

Smoking effects on the pulmonary functions and disease activity in rheumatoid arthritis patients: potential value of anticyclic citrullinated peptide assessed in bronchoalveolar lavage

Background: Rheumatoid arthritis (RA) is an inflammatory autoimmune disease where smoking is known to be an important risk factor. Anti-citrullinated protein antibodies (anti-CCP) is highly sensitive and specific for RA, associated with high activity of disease, and poor treatment response. aim of the work was to investigate the effects of smoking on the pulmonary functions and disease activity in ra patients, and to assess the relation to anti- CCP. Methods: Fifty RA(24 smokers [8 active and 16 passive] and 26 nonsmokers) were enrolled in the study. the Modified Health Assessment Questionnaire (MHAQ), Simplified Disease Activity Index (SDAI) and Disease Activity Score (DAS28) were evaluated. The anti-CCP was measured in serum and in bronchoalveolar lavage. Spirometry, oxygen saturation and high-resolution computerized tomography chest were performed. RESULTS: Regarding questionnaires, there is a statistically significant difference between smokers and nonsmokers with greater values in smokers. Regarding laboratory assessment, there is a statistically significant difference in erythrocyte sedimentation rate, rheumatoid factor and anti- CCP in serum and bronchoalveolar lavage (BAL) values between groups. Difference in oxygen saturation values is statistically significant between groups. Nonsmokers have 53.8% normal high resolution CT chest (HRCT) and 46.2% with nonspecific interstitial pneumonia (NSIP) pattern. Passive smokers have 31% normal HRCT, 68.8% NSIP pattern. Active smokers have 25% NSIP pattern and 75% with usual interstitial pneumonia (UIP) pattern with statistically significant difference between groups. Value of anti-CCP level in serum and BAL according to smoking status is statistically different between nonsmokers, passive smoking and smokers' patients. there is positive correlation in anti-CCP values in BAL and serum in relation to smoking index. There is also positive correlation in FEF25-75% values that indicate small airway affection in relation to Smoking Index. Conclusions: smoking may affect disease activity and affects pulmonary functions in RA detected with local anti-citrulline immunity.