SAT0144

EFFECT OF AGING ON BONE MASS AND SKELETAL MUSCLE MASS IN ELDERLY PATIENTS WITH RHEUMATOID ARTHRITIS: TOMORROW STUDY

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Background: Both osteoporosis and sarcopenia are common in patients with chronic inflammatory conditions such as rheumatoid arthritis (RA). Fragility fractures occur on osteoporotic bone on falling. Unstable gait caused by sarcopenia increases the frequency of such falls.

Objectives: To evaluate the relationship between bone mineral density (BMD) and appendicular skeletal muscle index (ASMI) in patients with RA and healthy controls.

Methods: We used data collected over a 7-year period from 2010 to 2016 as part of a prospective cohort study (TOMORROW Study: UMIN00003876) that included RA patients and age- and sex-matched volunteers recruited through mass media as controls. BMD of the lower leg and ASMI were determined using whole-body dual-energy X-ray absorptiometry. These were collected for all participants together with baseline characteristics including anthropometric data and blood test data related to lipid and sugar metabolism. Each parameter for the RA patients was compared with that for the healthy controls. Multiple regression analysis was carried out in the RA population only. In RA patients, treatment regimen and disease activity score 28 were recorded.

Results: Among 413 participants of the TOMORROW Study (208 RA patients; 349 women; mean age 58 years), 137 participants age 65 years or older (77 RA; 117 women) were enrolled in the present study. BMD and ASMI decreased significantly over the 7-year study period in RA patients and healthy controls from baseline. BMD and ASMI were lower in RA patients than in healthy controls at every time point through the 7-year study period. There was no interaction between time and RA ($p=0.194$, 0.089 ; repeated measure ANOVA). The change of BMD at year 7 from baseline (Δ BMD) and change of ASMI at year 7 from baseline (Δ ASMI) did not correlate in healthy controls, however, in RA patients, Δ BMD correlated positively with Δ ASMI ($r=0.331$, $p=0.023$) (Fig). Multiple regression analysis with Δ BMD as the outcome variable and anti-citrullinated peptide antibody, Rheumatoid factor, ASMI, body mass index, disease activity score 28, homeostatic model assessment (HOMA)-R, Matrix metalloproteinase (MMP)-3 and sex as independent variables revealed that male sex ($p=0.0036$) and ASMI ($p=0.0020$) were independently related with Δ BMD.

Figure 1 Correlation between change of ASMI and BMD for 7 years in elderly patients with RA. (pearson correlation coefficient; $r=0.331$, $P=0.0229$)

Conclusions: Decrease of BMD and ASMI were correlated with each other in elderly patients with RA.

Disclosure of Interest: None declared

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SAT0145

FEATURES OF PATIENTS WITH RHEUMATOID ARTHRITIS WHOSE DEBUT JOINT IS A FOOT OR ANKLE JOINT: A 5,479 CASES STUDY FROM THE IORRA COHORT

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Background: Foot and ankle joint disorders are serious issues for patients with rheumatoid arthritis (RA). Rheumatoid foot is reported as the first symptom of the disease in 20–53% of RA patients^{1–3}. However, there are few studies investigating the features of patients with RA whose debut joint is a foot or ankle joint.

Objectives: The aim of this study is to compare the differences between RA patients whose first symptom was a foot or ankle joint (FOOT group) and was other joints (OTHER group) by using the Institute of Rheumatology, Rheumatoid Arthritis (IORRA) cohort in our institute.

Methods: In the IORRA survey conducted in April 2016, patients were asked about first symptom at RA onset. Disease activities, clinical laboratory variables, functional disability, quality of life, and the use and ratio of anti-inflammation and anti-rheumatic drugs were compared between the FOOT group and OTHER group.

Results: Among 5,637 Japanese patients with RA who participated in the IORRA survey on April 2016, 5,479 patients (97.2%) responded to the questionnaire regarding debut joint. Of these 5,479 patients, 2,402 (43.8%) reported their first symptom of RA were a foot or ankle. Comparing the two groups, the FOOT group had higher disease activity, higher disabilities, lower quality of life, low activities of daily living, and poorer mental health and used higher dose and rate of anti-inflammatory drugs significantly than the OTHER group (all $P<0.01$). On the other hand, medications to suppress the disease activity of RA have no statistical differences between the two groups (table 1).

Table 1 Comparison of clinical features and outcomes between the FOOT group and the OTHER group

	FOOT group (n=2,164)	OTHER group (n=2,164)	P
DAS28	2.82±1.1 (0.0–7.0)	2.51±0.95 (0.0–6.1)	<0.01
CRP, mg/dl	0.44±0.92 (0.0–9.7)	0.32±0.80 (0.0–18.3)	<0.01
RF, IU/ml	118.5±260.7 (3–7150)	97.2±217.1 (3–5544)	<0.01
J-HAQ	0.69±0.76 (0–3)	0.47±0.66 (0–3)	<0.01
EQ5D	0.78±0.18 (-0.1–1.0)	0.85±0.2 (0.1–1.0)	<0.01
NSAID use, no. (%)	1,162 (53.7)	972 (44.9)	<0.01
PSL use, no. (%)	659 (30.5)	569 (26.3)	<0.01
PSL dose, mg/day	1.17±2.3 (0–18)	0.9±2.0 (0–15)	<0.01
DMARD use, no. (%)	1,926 (89.0)	1,921 (88.8)	0.85
MTX use, no. (%)	1,671 (77.2)	1,656 (76.5)	0.61
MTX dose, mg/week	6.18±4.8 (0–17.5)	5.88±4.7 (0–20)	0.059
Biologic DMARD use, no. (%)	495 (22.9)	458 (21.2)	0.19

Conclusions: Patients whose debut joint was a foot or ankle had higher disease activity, higher dysfunction, lower quality of life, and used higher dose and rate of anti-inflammatory drugs than patients whose debut joint was the other joints on RA onset. Clinicians should have more attentions to foot and ankle joints in daily practice so as not to underestimate the disease activity of RA.

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