AB0020

COMPARATIVE DESCRIPTION OF CYTOKINES AND MATRIX METALLOPROTEINASES IN A GROUP OF PATIENTS WITH RHEUMATOID ARTHRITIS AND OSTEOARTHRITIS UNDER A STRICT FOLLOW-UP COMPARED WITH COVID-19 PATIENTS

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Background: COVID-19, rheumatoid arthritis (RA) and osteoarthritis (OA) are autoimmune diseases that affect the secretion of cytokines related to the stimulation of the inflammatory response.

Objectives: To identify the differences in the cytokine and matrix metalloproteinases (MMP) profile within one acute infectious disease and two chronic inflammatory rheumatic diseases.

Methods: Analytical cross-sectional study. RA patients under a strict follow-up program (T2T evaluated every two months), OA patients without strict clinical follow-up, evaluated once or twice a year, and COVID-19 patients were included. Eleven proteins (cytokines, MMPs and its tissue inhibitors) were quantified through Luminex multiplex assay in serum samples. Univariate and bivariate analyzes were performed. Approval of Ethics Committee and informed consent were obtained.

Results: A total of 108 patients with RA and OA were compared with 20 severe COVID-19 patients. There were no significant differences through the method of Kruskall–Wallis, between RA and OA patients. IL-1β and MMP-2 were significantly lower in COVID-19 patients. Levels of IL-10, IL-1RA, IL-6, MMP-1, MMP-9, and TIMP-1 were significantly higher in COVID-19 patients. There were no differences in TNF-A, TIMP-2 and INF-G. (Table 1)

Table 1. Significant correlations between cytokines related to Covid-19, RA and OA.

<table>
<thead>
<tr>
<th>Cytokine (pg/ml)</th>
<th>Median values</th>
<th>RA (%)</th>
<th>OA</th>
<th>COVID-19</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>IL-10</td>
<td>54.92</td>
<td>54.49</td>
<td>116.38</td>
<td>&lt;0.0001a</td>
<td></td>
</tr>
<tr>
<td>III-RA</td>
<td>62.19</td>
<td>51.82</td>
<td>110.08</td>
<td>&lt;0.0001a</td>
<td></td>
</tr>
<tr>
<td>IL-1β</td>
<td>67.09</td>
<td>55.30</td>
<td>46.17</td>
<td>0.045</td>
<td></td>
</tr>
<tr>
<td>IL-6</td>
<td>56.09</td>
<td>51.34</td>
<td>84.98</td>
<td>&lt;0.0001 0.003</td>
<td></td>
</tr>
<tr>
<td>TNF-A</td>
<td>17.5</td>
<td>14.6</td>
<td>16.3</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>MMP-1=</td>
<td>57.84</td>
<td>54.84</td>
<td>90.81</td>
<td>&lt;0.0001 0.045</td>
<td></td>
</tr>
<tr>
<td>MMP-2</td>
<td>30.38</td>
<td>30.59</td>
<td>48.56</td>
<td>0.040</td>
<td></td>
</tr>
<tr>
<td>MMP-3</td>
<td>66.25</td>
<td>58.16</td>
<td>86.4</td>
<td>0.007</td>
<td></td>
</tr>
<tr>
<td>TIMP-1</td>
<td>51.59</td>
<td>60.99</td>
<td>111.67</td>
<td>&lt;0.0001a</td>
<td></td>
</tr>
<tr>
<td>TIMP-2</td>
<td>45.2</td>
<td>47.7</td>
<td>49.6</td>
<td>NS</td>
<td></td>
</tr>
<tr>
<td>INF-G</td>
<td>5.75</td>
<td>5.32</td>
<td>3.07</td>
<td>NS</td>
<td></td>
</tr>
</tbody>
</table>


Conclusion: Compared with RA and OA patients, severe COVID-19 patients have a greater impact on the cytokines and MMPs described in this study, proving that COVID-19 patients suffer from a cytokine storm [1] when severely infected.

REFERENCES:


Disclosure of Interests: None declared

AB0021

FEATURES OF COMMON VARIABLE IMMUNODEFICIENCY COMBINED WITH RHEUMATOID ARTHRITIS

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Background: The prevalence rate of common variable immunodeficiency (CVID), the most common symptomatic form of primary immunodeficiency disease (PID), is growing every year. In the Republican Register of PID in the Chuvash Republic (Russia) there are 32 patients with CVID, 5 (15.6%) of whom have CVID combined with an autoimmune disease - rheumatoid arthritis (RA). The immunological studies occupy a large place in the diagnosis of PID and autoimmune diseases.

Objectives: The aim of the study was to search for immunological criteria for the differentiation of RA from CVID combined with RA.

Methods: The object of the study was two groups of patients. Group 1 consisted of 20 RA patients; group 2 consisted of 5 patients with CVID in combination with RA. Patients with CVID, who had the results of an immunological study conducted before the appointment of immunoglobulin replacement therapy, were selected for this study. The control group consisted of 20 practically healthy people.

Results: The significant changes were revealed in the concentration of serum immunoglobulins in the studied groups of patients, in particular, a sharp decrease in IgG levels in group 2 (1.9±0.3g/l vs. 15.2±2.3g/l in group 1, p<0.001). IgA (0.1±0.2g/l vs. 3.1±0.7g/l in group 1, p<0.001), IgM (0.2±0.3g/l vs. 1.7±0.2g/l in group 1, p<0.001). Immunoglobulin levels in both groups of patients were lower (0.001) compared to the control group. In both groups, the number of regulatory cells – Treg (CD4+CD25+FoxP3) was reduced: in group 1 - to 2.5±0.03%; in group 2 - to 2.3±0.02%, while in the control group it was 4.2±0.5%, p<0.001. The result of our study confirms that the development of RA and CVID is associated with the decrease in the number of Treg cells responsible for ensuring peripheral tolerance and preventing the development of autoimmune diseases.

Conclusion: CVID and RA have a common immunopathological sign - a decrease in the content of Treg cells in the blood. In the differential diagnosis between RA and CVID, combined with RA, it is necessary to rely on the results of the determination of immunoglobulins in the blood serum.

Disclosure of Interests: None declared

AB0022

SELECTIVE ESTROGEN RECEPTOR MODULATORS AND TISSUE-SELECTIVE ESTROGEN COMPLEX DO NOT SHARE ESTROGENIC EFFECTS ON IGG SIALYLATION IN AUTOIMMUNE CONDITIONS

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Background: Women entering menopause, with a decrease in estrogen levels, display an increased incidence of rheumatoid arthritis (RA). Estrogen (E2) treatment has beneficial effects on IgG pathogenicity by altering the sialylation grade which affect the binding ability to FcR. E2 replacement may therefore be beneficial in pre-RA patients having autoantibodies. Exposure to estrogen is associated with negative side effects, therefore selective estrogen receptor modulators (SERMs) have been developed with estrogenic protective effect on bone but minimal impact on the reproductive system. The SERM, Bazedoxifene (BZA), as well as tissue-selective estrogen complex (TSEC), a combination of conjugated estrogen and BZA, have been approved for treatment of postmenopausal bone loss.3–5

REFERENCES:


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