

Lung changes are present in nearly half of ACPA positive RA patients at disease onset

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A new study presented today at EULAR 2012, the Annual Congress of the European League Against Rheumatism, shows that lung changes in association with anti-citrullinated protein autoantibody (ACPA) status are a primary manifestation of rheumatoid arthritis (RA).

Study findings show that 51% of RA patients (n=105) had identifiable lung changes (as measured by [high resolution computer tomography \[HRCT\]](#)) as compared to 28% of healthy controls (n=43). In addition, ACPA presence - but not smoking status - was associated with HRCT changes. This demonstrates that lung abnormalities are more frequent in RA patients as compared to individuals without RA, but with comparable age, smoking status, gender and geographic area.

Mass spectrometry identified five proteins in the synovium (eight sites in total) and four in the lungs (six sites in total) containing citrullinated residues. Two vimentin derived citrullinated peptides were present in a majority of both synovial and lung biopsies with higher citrullinated/unmodified peptide ratios in the smokers as compared to non-smokers. Additionally, there was a significant increase in expression of both peptidylamino deiminase (PAD) 2 and PAD4 enzymes in the lungs of current smokers, independent of the ACPA status.

"Our finding suggests an active involvement of the lungs in the initiation phase of chronic inflammatory joint disease. Interestingly, these abnormalities were mainly restricted to those RA patients who were positive for ACPA, as well as smokers," said Dr. Anca Catrina, from the

Department of Medicine, Karolinska Institute, Sweden and lead study author. "We believe that there is an urgent need for more active screening to identify lung disease in high risk RA patients (especially ACPA positive smokers). Anti-smoking strategies as part of RA treatment programs and further interventional studies are needed in order to mediate the local immune process in the lungs at an early stage."

This study followed 105 RA patients with symptom duration of less than one year at the time of diagnosis and naïve to treatment with disease modifying anti-rheumatic drugs (DMARDs). A second non-RA cohort was matched for age, smoking status and gender.

The study demonstrates that HRCT abnormalities, shared citrullinated epitopes with the joints and local production of ACPA are present in the lungs of [patients](#) before the onset of RA, proposing that site-specific extra articular changes might be the initiating event of the specific immune response in ACPA positive RA.

More information: Abstract Number: FRI0101

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