**AB0028**  
ACTIVATED STROMAL CELLS INDUCE CCL20 RELEASE AND T CELL MIGRATION  
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**Background:** Although the role of IL-23/Th17 axis in psoriatic arthritis (PsA) is well-known, 1 little data is available on the contribution of stromal cells to this pathway. Enthesitis is a common feature of PsA and it may represent the site of onset, 2 suggesting tendon stromal cells (tenocytes) may have an initiating role in Th17 driven pathogenesis.  

**Objectives:** To assess the ability of stromal cells to produce CCL20, a chemokine able to recruit T cells, and to induce T cell migration.  

**Methods:** Healthy tenocytes cultured from hamstring tendons and fibroblast-like synoviocytes (FLS) from PsA patients were stimulated with human recombinant IL-1b (1 ng/ml) and IL-17A (1, 10 and 100 ng/ml). Expression of CCL20 transcript and protein were assessed by quantitative PCR and ELISA, respectively. T cell migration assays were performed with magnetically enriched CD3+ cells from peripheral blood of PsA patients and healthy controls using a Transwell system. Following incubation with conditioned media from stimulated stromal cells, the migrated cells were harvested and analysed via light microscopy and flow cytometry.  

**Results:** Both tenocytes and FLS were able to produce CCL20 following stimulation with IL-1b. Furthermore, the addition of IL-17A induced a synergistic effect with IL-1b. Following cytokine stimulation, diseased stromal cells produced greater levels of CCL20 compared to stimulated healthy tenocytes. In addition, conditioned media from stimulated tenocytes promoted T cell migration, compared with supernatants from unstimulated tenocytes.  

**Conclusions:** We have shown that tendon and PsA synovium stromal cells are able to produce CCL20 and induce T cell recruitment, suggesting a role in the chemotaxis of Th17 cells. The positive feedback observed with IL-1b and IL-17A suggests a close relationship between stromal cells and Th17 cells.  

**REFERENCES:**  

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**AB0030**  
TARGETING NF-kB SIGNALLING IN B CELLS: A POTENTIAL NEW TREATMENT MODALITY FOR ANCA-ASSOCIATED VASCULITIS  
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**Background:** The pivotal role of B cells in the pathogenesis autoimmune diseases such as ANCA-associated vasculitides (AAV) is well-established and further substantiated by beneficial therapeutic effects of rituximab (anti-CD20 B cell targeting) in AAV. However, this results in prolonged B cell depletion while long-lived plasma cells are not targeted. Thus, there is a need for novel therapeutics targeting the B-cell lineage in AAV. NF-kB signalling pathways that act downstream of various B cell surface receptors, including the B cell antigen receptor, CD40, BAFFR and TLRs, are crucially involved in B cell responses and may be suitable as novel targets.  

**Objectives:** To identify whether inhibition of NF-kB signalling by novel pharmacological inhibitors is effective in targeting B cell responses in general and more specifically blocks (auto)antibody production and plasmablast differentiation in B cells from AAV patients.  

**Methods:** PBMC and sorted B cells from AAV patients and healthy donors were cultured with T cell-dependent (anti-IgM + anti CD40+ IL-21) and T cell-independent (CpG +IL-2) B cell proliferation. In addition, B cell differentiation towards plasma blasts (CD27+/CD38+) and functional antibody production was attenuated by specific blockers (auto)antibody production and plasmablast differentiation in B cells from AAV patients.  

**Results:** In B cells of AAV patients and healthy donors, targeting of NF-kB and IKK signaling significantly reduced T cell-dependent (anti-IgM +anti CD40-IL-21) and T cell-independent (CpG +IL-2) B cell proliferation. In addition, B cell differentiation towards plasmablasts (CD27+/CD38+) and functional antibody production was attenuated by both IKK and IKK inhibitors. Interestingly, the effects of NF-kB inhibition appeared to be B cell-specific as T cell proliferation was largely unaffected.  

**Conclusions:** These data demonstrate that inhibition of NF-kB signalling in AAV B cells results in the modulation of various B cell responses. Ongoing studies will indicate whether targeting of NF-kB signalling in B cells may be an effective novel treatment modality for AAV.  

**Disclosure of Interest:** None declared  

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**AB0029**  
CHARACTERISTIC PATTERNS OF HLA PRESENTATION AND T CELL DIFFERENTIATION IN ADULT-ONSET STILL’S DISEASE  
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**Background:** The role of T cells in AOSD pathogenesis remains controversial. In autoinimmune and auto-inflammatory diseases, such as rheumatoid arthritis (RA) and Behçet’s disease, a human leukocyte antigen (HLA)-restricted T cell response to antigen has been shown to affect disease progression, with several HLA alleles strongly associated with disease severity.  

**Objectives:** In this study, we investigated the frequencies of cells presenting HLA-DP, DO, and DR, as well as differentiated T cell populations including naïve and effector memory T cells in peripheral blood leukocytes (PBLs) of patients with AOSD. Frequencies of the markers were then compared based on clinical outcomes and disease activity, to better understand the role of these cell populations in the pathogenesis of AOSD.  

**Methods:** This study enrolled 14 active AOSD patients, 20 rheumatoid arthritis (RA) patients, and 20 healthy controls (HC). The percentage of surface-stained cells presenting HLA–DP, DP, and DR, and the proportions of differentiated T cell populations in peripheral blood leukocytes (PBLs) were measured by flow cytometry.  

**Results:** Patients with AOSD exhibited significantly higher percentages of lymphocytes presenting HLA–DP and HLA-DR, and lower percentages of cells presenting HLA–A-DQ, than patients with RA or HC. The proportions of CD4+, CD4+CD27+, CD4+CD27−, and CD4+CD62L− cells in PBLs were decreased in patients with AOSD relative to patients with RA or HC. In contrast, AOSD patients exhibited increased proportions of CD8+ naïve T cells in whole blood relative to patients with RA or HC. The proportions of CD8+ effector memory T cells, CD8+ naïve T cells, and CD8+ effector memory T cells in whole blood cells and CD8+ effector memory T cells in lymphocytes were significantly associated with systemic score.  

**Conclusions:** While the frequencies of CD4+, CD8+, CCR7+, CD4+CCR7+, CD4+CD62L−, and CD8+CD62L− cells were significantly decreased in patients with AOSD, the frequency of CD8+ naïve T cells was elevated in patients with AOSD, and correlated with systemic score. Additional studies in a larger cohort of patients will be necessary to evaluate the role of these markers in the pathogenesis of AOSD.  

**Disclosure of Interest:** None declared  

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**AB0031**  
DEEP IMMUNE-PROFILING OF CD4+ T CELLS IN BEHÇET’S DISEASE  
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**Background:** Functionality and immune-phenotypes of the human CD4+ T-cell compartment in Behçet’s disease (BD) are under-investigated, but several lines of evidence point to its relevance in the pathogenesis, progression and remission of the disease.  

**Objectives:** To investigate the immune-profiles of CD4+ T cells in BD patients.  

**Methods:** PBMC and CD4+ T cells from BD patients and healthy controls were cultured with T cell-dependent (anti-IgM + anti CD40+ IL-21) and T cell-independent (CpG +IL-2) B cell proliferation. In addition, B cell differentiation towards plasmablasts (CD27+/CD38+) and functional antibody production was attenuated by specific blockers (auto)antibody production and plasmablast differentiation in B cells from AAV patients.  

**Results:** In B cells of AAV patients and healthy donors, targeting of NF-kB and IKK signaling significantly reduced T cell-dependent (anti-IgM +anti CD40-IL-21) and T cell-independent (CpG +IL-2) B cell proliferation. In addition, B cell differentiation towards plasmablasts (CD27+/CD38+) and functional antibody production was attenuated by both IKK and IKK inhibitors. Interestingly, the effects of NF-kB inhibition appeared to be B cell-specific as T cell proliferation was largely unaffected.  

**Conclusions:** These data demonstrate that inhibition of NF-kB signalling in AAV B cells results in the modulation of various B cell responses. Ongoing studies will indicate whether targeting of NF-kB signalling in B cells may be an effective novel treatment modality for AAV.  

**Disclosure of Interest:** None declared  

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AB0032

B-CELL SUBPOPULATIONS IN NEWLY DIAGNOSED EORA AND YORA PATIENTS

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Background: B-cells are thought to have an important role in rheumatoid arthritis (RA). This is demonstrated by the success of B-cell depleting therapy as well as the negative prognostic value of anti-citrullinated protein antibodies (ACPA)1, 2. However, the pathogenesis of the disease is unclear. Studies have suggested that there are differences in disease characteristics between elderly-onset RA patients (EORA) defined by disease onset at ≥60 years of age) and younger-onset RA patients (YORA, with disease onset <60 years of age) and younger-onset RA patients (YORA, with disease onset <60 years of age) and younger-onset RA patients (YORA, with disease onset <60 years of age) and younger-onset RA patients (YORA, with disease onset <60 years of age)

Objectives: Our aim was to study the B-cell subpopulations in newly diagnosed EORA and YORA patients. We investigated whether there were differences in B-cell subpopulations between the groups and whether there was a correlation between B-cell subpopulations and disease activity, autoantibody profile and inflammatory parameters in these two RA patient groups.

Methods: Treatment-naive EORA (n=29) and Yora (n=31) patients with newly diagnosed RA were included at their first visit to the Rheumatology clinic. The percentage of CD19+CD27+CD24-CD278+ autoantibody positive B cells in peripheral blood were assessed. Flow cytometry was used for the analysis of cellular surface markers on leukocytes in peripheral blood: CD19, CD27, CD24, CD278, PD-1, PD-L1, IgG, IgD and IgM. Non-parametric tests were used for comparing groups and Spearman's test was used for correlation.

Results: There was neither a correlation between age and ACPA titer nor between age and memory B cell populations. We did not find any significant difference between the B cell subpopulations in the two patient groups.

Conclusions: Our results suggest that the memory B cell compartment in peripheral blood in EORA patients reflects the ACPA titer. This was not seen in the YORA patients. The mechanisms behind these findings need to be further elucidated.

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Disclosure of Interest: None declared

AB0033

B REGULATORY CELLS POSITIVELY CORRELATE WITH ANTIBODIES AGAINST SS-A/RO52 IN SYSTEMIC SCLEROSIS

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Background: We and Japanese Investigators have shown that IL-10-producing regulatory B cells (B10) cells are decreased in systemic sclerosis (SSc)1, 2, 3. Contrary to the Japanese, we did not find a negative correlation between B10 cells and SSc-specific autoantibodies (autoabs) against centromere, Sc-70 or RNA polymerase III.4 Since we found anti-Ro52 SS-A antibodies in approx. 30% of patients with SSc,5 this being the 3rd most frequent autoantibody in this disease, we considered what is the relation of B10 cells with anti-Ro52 antibodies. Objectives: We examined the number and function of Bregs in SSc in relation to anti-Ro52 autoabs.

Methods: Serum samples and PBMCs were collected from 40 SSc patients (15 anti-ScI-70, 20 anti-CEN5 and 5 anti-RNA pol III) and were further divided according to anti-Ro52 positivity into 22 anti-Ro52(+) and 18 anti-Ro52 (-). All serum samples were tested for the presence of disease-specific autoantibodies against ScI-70, CENP, RNA-pol, and against Ro52 using a line assay (Euroimmun Germany). The function of Bregs was determined by the ability to express IL-10 following activation with CD3 and TLR-9. Percentages of transitional (CD19+CD24highCD38high) and memory (CD19 +CD27+CD24high) Bregs were assessed by flow cytometry using fluorochrome conjugated antibodies (BD Biosciences).

Results: IL-10(+) Bregs (B10) were significantly elevated in SSc patients (6.7%±2.6% n=15) with high titre antibodies against Ro52 (mean anti-Ro52 arbitrary units AU >100; positivity cut-off AU >20) compared to patients (4.2%±1.9%, n=22) totally negative for Ro52 (mean AU <10) (p=0.03). Transitional Bregs were also significantly increased in all SSc patients tested positive for anti-Ro52 autoantibodies (7.5%±1.9%) compared to SSc patients negative for anti-Ro52 autoantibodies (3.7±0.8, p=0.02). Furthermore, transitional Bregs positively correlated with anti-Ro52 antibody levels (r²=0.39, p=0.01). In contrast, memory Bregs were not significantly different between anti-Ro52 positive (14.1%±2.7%) and -negative SSc patients (11.8%±2.2%) (p=0.05).

Conclusions: IL-10-producing Bregs are higher in SSc patients with high anti-Ro52 antibodies and transitional Bregs correlated with anti-Ro52 antibodies in patients with SSc suggesting that this autoantibody could be a potential marker of Breg efficiency.

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