Figure 1: Mean (SD) ABA Cmin values (top) and Mean Change From Baseline in SDAI (bottom) in Subjects in DE Arm C (ABA QW + MTX), D (ABA EOW + MTX followed by ABA placebo + MTX), and E (ABA QW + MTX placebo)

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FRI0039 LUNG ULTRASOUND UTILITY IN INTERSTITIAL LUNG DISEASE DETECTION IN RHEUMATOID ARTHRITIS

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Background:

Objectives: To analyze the diagnostic utility of lung ultrasound (US) to detect interstitial lung disease (ILD) in Rheumatoid arthritis (RA) patients comparing with high-resolution computed tomography (HRCT).

Methods: Study design: We performed a cross-sectional, observational study in patients with RA-ILD (cases) controlled with a group of RA patients without ILD (controls) paired by sex, age and time of disease evolution.

Protocol: Patients were selected between May and September 2019. Patients were interviewed by two rheumatologist for the protocolized collection of clinical data. The patients were assessed using HRCT, Pulmonary Function Test (PFT) and lung US. The rheumatology who performed the lung US were blinded to patients clinical data. Variables: (1) B-lines number; (2) evaluation of the lung-ultrasound score already described: L. Gargani, Gutiérrez comprehensivo, Gutiérrez reducido and Mohammadi; (3) pleural irregularities; (4) A pattern US lost; (5). Other variables included demographic, clinical-analytical, therapeutic and ILD-type description. Statistical analysis: descriptive, bivariate analysis. We applied Pearson's correlation coefficient between B-lines, PFT and clinical variable. Furthermore, to establish the cut-off point of the US B-lines number for detecting the presence of significant RA-ILD in relation to HRCT, we used the receiver operating characteristic (ROC) curve analysis. A logistic regression analysis was performed to identify the intercostal spaces (IV: B-lines number in each space) which were independently associated with ILD (DV: ILD in HRCT).

Results: 71 patients were included, 37 (52.1%) with ILD-RA and 34 (47.9%) RA controls. The main characteristics are shown in Table 1. RA-ILD presented more B-lines number than control without ILD (median IQR) 91.0 [31.0-149.0] vs 6.5 [1.5-30.5]; $p < 0.001$ and more pleural irregularities (PI) [PI-median(IQR) 41.0

(5.0-57.5) vs 2.5 (0.0-7.2); $p < 0.001$. Furthermore, RA-ILD showed a negative correlation between B-lines and DLCO ($r = -0.337$, $p = 0.048$) and positive with DAS28 ($r = 0.347$, $p = 0.035$). Regarding US score, we found that the detection of 32.5 B-lines in 72 intercostal spaces, had a Sensitivity of 75.7%, Specificity=79.4%, PPV= 80% and NPV=75%, whilst in reduced score of 10 intercostal spaces, the detection of 5.5 B-lines had a sensitivity= 62.2%, Specificity= 91.3%, PPV=88.4%, NPV=69.5%. In multivariate analysis, the intercostal spaces which showed independent association with ILD were 3rd right anterior axillary space (OR [IC 95%] 19.0 [1.3-27.5]), 8th right posterior axillary space (OR [IC 95%] 0.04 [0.0-0.6]), 8th right subscapular space (OR [IC 95%] 16.5 [1.8-45.5]), 9th right paravertebral space (OR [IC 95%] 7.11 [1.0-37.1]) and 2nd left clavicular middle space (OR [IC 95%] 21.9 [1.26-378]).

Conclusion: Lung Ultrasound could be a useful tool for interstitial lung disease diagnosis associated with Rheumatoid Arthritis. A 10 space reduced score showed a similar total predictive capacity than 72-space score

References:

VARIABLE	RA-ILD n=37	RA n=34	P-VALUE
Epidemiological Characteristics			
Age in years, mean (±SD)	70.5 (9.1)	70.6 (7.5)	0.970
Sex, male, (%)	20 (54.1)	18 (52.9)	0.920
Body Mass Index, mean, (±SD)	27.5 (3.0)	29.2 (4.2)	0.106
Clinical-analytical characteristics			
Smoking			0.899
Smokers, n (%)	4 (11.8)	4 (10.8)	
RA evolution time, months, median, (p75-p25)	172.5 (100.4-234.4)	134.5 (106.5-211.9)	0.304
ILD evolution time, median, (p75-p25)	42.8 (21.3-101.3)	-	-
Rheumatoid Factor (RF)+ (>10), n (%)	35 (94.6)	27 (79.4)	0.055
RF (>60)	28 (77.8)	18 (52.9)	0.029
ACPA+ (>20), n (%)	34 (91.9)	26 (76.5)	0.073
ACPA (>340), n (%)	26 (72.2)	11 (32.4)	0.001
Erosive, n (%)	22 (59.5)	19 (55.9)	0.761
Clinical manifestation			
DAS28, mean (±SD)	3.1 (1.2)	2.7 (0.9)	0.151
Remission-LDA, n (%)	21 (56.8)	24 (72.7)	0.164
Mild-High activity actividad, n (%)	16 (43.2)	9 (27.3)	0.164
HAQ, mean (±DE)	1.1 (0.6)	0.7 (0.6)	0.021
Tratamiento			
sDMARDs, n (%)	32 (86.5)	34 (100)	0.026
bdMARDs, n (%)	11 (29.7)	11 (32.4)	0.811
Metotrexate, n (%)	19 (51.4)	28 (82.4)	0.060
Leflunomide, n (%)	4 (10.8)	4 (11.8)	0.899
Sulfasalazine, n (%)	5 (13.5)	2 (5.9)	0.281
Hidroxicloroquine, n (%)	4 (10.8)	2 (5.9)	0.456
Micofenolate, n (%)	4 (10.8)	0 (0.0)	0.048
Infliximab, n (%)	0 (0.0)	3 (8.8)	0.065
Etanercept, n (%)	3 (8.1)	4 (11.8)	0.606
Adalimumab, n (%)	0 (0.0)	1 (2.9)	0.293
Golimumab, n (%)	1 (2.7)	1 (2.9)	0.952
Certolizumab, n (%)	0 (0.0)	1 (2.9)	0.293
Tocilizumab, n (%)	2 (5.4)	0 (0.0)	0.169
Abatacept, n (%)	4 (10.8)	0 (0.0)	0.048
Rituximab, n (%)	1 (2.7)	0 (0.0)	0.334

Disclosure of Interests: None declared

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FRI0040 MULTI-VARIATE APPROACH INCLUDING SEROLOGY AND GENETICS FOR AN IMPROVED IDENTIFICATION OF PATIENTS AT RISK OF DEVELOPING RA

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Background: First-degree relatives of rheumatoid arthritis (RA) patients (FDR-RA) have a 3 - 5-fold increased prevalence of the disease [1]. RA development is triggered by an interaction between genetic and environmental factors. As the field is moving towards prevention in pre-clinical stages of RA, it is key to identify individuals with imminent RA, prior to onset of symptoms, which will presumably rely on both the measurement of autoantibodies and genetic risk markers.

Objectives: Assemble a pattern of serologic biomarkers in combination with genetics to improve the identification of individuals at high risk to develop RA.