<sup>16,17</sup>

In conclusion, the bone health of the patients is compromised very frequently; its etiology is unknown but it is most probably multifactorial. Large and longitudinal studies are required to establish accurately the relationship of SLE with osteoporosis and fragility fractures. This study contributes to improve the knowledge on the association of bone health in patients with lupus.

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### Conflict of interest

The authors declare they do not have any conflict of interest.

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