Relative adrenal insufficiency predicts mortality in patients with liver cirrhosis

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Background: The degree of relative adrenal insufficiency (RAI) in patients with liver cirrhosis correlates with disease severity. However, it is difficult to clarify the relation between liver cirrhosis and RAI. The aim of study is to evaluate the frequency of RAI in liver cirrhosis and the correlation between RAI and disease severity.

Methods: Forty-six patients (29 liver cirrhosis; biopsy proven or clinical portal hypertension, 17 chronic hepatitis; biopsy proven, control group) were prospectively enrolled and performed short corticotropin stimulation test (SST) between January 2008 and April 2011. Exclusion criteria were critical illness, hepatocellular carcinoma, and history of medication related to cortisol production and metabolism. Diagnostic criteria of RAI is below 9ug cortisol increase from basal cortisol level after injection of corticotropin. Follow up period after SST was 525.7±420.9 days (17-1160 days). Parameters of liver function and survival were evaluated and analyzed according to RAI.

Result: 1) RAI was found in 7 out of 29 patients with liver cirrhosis (24.1%). 2) The patients with RAI had high Child-Turcotte-Pugh (CTP) and Model for End-stage Liver Disease (MELD) score (CTP score 11.0±1.9 vs 7.0±1.7) (MELD score 18.6±3.8 vs 10.3±3.0) (both, p=0.000). 3) The cortisol response to corticotropin was inversely correlated with disease severity (p=0.05). 4) The patients with RAI had a higher mortality rate when compared with those without RAI (100% vs 0%, p=0.000) independent of CTP grade. The cumulative rates of survival at 1year were 57.1% and 100% for RAI and no RAI groups, respectively (p=0.000) 5) There was no RAI in 17 patients with chronic hepatitis.

Conclusion: The patients with RAI showed more advanced liver disease. RAI was the independent prognostic factor to predict mortality in patients with liver cirrhosis.

Keywords: Relative adrenal insufficiency, Liver cirrhosis, Mortality

Diagnostic accuracy of extracellular matrix markers measured in the hepatic vein and peripheral vein in the prediction of advanced fibrosis

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