

THE EFFECT OF AUTOLOGOUS ACTIVATED PLATELET-RICH PLASMA (aaPRP) THERAPY TOWARDS INFLAMMATORY CYTOKINE LEVEL IN SEVERE COVID-19 PATIENTS: A PRELIMINARY STUDY

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Abstract

Recent study showed that coronavirus disease 2019 (COVID-19) induced hyper inflammation response leads to cytokine storm. Autologous activated platelet-rich plasma (aaPRP) plays a fundamental role in respiratory disorders. This study aimed to evaluate the pro- and anti-inflammatory cytokines level in severe COVID-19 patients before and after aaPRP administration. We recruited six severe COVID-19 patients from Koja Regional Public Hospital and divided them into two groups which were control group and aaPRP group. Three doses of aaPRP diluted in 100 mL of 0.9% NaCl were given intravenously to the three patients on day 1, 3 and 5. We conducted a rapid multiplex cytokine assay to measure serum interleukin (IL)-6 and 10 on day 0, 4, and 6. We found that pro-inflammatory cytokine of IL-6 was gradually decreased in aaPRP group and increased in control group while anti-inflammatory cytokine level of IL-10 started in high level on both groups, and gradually decreased to normal range of aaPRP group on day 6. Based on these results, we can conclude that aaPRP therapy manage cytokine storm with stabilize the pro- and anti-inflammatory level in normal range.

Keywords: COVID-19, aaPRP, IL-6, IL-10, Cytokine