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Serum P53 Protein and Total Lymphocyte Profile in Sepsis Patients Treated with Ciprofloxacin and Cefotaxime

Serum P53 Protein and Total Lymphocyte Profile in Sepsis Patients Treated with Ciprofloxacin and Cefotaxime

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Abstract

Sepsis is still the main cause of death in the hospital. The frequency of cefotaxime resistant bacteria is increasing. On the other hand, cefotaxime has a potency to stimulate a high LPS release. Ciprofloxacin is an alternative antibiotic agent against sepsis with low LPS release characteristics. Higher LPS release is associated with the increase of lymphocyte apoptosis. The mechanism of cell death (apoptosis), especially lymphocytes, is through the expression of serum p53 protein. The objective of this study was to determine serum p53 protein and total lymphocyte profile of patients with sepsis treated with ciprofloxacin and cefotaxime. This research was an observational study. The effect of ciprofloxacin versus cefotaxime on concentration of p53 protein and total lymphocyte in the sera of patients with sepsis was evaluated. This study included 50 patients suffering sepsis caused by bacteria, treated with either ciprofloxacin or cefotaxime after thorough clinical and microbial evaluation and followed up for sera of p53 protein and total lymphocyte. Serum p53 protein and total lymphocyte from the ciprofloxacin group and cefotaxime were analyzed on the first, sixth, and ninth days of treatment. Data were presented descriptively to determine the profile of serum p53 protein and total lymphocyte. From all of the patients, 40 (80%) cured and 10 (20%) died. In cefotaxime group, 19 (28%) cured and 6 (12%) died. In ciprofloxacin group, 21 (42%) cured and 4 (8%) died. The average serum p53 protein in cured patients showed a decrease as compared to normal value (<0.2 U/ml) either in ciprofloxacin or cefotaxime group. The average serum p53 protein of ciprofloxacin in the cured group were 2.23 U/ml, 1.36 U/ml, 0.75 U/ml on the first, sixth, and ninth day. The average serum p53 protein in the cured cefotaxime group on the first, sixth and ninth day were 6.14 U/ml, 4.09 U/ml, and 3.08 U/ml respectively. Average total lymphocyte in cured patients showed alteration. The average total lymphocyte in cured patients showed an increase as compared to normal limit (2000/UI) in both groups. The average total lymphocyte in cured ciprofloxacin group on the first, sixth, and ninth day were 15243/uL, 2007.8/uL, and 2309.3/uL respectively, and that in cured cefotaxime group were 1287.4/uL, 2006/uL, and 2095.6/uL. The average total lymphocyte in cured patients during treatment increased both in the ciprofloxacin (1524.3/uL) and the cefotaxime group (1287.4/uL). In conclusion, there was a tendency of decreased serum p53 protein and increased total lymphocytes in sepsis patients who was treated either with ciprofloxacin or cefotaxime. Based on this study, serum p53 protein and total lymphocyte may have potential indicators for prognosis in sepsis patient.

Keyword : serum, p53, protein, total, lymphocyte, sepsis,

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