assessed using ImageJ software (National Institutes of Health, Bethesda, MD, USA). At least three random fields were evaluated for each type of ST, quantifying the expression of INHBA, TNF-α, MMP12 and CD209 in all segmented CD163$^+$macrophages. Macrophages density was normalised based on selected tissue area(mm^2). After background subtraction, data were plotted using GraphPad software (GraphPad Software, La Jolla, CA, USA).
Results: CD163$^+$ sublining (SL) macrophages from UA-RA expressed abundantly the INHBA-encoded activin A, whereas TNFα and MMP12 were variably detected. Regarding the M-CSF-associated marker CD209, 2 populations of CD163$^+$ macrophages were found in the SL of UA-RA, CD163$^+$CD209$^+$ and the other CD163$^+$CD209$^-$, with higher than 100 arbitrary units (au) for CD163$^+$CD209$^+$ and lower than 100 au for CD163$^+$CD209$^-$. Similarly, INHBA, MMP12 and TNFα expression and 2 populations of CD209 were detected in CD163$^+$ macrophages from UA-PsA. Macrophage density was also found comparable between UA, with 650/mm^2 in UA-RA and 649/mm^2 in UA-PsA. Quantification of the above indicated markers in CD163 +ST macrophages from established RA and PsA revealed similar levels of INHBA, TNFα, MMP12 and CD209 than those from UA-RA and UA-PsA.
Conclusions: This study shows for the first time that the polarisation state of ST CD163$^+$ macrophages in UA progressing to RA and PsA is similar to that of established RA and PsA in terms of INHBA, MMP12, TNFα and CD209 expression. Therefore, the inflammatory polarisation state of macrophages is similar in RA and PsA and it is already detected at the earlier steps.

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AB0089 HISTOPATHOLOGICAL CHANGE CAUSED BY BIOLOGICAL TREATMENT IN RHEUMATOID ARTHRITIS SYNOVIAL TISSUE

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Background: Multiple studies addressing the effects of biologics on the synovial tissue in rheumatoid arthritis (RA) patients have been reported. There are, however, few studies comparing histopathological changes in the synovial tissue in the same RA patients between before and after biologics treatment.
Objectives: We examined biologics impacts on RA synovial tissues based on pathological findings in them collected during surgeries for the same patient before and after biological drug usage.
Methods: Synovial tissues were collected from 34 RA joints before and after biologics. The average age and disease duration of the study subjects were 64.0 and 22.5, respectively. Synovial tissues were evaluated by hematoxylin. Histopathological changes in the synovial tissues were compared based on Rooney's score, and presence or absence of fibrinoid degeneration and proliferation of villi in the subsynovial tissue. We examined correlation between pathological findings in RA synovium and disease activity under biologics. Disease activity was assessed by CDAI. We examined the Histopathological changes in the Remission, Low disease activity group (RL group) and Moderate disease activity (M group). Etanercept, Infliximab, Tocilizumab, Adalimumab and Abatacept was used as biological drug for 18, 6, 5, 3 and 2 joints respectively.
Results: Rooney score between before and after biological usage improved from 28.4 to 12.0 showing significant difference. Significant improvement in Rooney score was observed in all items. Fibrinoid degeneration was observed in 29 cases (85.3%) and 6 cases (17.6%) before and after biologics treatment, respectively, demonstrating a significant reduction with biologics treatment. Proliferation of villi was observed in 32 cases (94.1%) and 11 (32.4%) before and after biologics treatment, respectively, demonstrating a significant reduction with biologics treatment. After biologics treatment, Rooney's score in RL group and M group were 10.4 and 15.3, respectively, showing a statistically significant difference. In addition, the M group had significantly higher scores in lymphoid follicle and lymphocyte infiltration compared to the RL group.
Conclusions: The study results demonstrated that biologics treatment significantly ameliorated inflammatory changes in the synovial lining layers and sublining layers. In addition, the results suggested that histopathological findings in the sublining layers reflected disease activity.
Disclosure of Interest: None declared
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AB0090 VERBASCOSIDE AND HYDROXYTYROSOL DOWNREGULATE STRESS-RELATED PATHWAYS IN HUMAN OSTEOARTHRITIC ARTICULAR CHONDROCYTES

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Background: Osteoarthritis (OA), is a leading cause of joint dysfunction and the disease is characterised by progressive destruction of the articular cartilage.[1] At the molecular level, degeneration of the cartilage is attributed to multifactorial events including oxidative stress, mitochondrial dysfunction, apoptosis and associated changes in inflammatory and catabolic gene expression.[2] Recent studies have revealed the essential role of plant-derived antioxidants in preventing pathophysiological events observed in joint diseases by modulating redox signalling.[3]
Objectives: Here, we studied whether the polyphenolic compounds verbascoside and hydroxytyrosol exert chondroprotective effects by suppressing oxidative stress pathways and IL-1, IL-1β-converting enzyme (ICE) expression in human OA chondrocytes.
Methods: Chondrocytes were isolated from the joint cartilages of OA patients (grade 3–4) during total knee arthroplasty with the approval of Kecioren Training and Research Hospital, Clinical Research Ethics Committee (B.10.4. İSM.4.06.68.49), as described previously.[4] The alterations in cell counts, viability (MTT, NRU), proliferation (RTCA-iCELLigence System), reactive oxygen species (ROS) generation, stress-related signalling proteins and inflammatory progenitors ICE/caspase-1 (ELISA) were determined.
Results: Cell viability was increased at lower concentrations of hydroxytyrosol in OA chondrocytes (P1, 30th day). On the other hand, verbascoside treated cells did not show any difference in the activity of mitochondrial oxidoreductases by the MTT assay. However, both polyphenols significantly increased proliferation and reduced intracellular ROS generation in OA chondrocytes at lower concentrations. Although verbascoside has no effect on ICE/caspase-1, treatment with hydroxytrosol downregulated ICE/caspase-1, indicating a potential anti-inflammatory effect. Both polyphenols modulated the activation of stress activated signalling pathways via p38 and JNK proteins.
Conclusions: At low concentrations the antioxidants hydroxytyrosol and verbascoside may have potential chondroprotective effects in OA.

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AB0091 MECHANICAL EXPOSURE AND DIACEREIN TREATMENT MODULATES INTEGRIN-FAK-MAPKS MECHANOTRANSDUCTION IN HUMAN OSTEOARTHRITIS CHONDROCYTES

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Background: Progression of osteoarthritis (OA) is characterised by destruction of articular cartilage, thickening of subchondral bone, and formation of osteophytes. The disease modifying OA drug (DMOAD) diacerein functions as a slow acting drug through anti-inflammatory, anti-catabolic, and pro-anabolic effects on cartilage and the synovial membrane. Mechanical loading of joint tissue directly affects the homeostasis of matrix degrading enzyme production and matrix repair.