Conclusion: This study suggests that RA patients from Mexico have high prevalence of the FM. Those with FM have a worse functional status, a higher frequency and score of comorbidities that impact in a reduction of their quality of life. On the other hand, no differences were found for RA disease activity in both groups. However, these observations must be confirmed in larger and prospective studies.

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POS0516

REDEFINING THE CLINICAL AND LABORATORY FEATURES OF RHEUMATIC PLEURAL EFFUSION: A 30-CASE SERIES

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Background: Rheumatoid pleural effusion (RPE) is a common extra-articular complication in patients with rheumatoid arthritis (RA). Previous studies have shown that RPE usually occurs in middle-aged men with rheumatoid factor (RF)-positive RA. RPE usually has features of pleural fluid acidosis, high lactate dehydrogenase (LDH) levels, and very low glucose levels⁽¹⁾. However, to the best of our knowledge, these findings were based on very few case series and reports, and most of these reports were published by the early 2000s^(1,2).

Objectives: To investigate the clinical and laboratory characteristics and typical clinical courses of patients with RPE in a single centre of Japan since the beginning of the 21st century.

Methods: Medical records of RPE patients were retrospectively reviewed between May 2006 and September 2020. RPE was identified by fulfilling these five conditions: (1) confirmation of the RA diagnosis; (2) having an exudative pleural effusion according to Light's criteria; (3) negative results of pleural fluid culture; (4) negative results of pleural fluid cytology; and (5) exclusion of a parapneumonic effusion or empyema defined as no antibiotic use or ineffectiveness of antibiotics during the clinical course. Patients were divided into two groups according to their age at diagnosis: <60 years (Group A) and ≥60 years (Group B).

Results: A total of 30 cases of RPE were included in the study. The median age was 71 years (interquartile range [IQR], 66–78 years). Of these patients, 16 (53%) were women. The median disease duration of RA was 98 months (IQR, 8–162 months). The two groups comprised six patients aged <60 years old and 24 patients ≥60 years. The median age was 54 years (IQR, 49–56 years) in Group A and 74 years (IQR, 69–78 years) in Group B. The median disease duration of RA was longer in Group B than that in Group A (132 vs. 3 months, $p=0.008$). Compared with Group A, Group B had fewer patients with fever (14% vs. 83%, $p=0.003$), and had lower serum C-reactive protein levels (3.3 vs. 11.1 mg/dL, $p=0.03$). Moreover, Group B was more likely to show mild inflammatory pleural fluids with higher pH (7.5 vs. 7.2, $p=0.005$) and lower LDH levels (155 vs. 1810 IU/L, $p=0.046$). Corticosteroids were started or increased in five (83%) and nine (38%) patients, and biologic disease-modifying anti-rheumatic drugs were started in one (17%) and two (8%) patients in groups A and B, respectively. One patient (16%) died within 5-years in Group A, and seven patients (29%) died in Group B.

Conclusion: In contrast to previous studies, RPE was seen in older patients as well as middle-aged adults, and the pleural fluid analysis in older patients with RPE showed milder inflammation than the middle-aged patients.

Table 1. Comparison of clinical and laboratory findings between Group A and Group B.

	Group A (n=6)	Group B (n=24)	P value
Age (years)	54 [49-56]	74 [69-78]	
Female	2 (n=6, 33.3)	14 (n=24, 58.3)	0.38
Disease duration of RA (months)	3 [1-9]	132 [44-199]	0.008
Fever ≥37.0°C	5 (n=6, 83.3)	3 (n=22, 13.6)	0.003
Serum			
CRP (mg/dL)	11.1 [5.6-14]	3.3 [0.9-10.5]	0.03
RF (IU/mL)	100 [19-816]	63 [23-193]	0.95
Anti-CCP ab positive	5 (n=6, 83.3)	12 (n=15, 80)	1.00
Pleural fluid analysis			
pH	7.2 [7.2-7.2]	7.5 [7.4-7.5]	0.005
LDH (IU/L)	1810 [594-2932]	155 [123-346]	0.046
Glu (mg/dL)	59 [10-123]	105 [91-122]	0.42
Tp (g/dL)	5.1 [4.9-5.6]	4.6 [3.6-5.2]	0.21
Number of cells (μL)	5235 [3353-9300]	3300 [1490-5008]	0.27
Glu/serum Glu	0.41 [0.09-0.99]	1.05 [0.85-1.15]	0.71
Started or increased CS	5 (n=6, 83.3)	9 (n=24, 37.5)	0.18
Started bDMARDs	1 (n=6, 16.6)	2 (n=24, 8.3)	0.50
Died within 5 years	1 (n=6, 16.6)	7 (n=24, 29.1)	1.00

Data are median [interquartile range], or number (total number, percent). Abbreviations: RA, rheumatoid arthritis; CRP, C-reactive protein; RF, rheumatoid factor; Anti-CCP ab, anti-cyclic citrullinated peptide antibodies; LDH, lactate dehydrogenase; Glu, glucose; Tp, total protein; CS, corticosteroid; bDMARDs, biologic disease-modifying anti-rheumatic drugs

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Figure. Comparison of pleural fluid lactate dehydrogenase (LDH) and pH between Group A and Group B.

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POS0517

A LONGITUDINAL STUDY OF SARCOPENIA, LOCOMOTIVE SYNDROME, AND FRAILTY IN PATIENTS WITH RHEUMATOID ARTHRITIS: FROM THE CHIKARA STUDY

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Background: Rheumatoid arthritis (RA) patients have a high frequency of sarcopenia, and they commonly have reduced physical function. We previously reported that the prevalence of sarcopenia was 28%, that of frailty was 18.9%, and that of pre-frailty was 38.9% in RA patients^{1,2}, and 13.2% of RA patients developed sarcopenia within a year³.

Objectives: To investigate the risk factors for new onset of sarcopenia, locomotive syndrome, and frailty in patients with RA and the course of each disease.

Methods: Two-year follow-up data from the rural group of the prospective, observational CHIKARA study were used. Sarcopenia was diagnosed using the criteria of the Asian Working Group for Sarcopenia 2014, locomotive syndrome was diagnosed using locomotive 5, and frailty was diagnosed using the basic checklist. New onset of the disease over the 2-year follow-up period was studied, excluding cases that had the disease at baseline. Improvement was defined as cases with disease at baseline that no longer met the diagnostic criteria after 2 years. Differences in the characteristics of each disease were tested using the Chi-squared test and the paired *t*-test.

Results: The 81 patients with RA (82.7% female) had mean age 66.9±11.5 years, mean DAS28-ESR 2.9±1.2, methotrexate use in 81.5% (with a dose of 9.9±2.7 mg/week), and glucocorticoid (GC) use in 22.2% (with a dose of 3.1±1.7 mg/week). The baseline prevalence was 44.4% for sarcopenia, 35.8% for locomotive syndrome, and 25.9% for frailty, and the new onset rate was 4.4% for sarcopenia, 15.4% for locomotive syndrome, and 13.3% for frailty. Of the patients with each disease at baseline, 36.1% had sarcopenia, 20.7% had locomotive syndrome, and 33.3% had frailty, and of those with each disease at 2 years, 36.1% had sarcopenia, 20.7% had locomotive syndrome, and 33.3% had frailty. The new onset sarcopenia and locomotive syndrome groups had significantly higher rates of GC use ($p=0.036$, $p=0.007$, paired *t*-test) and significantly higher doses ($p=0.01$, $p=0.001$, paired *t*-test) than the groups without new onset sarcopenia and locomotive syndrome. High baseline disease activity was an independent predictor of new onset of locomotive syndrome on multivariate logistic regression analysis (OR=3.21, $p=0.015$).

Conclusion: The new onset rates at 2 years were 4.4% for sarcopenia, 15.4% for locomotive syndrome, and 13.3% for frailty. In the new onset sarcopenia and locomotive syndrome groups, both GC use and dosage were significantly higher.

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