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'Factors affecting liver function disorder and mortality in sepsis patients'

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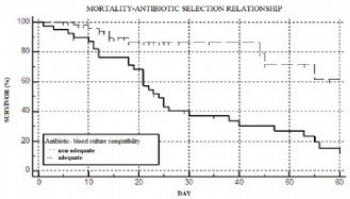
INTRODUCTION: Although there are several studies to investigate the pathogenesis of liver damage in sepsis, the factors associated with icreased mortality clear in these patients. In our study, the effect of liver dysfunction on prognosis in sepsis was investigated in patients admited to intensive care unit. In addition, it was aimed to determine other factors affecting mortality in patients.

METHODS: The patients, who were admitted to adult cardiovascular surgery, general surgery or internal medicine intensive care units between 2013-2018 and who are older than 18 years old were included in the study and data analysed retrospectively. Sepsis-3 definition criteria was used to diagnose sepsis. 1733 patients' case files were screened. Patients with primary or chronic secondary liver diseases or liver injury, or with intra or extrahepatic cholestasis were excluded from the study. Thirty two patients with sepsis related liver disease were inclueded in the study group, and 61 patients with normal liver function were included in control group. Liver-SOFA score was used to diagnose sepsis related liver disease. Diagnoses of sepsis or septic shock were retrospectively confirmed at the time of diagnosis by examining clinical and laboratory results.

RESULTS: Age, gender or frequency of chronic comorbidities were similar between groups. Acidosis, lactic acidosis and multiple bacterial growth (persistant bacteriemia) were more common in the study group. In the laboratory data, hemoglobin and platelet counts were significantly lower and procalcitonin and SOFA scores were higher in the study group. The frequency of positive inotropic medication use in the study group was higher. In addition, the duration of sepsis and ICU hospital stay was higher in the patient group. According to the ROC analysis of the laboratory data, the total bilirubin level above 1.6 mg/dl could help to predict sepsis related liver disease with %65 sensitivity and %92 specificity. In addition: INR> 1.25 was found to be helpful in predicting mortality with %74 sensitivity and %74 specificity. According to logistic regression analysis, the correct ampiric antibiotic selection [Odds ratio 141 (5,4 - 3698); p = 0.003] and the diagnosis of sepsis liver [96 (6,2-1495); p = 0,001] were found to stand out as independent factors affecting the mortality.

CONCLUSION: Recognition of minor increases in total bilirubin or INR levels may help to early diagnose sepsis associated liver disease. Most important factor related to mortality in these patients is insufficiency of empirically chosen antibiotic in treating the causative agent of the sepsis. Current laboratory culture methods are insufficient for early diagnosis of septicemia agent. In order to decrease the mortality, protocols for empiric antibiotic selection should be re-evaluated in patients with sepsis and methods for rapid diagnosis of bacteremia agent should be develeoped.

Keywords: Sepsis, septic shock, sepsis associated liver dysfunction, ampiric antibiotic



Appropriate empirical antibiotic selection and survival relationship

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