

Study of cytokines IL-6 and TGF- β 1 in peritoneal fluid of HIV infected and non-infected individuals

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Abstract

Background: Interleukin 6 (IL-6) and transforming growth factor beta 1 (TGF- β 1) are pro-inflammatory cytokines that play important roles in the regulation of inflammation. The predictive value of these cytokines for peritonitis in chronic inflammatory conditions of human immunodeficiency virus (HIV) infection and end stage kidney disease (ESKD) may be of interest in patients maintained on continuous ambulatory peritoneal dialysis (CAPD). The aim of the study was to determine the predictive value of (IL-6 and TGF- β 1) for peritonitis in HIV infected in contrast to non-infected individuals.

Methods: The study determined levels of IL-6 and TGF- β 1 in peritoneal dialysis (PD) fluid of 18 HIV positive and 18 HIV negative CAPD patients. The cytokine levels were measured by enzyme linked immunosorbent assay. The cytokines relationship was compared between the two groups using Mann-Whitney and unpaired t test. Logistic regression analysis was performed to assess the association of IL-6 and TGF- β 1 with demographic, clinical and laboratory parameters. These tests were part of the statistical package of social science (SPSS) Version 25 (IBM).

Results: There was no statistical difference observed in IL-6 and TGF- β 1 between the two groups ($p > 0.05$). However, TGF- β 1 was positively associated with peritonitis in participants with odd ratio and confidence interval of 6.052E+79 (46039.216-7.955E+154), ($p = 0.037$). The serum albumin levels were significantly higher in HIV negative than HIV positive participants (36 ± 0.67 vs 32 ± 1.21 g/dL), ($p = 0.0049$). Age, weight, serum urea, serum creatinine, temperature, hemoglobin (Hb), and white cell count (WCC) did not show any statistically difference between the two groups.

Conclusion: This study reports a positive association of TGF- β 1 with peritonitis. The albumin levels were associated with HIV infection.

Key words: Cytokines, ESRD, HIV, CAPD