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PULMONARY ULTRASOUND IN THE ASSESSMENT OF INTERSTITIAL LUNG DISEASE IN RHEUMATOID ARTHRITIS

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Background: Interstitial lung disease (ILD) is an extra-articular complication in rheumatoid arthritis (RA) that may lead to severe impairment of respiratory function. High-resolution computer tomography (HRCT) is the most common imaging technique used in the assessment of ILD. However, the costs and the ionising radiation may limit its use in routine practice. Recently, US is generating interesting data that may support its use and validity in the assessment of ILD in rheumatic diseases1,2.

Objectives: To investigate the correlation between lung US and HRCT findings in the assessment of ILD in patients with RA.

Methods: Patients with diagnosis of RA according to ACR 2010 classification criteria with respiratory symptoms and previous diagnosis of ILD by HRCT were included. Clinical examination, pulmonary function test (PFT) and lung US were performed in all patients. Lung US was performed by a rheumatologist expert in US who was blinded to clinical and HRCT data. Serologic tests (anti-CCP, ESR, RF, ANA) were taken. Lung US was performed in 14 intercostal spaces (IS) and quantified according the following semiquantitative scoring: grade 0=normal (≤5 B-lines); grade 1=mild (6 to 15 B-lines); grade 2=moderate (16 to 30 B-lines); and grade 3=marked (≥30 B-lines). The Warrick score (extension) was used to interpret the HRCT findings.

Results: A total of 32 patients with RA (25 women and 7 men) were included. Mean age was 59.37 (±SD 13.66) years, and the mean disease duration was 58.75 (±SD 52.52) months. Sixteen patients were smokers and 75% were positive to anti-CCP. Moreover, the mean of DAS28 was 3.71 (±SD 1.01). A total 448 IS were assessed by US. Lung US was positive for ILD in 28 patients (87.5%). From those, 7 patients (21.8%) with severe ILD, 12 patients (37.5%) with moderate, 9 patients (28.1%) with mild. Four patients (12.5%) showed normal lung US assessment. A significant linear correlation was found between the US score and the DLCO (p=0.000). No association was founded with DAS28, anti-CCP, PFT. Sensitivity and specificity of ultrasound for ILD was 87.5% and 98% respectively.

Conclusions: Our study demonstrates that lungs US may be a potential tool for the assessment of ILD also in patients with RA. It can be adopted in future as a screening tool to use at moment of the first diagnosis of RA.

References:


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