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Elevation of liver enzymes in intensive care patients is significantly related with the increased mortality

Ezgi Yiğit [1], Tuğba Çetin [1], Gamze Taşkıran [1], Hamza Polat [1], Yalçın Gül [1], Çağlayan Keklikkıran [2], Osman Cavit Özdoğan [2]

[1]*Marmara University School of Medicine, Istanbul, Turkey*
[2]*Department of Gastroenterology, Marmara University School of Medicine, Istanbul, Turkey*

INTRODUCTION: Many reasons may cause elevation of liver enzymes (LE) in intensive care unit (ICU) patients. However frequency, patterns and the effect on mortality are not evaluated in detail. The aim of the present study is to evaluate the frequency and patterns of elevation of liver enzymes in ICU patients and to find out if the liver enzyme elevation (LEE) have any effect on the mortality.

METHODS: This observational prospective study is performed by collecting the prospective data of ICU patients admitted to Marmara University Hospital between the period of February to April 2015. Sociodemographic and medical profiles, indications for admission to ICU, sequential liver function tests and survival data of patients are recorded and analyzed by SPSS software Version 20.

RESULTS: During study period 146 (62 female) patients were admitted to ICU of Marmara University Hospital inwhich 88 (%60.3) patients already have LEE at the time of ICU admission. Totally, 113 patients (%77.4) had at least one result of LEE during ICU hospitalization. Elevation of liver enzymes lasts 1-3 days in 65 (%44.5) patients, 4-7 days in 29 (%19.9) of patients, and more than 7 days in 20 (%13.7) patients. Type of the elevation of LE was mix in 65 (%44.5), hepatocellular pattern in 32 (%21.9) patients and cholestatic pattern in 16 (%11) patients. Average duration of hospitalization is 5.34 days in patients who had no LEE, whereas 9.27 days in patients who had LEE. Overall mortality rate is %43.2 in patients with LEE during hospitalization compared to %22.2 who had no LEE. Mortality rates according to the duration of LEE indicate that patients who had LEE during ICU hospitalization and persisted LEE had the highest mortality rates of %97. Additionally, mortality rates are %30.8 in patients inwhom LEE lasts 1-3 days, %58.6 inwhom LEE lasts 4-7 days and %70 inwhom LEE lasts more than 7 days (p=0,001). Significant relation was found between the factors of being in ICU; Glasgow Coma Scale; sepsis; hypotension; shock; having at least one chronic disease and occurence of LEE.

CONCLUSION: It has been found that having LEE, whether its happened before or during ICU and persisted longer is significantly related with the mortality. However, this relation is dependent to the patient's condition or it's an independent factor needs further research.

Keywords: Liver Enzyme Elevation, ICU, Intensive Care, Mortality

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