Session 2. Approaches to chronic viral infection and cancer cure

**Influence of the COVID19 disease on the course of Chronic lymphocytic leukemia**

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**Background:** The impact of the COVID19 disease on the course of chronic lymphocytic leukemia (CLL) is still not well understood, thought the large number of the research works were published. In the present work we aimed to analyze the associative relationships between the immunophenotypic characteristics of malignant B-cells, the immune response of the patients and concomitant coronavirus infection

**Materials & Methods:** analysis of gene expression at mRNA (qPCR) and protein (FACS and western blot analysis) levels; epidemiology (an analysis of clinical data and creation of the patient databases); bioinformatics (figshare.com, disgenet.org); statistics of non-parametric values with the help of GraphPad Prism (v.9) software.

**Results:** Using the bioinformatics analysis, we found that the characteristic changes in CLL patients with the COVID19 is the diminished concentration of IL10 in peripheral blood. Also, in the blood of CLL patients who contracted COVID and/or received vaccinations against SARS-CoV-2 the increased levels of pro-inflammatory cytokines (IL1-beta, IL6, IL8, IL17A and GFS1) positively correlates with the relative survival of patients. Of note, the TGF-β expression was significantly higher in CLL cells, compared to activated B cells of a healthy donor. As we reported earlier, SMAD2/3 is not active at basal levels in CLL cells, due to reduced or absent expression of SMAD genes. Now we continue experimental studies on an expression pattern of the above-mentioned genes at the mRNA and protein levels.

**Conclusions:** it is important, to continue our work on a systematic analysis of associations between CLL and COVID19. In result, we would be able to propose an approach to correct the personalized treatment of CLL patients in the future.

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