

## **Title:**

Pulmonary functional assessment in Egyptian patients with rheumatoid arthritis.

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## **Abstract:**

Rheumatoid arthritis (RA) is an autoimmune disease which principally affects synovial joints. It is commonly accompanied by extra-articular manifestations. *Aim of the study:* The study aims to estimate pulmonary function test abnormalities which can occur in patients with RA. Patients and methods: a cross-sectional observational study included ١٢٠ patients with rheumatoid arthritis and ١٠٠ age and sex-matched healthy volunteers were included in the study as controls. Radiological assessment with High-resolution computed tomography, measurement of forced expiratory volume in ١ s (FEV<sub>١</sub>), forced vital capacity (FVC), FVC/ FEV<sub>١</sub>, forced expiratory flow in ٢٥-٧٥% (FEF<sub>٢٥-٧٥</sub>) by spirometry, measurement of oxygen saturation (sO<sub>٢</sub>), six-minute walk test (٦MWT) and mean pulmonary artery systolic pressure (PASP) by Echocardiogram were done. *Results:* ١١٨ (٩٠.٨%) were female while ١٢ (٩.٢%) were male; with a mean age of  $٤٨.٠٢ \pm ١٢.٩$  years. In RA group the mean of forced vital capacity was  $٦٢.٦ \pm ١٩.٩٥$ , forced expiratory volume in ١ s was  $٦٧.٨ \pm ٢٠.٠٥$ , FEV<sub>١</sub>/FVC was  $٨٢.٤٤ \pm ١٤.٠٨٣$ , forced expiratory flow in ٢٥-٧٥% was  $٥٦.٠٦ \pm ٤٢.٣٦٥$ , and sO<sub>٢</sub> was  $٩٣.٨ \pm ٥.٨٨$  %. Lung parameters were significantly lower when compared with the control group. The mean distance of six minutes waking test was  $(٣٠٢.١ \pm ٧٦.٥)$  meter, with ١١.٥% had desaturation, and ٢٦.٢% cannot do the test. The restrictive pattern was found in ٥٠.٨% of the patients. Pulmonary hypertension was found in ٣٩ (٣٠%) of RA patients with its mean  $٤٢.٤ \pm ١٩$  mmHg. The most common pattern was a reticular pattern (٣٦.٩%), followed by ground glass opacity (٣٣.١%). *Conclusions:* Various patterns of pulmonary function abnormalities could be exhibited in RA patients, but the restrictive pattern is the most common feature with mild pulmonary hypertension. Evaluating RA patients for lung abnormalities should be done when they show signs of lung affection.