

Proinflammatory cytokine profiles of COVID-19 patients in Malaysia

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ABSTRACT

Introduction: Increase of cytokines is often associated with inflammatory condition during infections and in autoimmune diseases. A sudden increase of pro-inflammatory cytokines, also known as “cytokine storm”, can cause devastating damage on host cells as well as organs and has been frequently described in the recent COVID-19 infection. **Objective:** This study aimed to evaluate the levels of proinflammatory cytokines (IL-6, IL-8, TNF- α and IL-1 β) among COVID-19 patients in comparison with non-COVID-19 patients in Malaysia. **Materials and methods:** We retrospectively analysed the data of samples sent for cytokine panel test (IL-6, IL-8, TNF- α and IL-1 β) at Autoimmune Laboratory, Institute for Medical Research, Malaysia, from September 2021 until April 2022. A total of 58 samples were included in this study and were categorised into two groups: COVID-19 (37 samples) and non-COVID-19 (21 samples). Levels of cytokines were determined by microfluidic immunoassay system. **Results and conclusion:** Majority of the samples (75.9%) were from patients aged 17 and below, with the overall median age of 8 years. Between the two groups, COVID-19 patients had significantly higher cytokines levels (median IL-6: 25.2pg/ml; IL-8: 64.8pg/ml and TNF- α : 28.8pg/ml) compared with patients from non-COVID-19 (median IL-6: 9.5pg/ml; IL-8: 33.9pg/ml and TNF- α : 18.9pg/ml). As for IL-1 β , the levels were comparable between the two groups. The results of this study showed that higher levels of proinflammatory cytokines were released during COVID-19 infection as compared with non-COVID-19 cases.