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| **Contact details:**  Name:  C Lindelauf (1,2), GT Rijkers (1,2), H Adams (3, 4), JC Grutters (3), and B Meek (2).  Institute/ Organization:  1) Department of Science, University College Roosevelt, Middelburg, The Netherlands  2) Laboratory for Medical Microbiology and Immunology, and 3) Department of Pulmonology, St Antonius Hospital, Nieuwegein, The Netherlands  4) Green Heart Hospital, Gouda, The Netherlands  **Address**  Street: Jacob Roggeveenhof 17  Postal code: 4333AZ  Country: The Netherlands  Phone number: 0655887516  Email address: ciskalindelauf@gmail.com |
| **Title: Cytokine profiles during the recovery phase of rituximab treatment in patients with interstitial pneumonitis.** |
| 1) Background and aim: Immune mediated inflammatory disease (IMID) patients with interstitial pneumonitis (IP) were treated with rituximab and afterwards monitored for repopulation of B lymphocytes.  2) Methods: Peripheral numbers of lymphocyte subpopulations and B-cell compartments were measured, and a panel of cytokines and pneumokines was measured with a Human Magnetic Luminex Assay.  3) Results: At baseline - i.e. before start of treatment - the majority of patients displayed lymphocytopenia, an expanded naïve B-cell compartment, and elevated serum levels of BAFF, CA 15-3, CD40L, IL-18, PARC, sIL2R and SP-D. Following rituximab treatment, B-cell depletion occurred in the majority of patients, and was associated with a significant, but temporary increase of other lymphocyte compartments. Serum levels of BAFF and CD40L increased significantly in response to B-cell depletion (2.9 and 1.5 fold, respectively), while the inflammation marker sIL2R significantly decreased.  4) Conclusion: The lowering of sIL2R indicates rituximab has suppressed inflammation in IMID-IP patients. Cellular and serological data will be combined with clinical response for the overall evaluation. In follow-up we will examine the relation between CD40L expression on CD4+ T-lymphocytes and serum levels of CD40L. |