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Presepsin levels in cirrhotic patients with bacterial infections presented with or without acute kidney injury

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Background: Bacterial infections (BI) are a common complication in patients with liver cirrhosis (LC). Serum presepsin has recently aroused as a potential biomarker for sepsis diagnosis. In this study we evaluated serum presepsin levels in LC patients, with or without documented BI and/or portal hypertension related bleeding (PHRB) presented with or without acute kidney injury (AKI).

Material/methods: We prospectively evaluated presepsin levels (PATHFAST chemiluminescent enzyme immunoassay), in 108 consecutive presenting uncomplicated outpatient LC patients (53 decompensated, 37 Child-Pugh B/C, 50 with MELD score ≥10), without documented BI. Twenty of them re-evaluated during their hospitalization for documented BI (n=18) with (6/18) or without (12/18) PHRB or with PHRB without documented BI (n=2). Ten patients presented with AKI (according to ICA-AKI definition, Angeli P et al. J Hepatol 2015) resulting in fatal outcome in all of them.

Results: Mean baseline presepsin levels were 440 pg/ml. Higher levels were observed in the Child-Pugh B/C group compared to the Child-Pugh A group (mean: 674 vs 318 pg/ml, p<0.0001). Additionally the mean baseline presepsin levels of patients with MELD score ≥10 were also significantly higher than the corresponding ones of patients with MELD score < 10 (545 vs 328 pg/ml, respectively, p<0.0001). Significantly higher mean presepsin levels (1292 pg/ml) were observed in admitted patients with event compared to their baseline values (725 pg/ml, p<0.0001). Patients who developed AKI (10/20, 50%) presented with significantly higher baseline (936 vs 514 pg/ml, p=0.035) as well as on event (1827 vs 1049 pg/ml, p=0.019) presepsin levels compared to those who did not develop AKI. In multivariate analysis both baseline MELD score ≥15 (p<0.0001) as well as baseline presepsin levels ≥725 pg/ml (p=0.029) significantly predicted event needed hospitalization, adjusted for age and gender of the cirrhotic population.

Conclusions: Cirrhotic patients presented with BI and/or PHRB, especially those who developed AKI, exhibited significantly higher presepsin levels than their baseline values. Baseline MELD and presepsin levels could predict patients at risk for a complicated event.