Hematological changes in Covid-19 infections

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The infection by COVID-19 (SARS-CoV-2) has been taking on proportions of pandemic characteristics. Preventive infection measures for this virus, as well as epidemiological, pathophysiological, diagnosis, and treatment knowledge in relation to it are extremely needed. The advances in diagnostic tests, whether in the detection of the antibody through "fast" tests, or in tests to identify the presence of the virus (using the technique of RT-PCR of respiratory samples from affected patients) are very important, as they help both in epidemiology, for case tracking and containment of outbreaks, as in the earlier diagnosis of the disease, leading to a favorable outcome, especially in severe cases. In this context, we are concerned about determining biomarkers that could be used in screening for diagnosis, as well as in monitoring the evolution of COVID-19 infections.

The complete blood count is the test used to approach infections that are very prevalent in Brasil, with emphasis on arboviruses, especially Dengue. The exam assesses hematopoietic lineage from a quantitative and qualitative viewpoint. In the Chinese population, studies have reported the presence of leukopenia on hospital admission, basically at the expense of moderate to severe lymphopenia and mild thrombocytopenia [2]. The review of studies that contained analyses of peripheral blood samples showed that a greater number of lymphopenic patients had the presence of reactive lymphocytes, of which a subset appeared to be lymphoplasmacytoid [2]. Thus, the monitoring of these hematological parameters is essential and can assist in the identification of patients who will need care in the Intensive care unit, as they presented a deeper lymphopenia, as well as a decrease in hemoglobin, absolute monocyte count and even tend to develop neutrophilia during hospitalization, with a peak in this period of ICU stay [FAN et al., 2020]. The presence of atypical or activated lymphocytes is not significant for the degree of infection, the main comorbidity of which is Acute Respiratory Distress Syndrome (ARDS). This contrasts with what is observed in severe dengue during the admission of patients from a referral hospital of Fortaleza, Brasil, and this parameter can have a screening function as a modulator of the evolution of the viral process in arboviruses [1]. The non-alteration of the erythroid lineage, such as hemoconcentration and a slight numerical alteration of platelets, when present, also contrasts with severe dengue [1]. Lymphopenia, which has also been documented in chikungunya [3], in covid-19, seems to be the most relevant peripheral hematopoietic alteration, its use being suggested as a severity biomarker of the infection. In this context, studies related to the evaluation of biomarkers of hematological parameters that can be used as screening for exam diagnosis, as well as monitoring the evolution of severe cases, when necessary.

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