AB0121

DOES CIGARETTE SMOKING INFLUENCE DISEASE ACTIVITY IN SEROPOSITIVE (ACPA POSITIVE) PATIENTS WITH EARLY RHEUMATOID ARTHRITIS?

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Background: Many studies revealed that cigarette smoking is correlated with more active and severe Rheumatoid Arthritis (RA), mainly through the presence of positive RF or ACPA [1].

Objectives: To investigate the influence of cigarette smoking, in disease activity, in a cohort of Greek patients with ACPA positive early RA.

Methods: From January 2000 until December 2019, 137 patients with seropositive early RA (disease duration ≤ 3 months), and under the age of 75 years old, were diagnosed and subsequently were followed-up as outpatients in Rheumatology Unit of our hospital. All of them were treated by the same therapeutic protocol, were followed-up every 3 months and had at least one visit during 2019. Demographic, therapeutic, clinical and laboratory parameters were evaluated at the time of diagnosis and in every follow-up. At the end of the study we re-evaluated the above parameters, dividing patients in smokers and non smokers.

Analysis were performed using Student's t-test and non-parametric Mann-Whitney was used to estimate differences between mean values. Pearson's and Spearman's correlations were used, based on the variable's normality of distribution with the "Enter" method was used to identify the statistically significant predicting factors of DAS28/associations with DAS28.

Results: Mean age of our cohort were 57 ± 10.2 years and 76.6% were females. From 137 patients 55 were current smokers.

Univariable analysis at the time of diagnosis revealed, that current smokers presented with more tender ($p < 0.001$), more swollen joints ($p < 0.001$) and higher levels of CRP ($p < 0.001$). Also current smokers presented with higher disease activity measuring by DAS28 4v, than non smokers (6.2 ± 1.0 vs 5.6 ± 0.9 respective, $p < 0.001$). At the end of the study there were not found differences between the two groups.

Multivariable analysis revealed that high DAS-28 was correlated with the intensity of smoking ($p = 0.049$).

Concerning the presence of extra-articular manifestations, smokers were presented more often with rheumatoid nodes ($p = 0.026$).

Conclusion: Current smokers presented with more active disease at the time of diagnosis and have more often rheumatoid nodes. After the establishment of treatment there were no differences in disease activity between smokers and non smokers.

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AB0122

THE NORA PROJECT - PREDICTION OF THERAPY RESPONSE IN RHEUMATOID ARTHRITIS

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Background: Personalized medicine in Rheumatoid arthritis (RA) especially regarding therapy response is still in early stages. The Nordic RA (NORA) project is aiming to improve the prediction of therapy outcome by combining established serologic marker with new markers, genetic information and patient-derived data.

Objectives: As an initial step in the project the aim was to select clinically characterized patient cohorts and evaluate if changes or patterns in serological markers could predict therapy response and/or disease progress.

Methods: The ARCTIC (Aiming for Remission in rheumatoid arthritis: a randomised trial examining the benefit of ultrasound in a Clinical Tight Control regimen) study [1] was designed to compare two tight control treatment strategies for early Rheumatoid arthritis and was used as a first cohort. Plasma samples ($n = 1622$) from 224 RA patients from the ARCTIC study were included and taken at baseline and 3, 4, 6, 8, 10, 12, 14, 16, 20, and 24 months from trial start, and analyzed for the presence of EliATM RF (IgM, IgA, IgG), anti-CCP (IgG, IgA) and anti-RA33 (IgM, IgA, IgG) autoantibodies, as well as Calprotectin using the EliA instrument platform (Phadia AB, Uppsala, Sweden). In addition, a custom-made multiplex chip (Thermo Fisher Scientific, Sweden) [2] was used for measurement of anti-IgG antibodies against RA-specific antigens (citrullinated, acetylated and

carbamylated), and established CTD-markers (Connective Tissue Disease), e.g. Ro52/60 and dsDNA. The citrullinated peptides on the multiplex chip were both multiple as well as single citrullinated at different positions within the peptide sequence. Additionally, we included an ELISA to measure antibodies against native human collagen II [3].

Results: The different single assays in the baseline samples varied between 7 – 80% positive test results, e.g. anti-CCP IgG 80%. For some patients we could see changes in levels for anti-CCP, RF and anti-RA33 in the follow up samples, which varied from negative to more than 3-10xULN (Upper Limit of Normal). For anti-CCP IgG we found 9 patients (4%), who changed from negative to positive (patient 1-5) or from positive to negative (patient 6-8), while patient 9 had a peak at visit 6 (=12 months) and declined afterwards (figure 1). In addition, the above mentioned 9 patients showed clear changes in signal strength for the markers included on the multiplex chip and followed a similar pattern as the anti-CCP IgG signal. Different antibody patterns against single citrullinated peptides were observed and number of ACPA-positive peptides correlated with IgG anti-CCP levels.

Figure 1. Anti-CCP IgG value normalised to cutoff (blue line) for patient 1 to 9. The heatmap visualizes the change over time in anti-CCP IgG signal with dark blue showing negative results and orange/red showing results $>5 \times \text{ULN}$.

Anti-Collagen II antibodies (anti-CII) were detected in 15% of the baseline samples and in most cases declined over time. Two patients showed low baseline anti-CII levels that increased in the follow up samples. The changes in serological markers and the different reactivity patterns could possibly correlate with clinical outcome and define subgroups of patients with different response to therapy. Results could be repeated in RA patients from the NOR-VEAC [4] cohort. At baseline 73% of the 106 RA patients had a positive anti-CCP IgG result and 11 patients (10%) showed a significant change of anti-CCP IgG level over time.

Conclusion: Different response patterns and changes in serological antibody levels over the first 24 months after RA diagnosis could possibly reveal subgroups of patients with different prognosis and response to treatment. Further evaluations in additional treatment cohorts and correlation with clinical data are ongoing.

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AB0123

ANXIETY AND DEPRESSION DURING RHEUMATOID ARTHRITIS

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Background: Although the management of rheumatoid arthritis (RA) has been booming since the advent of biological treatments, the consequences of this disease remain multiple, both physical and psychological.