Reviewer's report

Title: Lymphocyte and monocyte flow cytometry immunophenotyping as a diagnostic tool in uncharacteristic inflammatory disorders

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Reviewer: Kerstin Steinbrink

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In the interesting manuscript "Lymphocyte and monocyte flow cytometry immunophenotyping as a diagnostic tool in uncharacteristic inflammatory disorders" the authors analyzed whole blood samples obtained from patients with gram-negative bacteraemia, neuroborreliosis, tuberculosis, acute EBV infection, influenza, or systemic autoimmune diseases by flow cytometry. Activation (HLA-DR expression on T cells and CD40 on monocytes) and total cell numbers were investigated. They found an increase of CD40+ monocytes in gram-negative bacteraemia and EBV infection and a dominance of CD4+ T cells in bacterial vs CD8+ T cell in viral infection. Analyses of blood from patients suffering from autoimmune diseases revealed an activation of both T cell populations without any preference.

Major compulsory revisions:

Comments:

1. The authors did not mention the number of the patients and healthy volunteers included in this study. They mixed up acute and chronic bacterial and viral infection and a further group of patients with autoimmune diseases without giving any information about the precise diagnosis. I would recommend to use the term mixed connective tissue disorders instead of collagenosis (which as perforating collagenosis is defined as a heterogeneous group of dermatological diseases characterized by transepidermal elimination of collagen).

2. For validation of the results of their study, they have to calculate the relation between the absolute number of the various cell populations and the percentage of the analyzed surface molecules. Increasing T cell rates, e.g. of CD8+ T cell in viral infection, may result in identical absolute numbers of positive cells.

3. The increase in the expression of activation parameters as HLA-DR and CD40 is well known in infectious diseases and previously reported as well as the more pronounced effects in acute infections as compared to chronic forms. In addition, it was already demonstrated by several groups that most viral infections are CD8+ dominated and that activation of monocytic cells contribute to infectious diseases. Therefore, the authors should emphasize and discuss the novelty and originality of their study and results.

Level of interest: An article of importance in its field
Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I declare that I have no competing interests.