OP0111  MICRO-STRUCTURAL CHANGES ASSOCIATED WITH ANTI-CITRULLINATED VIMINENT AUTOIMMUNITY IN RA - AT-RISK INDIVIDUALS PRECIPITATE THE ONSET OF RHEUMATOID ARTHRITIS

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Background: Development of rheumatoid arthritis (RA) is characterized by a several years lasting phase of autoimmunity, characterized by the presence of anti-modified protein antibodies (AMPA), recognizing citrullinated, carbamylated or acetylated proteins, as well as rheumatoid factor (RF) which precedes the onset of clinical disease [1,2]. High resolution peripheral quantitative (HR-pQCT) technique enables the depiction of small cortical changes in peripheral joints (3). Objectives: To describe microstructural bone lesions in rheumatoid arthritis (RA) at-risk individuals using HR-pQCT technique, their relation to rheumatoid arthritis specific autoimmunity, particularly osteoclast-inducing citrullinated vimentin (cVIM) antibodies and their impact on the later development of RA. Methods: Cortical micro-channels (CoMiCs) as well as volumetric cortical and trabecular bone densities were analyzed by high-resolution computed tomography in the hand joints of RA at-risk individuals. Anti-modified protein antibody (AMPA) response was profiled including reactivities against citrullinated proteins (vimentin, enolase, fibrinogen) as well as carbamylated and acetylated vimentin. All subjects were followed for the development of RA.

Results: RA at-risk subjects (all N=75) with high-level (>1000U) cVIM antibodies showed a broader AMPA response and significantly more severe microstructural changes (higher CoMiCs, lower cortical and trabecular bone volume) compared to subjects with low/no cVIM reactivity. High cVIM antibodies and microstructural changes (>15 radial CoMiCs/joint) were associated with the presence of arthralgia. Furthermore, progression to RA was high in subjects with high cVIM (53%) vs. those with low (22%) or no (5%) antibodies and those with microstructural changes (46%) vs. those without such changes (16%). Conclusion: cVIM antibodies are associated to microstructural changes in RA at-risk individuals and predict the onset of RA. These data support the concept of structural priming of joints by autoimmunity before the onset of RA.

REFERENCES:

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OP0119  THE PRE-TREATMENT GUT MICROBIOME PREDICTS EARLY RESPONSE TO RHEUMATOID ARTHRITIS THERAPY

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Background: Early treatment initiation in rheumatoid arthritis (RA) is fundamental to avoid chronic joint destruction and disability. Despite remarkable advances in RA therapeutics, oral methotrexate (MTX) remains the anchor drug and mainstay of treatment worldwide (1,2). However, MTX bioavailability has a wide inter-individual variability and >50% of patients with moderate or severe RA show no or suboptimal improvement in their symptoms in response to MTX (1,3). The reasons for these disparities in treatment response remain unclear. Prior studies have shown that the biotransformation of MTX is altered in germ-free and microbiome-