Clinical characteristics of osteoporosis in patients with rheumatoid arthritis: Disease activity matters

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Rheumatoid arthritis (RA) is chronic inflammatory autoimmune disease with predominantly involving small joints causing joint deformity and functional loss. In addition, systemic complications are commonly developed in RA patients with severe inflammation or long-standing disease. Osteoporosis is one of the most common systemic manifestations in patients with RA because chronic inflammation causes an increase in osteoclastic differentiation and an inhibition of osteogenesis [1,2]. Furthermore, this association may be due to a decreased mobility and frequent occurrences of RA during menopause as well as the use of corticosteroids [3].

The RA is reported to be approximately 2-fold elevated prevalence of osteoporosis and fracture in all age groups compared to the general population [4]. In a recent Korean multicenter observational study, the proportion of osteoporosis was 33.4% in patients with RA and 91.3% of them were received osteoporotic treatments [5]. In addition, older age, higher doses of glucocorticoid, and longer disease duration were independent risk factors for osteoporotic fractures in patients with RA.

In this issue of the ‘Osteoporosis and Sarcopenia,’ 2 interesting papers about clinical characteristics of osteoporosis in patients with RA are published [6,7].

The first paper assessed the association of bone mineral density (BMD) and disease activity of RA with the propensity score matching (PSM) technique [6]. Recently, a targeted treatment to achieve clinical remission or low disease activity within 3–6 months of treatment (treat-to-target) is widely accepted as the gold standard in the management of RA [8]. So, the authors recruited patients with RA who were treated for >1 year and achieved clinical remission (28-joint disease activity score with C-reactive protein [DAS28-CRP] < 2.3) within 6 months.

Of 332 patients with RA, 279 patients (84%) were in remission or low disease activity (RA-rem), which is much higher than other study. Anyway, they compared BMD between the RA-rem and non-RA group and found that there is no difference in the BMDs of all assessed bone areas after PSM of age, sex, body mass index (BMI), past bone fragility fracture, osteoporosis drug treatment, glucocorticoid dose, serum creatinine to cystatin C ratio, Barthel index score, and the number of comorbidities. In addition, when compared the BMD between RA-rem and RA-nonrem (not achieve DAS28-CRP <2.3), the BMDs of RA-rem were significantly higher than RA-nonrem in all assessed bone areas.

These data suggest that the decrease of BMD can be prevented if the disease activity is well controlled as remission or low disease activity in patients with RA. However, this study did not show the reliable data about fragility fracture, which is the most important clinical endpoint of osteoporosis due to the limitation of the study confirming it by medical record without evaluation of X-ray findings.

The second paper evaluated clinical factors associated with the usage of osteoporosis medication through self-administered questionnaires in Japanese patients with RA [7]. This study enrolled patients with RA who completed questionnaires including questions about osteoporosis medications. These patients were registered in the Institute of Rheumatology Rheumatoid Arthritis Cohort, which was a single, institute-based, observational cohort of Japanese patients with RA. In all 5660 patients with RA who responded to the questionnaires (mean age, 61.8 years; 86.0% female), 1983 patients (35.0%) reported taking osteoporosis medications including 998 active vitamin D analogs, 79 selective estrogen receptor modulators, 79 teriparatide, 1133 bisphosphonates, 94 denosumab, and 133 others. In multivariate logistic regression analysis, increasing age, female sex, lower BMI, higher disease duration of RA, higher self-reported fracture history, higher disability index, increased dose of prednisolone and methotrexate, and concomitant use of antihypertension medications were significantly associated with the use of osteoporosis medications.

These findings are consistent across the ethnicity, however, there is a difference in the use of osteoporosis medications. This study revealed that only 35% of patients with RA were taking osteoporosis medications including vitamin D, which is quite low compared with recent practice of patients with RA. I think this low usage of osteoporosis medication may be related with not checking BMD systematically in this cohort as the authors admitted. It should be strongly recommended to check BMD in all postmenopausal (or men older than 50 years-old) patients with RA especially taking corticosteroids.

These 2 papers send a message to the rheumatologist who care the patients with RA and osteoporosis.
The disease activity of RA should be controlled to reach remission or low disease activity, which decrease the risk of osteoporosis.

Regularly check BMD in patients with RA if they have risk factors of osteoporosis such as old age, female sex, lower BMI, fracture history, high disease activity, and taking glucocorticoids.

Conflicts of interest

No potential conflict of interest relevant to this article was reported.

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