



Abstract 5

Detection of Lymphocyte Subsets and Inflammatory Cytokines in Mild and Severe COVID-19 Patients

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Background and objective: The pandemic Coronavirus Disease 2019 (COVID-19) is the most threatening infectious disease nowadays that affecting people's health worldwide. The disease symptoms were attributed to infection with Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). The current article aimed to discriminate different lymphocyte subtypes and pro-inflammatory mediators in COVID-19 patients with an emphasis on variations in their levels in mild and severely infected individuals that might help in the disease early intervention. Subjects and methods: The count of the Cluster of Differentiation (CD)3+ T, CD4+ T, CD8+ T cells, B lymphocytes, and Natural Killer (NK) cells were measured in the blood of healthy control and COVID-19 people with mild and severe symptoms using a flow cytometer. The plasma levels of Nuclear Factor kappa B (NF- κ B), Tumor Necrosis Factor- α (TNF- α), Interleukin (IL)-6, IL-1 β , IL-8, Procalcitonin (PCT), and Platelet-Activating Factor (PAF) were also detected by Enzyme-Linked Immunosorbent Assay (ELISA). Results: Total lymphocyte count and lymphocyte subsets significantly decreased in the blood of COVID-19 patients with more decrements in severely infected patients. The inflammatory markers levels remarkably increased in COVID-19 patients with higher increments in severe COVID-19 infected patients. Conclusion: In conclusion, the reduced level of the lymphocyte subsets and the induced pro-inflammatory response were vital signs that were concomitant with COVID-19. Besides, they were associated with the severity of the diseases.

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