

Evaluation of the relationship between blood cortisol level and CRP level and lymphocyte count in patients with Covid 19 admitted to Kosar Hospital

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Abstract

Background and Aim: Changes in cortisol levels in patients with covid-19 are still unknown, on the other hand, the effect of cortisol levels on some inflammatory factors has been determined. One of the complications in covid 19 is cytokine storm, so, it is important to investigate the effect of cortisol on it. The present study aimed to determining of blood cortisol level and its relationship with lymphocyte and CRP levels in patients who hospitalized with covid-19.

Methods: In a prospective cross-sectional study, 40 patients who had confirmed COVID-19 based on PCR test or clinical symptoms were enrolled as a census sampling. Patients who were taking drugs that reduce or increase cortisol levels were excluded from the study. Blood cortisol measurement as well as the count of lymphocytes and quantitative CRP were performed in the form of routine tests in the first 24 hours of hospitalization, before any therapeutic intervention. The data was collected by a checklist and analyzed in the statistical software SPSS version 24 at a significance level of less than 0.05 by statistical tests including linear correlation coefficient, chi-square test, independent t test and logistic regression.

Results: Twenty-one patients were men and the rest women. The mean age of the participants was 56.62 ± 15.7 years (28-96 years). 28 patients had lymphopenia. Lymphocyte and leukocyte count, CRP, lung involvement in CT, cortisol level and length of hospitalization were not related to the gender of the patients. The lung involvement as well as the cortisol level was significantly lower in patients who did not need hospitalization in the ICU. There was a significant and inverse correlation between lymphocyte count with lung involvement and CRP level. There was a direct and significant correlation between age and cortisol level, and CRP level had a direct and significant correlation with the lung involvement. In people 60 years old and younger, the percentage of lung involvement based on CT scan findings and CRP level was significantly higher in patients who had leukopenia and leukocyte count was lower than it in patients who did not have leukopenia.