PO.3.73 SOLUBLE CD200 CONCENTRATION IN SERUM IS INCREASED IN SLE PATIENTS AND CORRELATES WITH ANTI-DSDNA

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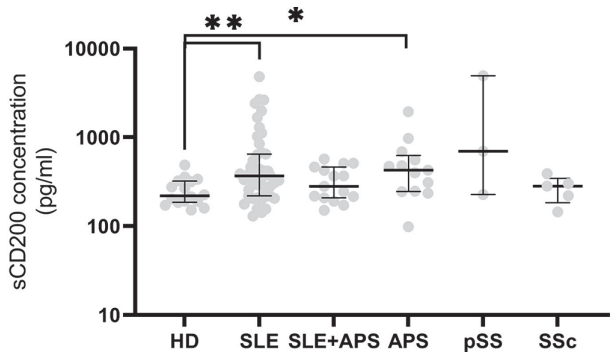
Purpose Immune inhibitory receptors are important in maintaining immune homeostasis and preventing autoimmunity. We recently showed that the function of immune inhibitory CD200 Receptor (CD200R) changes in systemic lupus erythematosus (SLE) patients. In a subset of SLE patients, CD200R function switches from inhibiting to potentiating Toll-like receptor (TLR)-7/8-induced interferon gamma production. In this study, we aim to clarify the role of CD200 in the pathophysiology of systemic autoimmune disease and study its potential as a marker for disease. We investigate the expression of CD200R and its ligand CD200 in SLE and other interferon related systemic autoimmune diseases. In addition, we determine the concentration of soluble CD200 (sCD200) in systemic autoimmune disease. sCD200 can be both a functional ligand for CD200R, or a decoy ligand that competes for CD200R binding with cell-bound CD200. Lastly, we correlated sCD200 and sCD200R with disease manifestations in SLE patients.

Methods We studied CD200R and CD200 expression in patients with SLE, antiphospholipid syndrome (APS), primary Sjögren's syndrome (pSS), and systemic sclerosis (SSc). We determined CD200 and CD200R expression in different cell subsets with flow cytometry. In addition, we measured sCD200 and sCD200R with ELISA in serum from SLE patients, and correlated concentrations with clinical disease manifestations.

Results We found an increased CD200R expression on monocytes of patients with SLE compared to healthy donors, while CD200 expression is decreased. CD200R expression is increased on T-cells and granulocytes from SLE, pSS and APS patients compared to healthy donors.

In addition, sCD200 concentration is elevated in serum from patients with SLE and APS compared to serum from healthy donors. sCD200 positively correlates with anti-dsDNA concentrations in SLE patients (r=0.45, p 0.002), but not with SLEDAI, renal involvement or complement (C3/C4) concentrations.



Abstract PO.3.73 Figure 1 Soluble (s)CD200 concentration is increased in serum from patients with SLE and APS compared to healthy donor serum. *p<0.05, **p<0.005

Conclusions CD200R expression is increased on monocytes, T cells and granulocytes of SLE patients and other interferon-related auto-inflammatory diseases. sCD200 concentration in serum was increased in SLE and APS patients, which correlates with anti-dsDNA concentrations in SLE.

Our study shows that differences in CD200/CD200R expression are not specific for SLE, but present in other interferonopathies. Therefore, they might be related to common underlying disease mechanisms in systemic autoimmunity. For future studies, it would be of interest to investigate the CD200R:CD200 axis in relation to the interferon signature, or formation of neutrophil extracellular traps (NETs).

Thursday 06 October 2022 from 13:00 to 14:10

PO.4 E- POSTER SESSION 4: disease activity measurements, flare and remission, epidemiology, etiology, genetics, epigenetics

PO.4.75 THE ANTI-BDCA2 ANTIBODY BIIB059 IMPROVES JOINT AND SKIN MANIFESTATIONS IN PATIENTS WITH SLE AND BOTH ACTIVE ARTHRITIS AND RASH

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Purpose BIIB059, a humanised monoclonal antibody targeting BDCA2, significantly reduced total active joint count versus placebo at Week 24 in patients with SLE in Part A of a Phase 2 study (NCT02847598). Changes in both joint and skin disease activity were assessed post hoc in a subset of patients with both arthritis and rash at baseline.

Methods Adults with SLE diagnosis, active arthritis and skin manifestations were randomised to receive BIIB059 450 mg or placebo subcutaneously. This post-hoc analysis included patients with both arthritis and rash based on baseline SLEDAI-2K, or BILAG-2004 musculoskeletal and mucocutaneous Grades A or B at baseline. In contrast to the previously reported primary analysis, there was no additional requirement for either skin disease activity or joint counts at baseline. The proportions of patients who improved in both domains (defined as absence of arthritis and rash by SLEDAI-2K, or improvement by ≥1 grade in BILAG-2004 musculoskeletal and mucocutaneous systems) were assessed at Week 24. Total joint count (evaluated by 28-joint assessment) and CLASI-A scores were assessed at baseline and Week 24.

Results The total numbers of patients included in this analysis were 61 and 52 (SLEDAI-2K), and 54 and 44 (BILAG-2004) for the BIIB059 and placebo treatment groups, respectively. At baseline, mean total joint count ranged between 11 and 12, and mean CLASI-A score ranged between 10 and 11 in both subpopulations. At Week 24, the proportions of patients with neither arthritis nor rash by SLEDAI-2K were

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