PP-005

Can we predict hepatic encephalopathy? What do the hemogram parameters tell us?

Erkut Demirciler [1], Nilay Danış [2], Devrim Bozkurt [1], Pelin Ergün [2], Nevin Oruç [2], Ilker Turan[3], Fulya Günşar[3], Galip Ersöz [2], Ulus Salih Akarca [2], Ömer Özütemiz [2], Zeki Karasu [2]

[1]*Ege University, Medical Faculty, Department of Internal Medicine*
[2]*Ege University, Medical faculty, Department of Internal Medicine, Division of Gastroenterology*
[3]*Ege University, Department of Gastroenterology*

INTRODUCTION: Crosstalk between hepatocytes and immune cells is the key point that ultimately leads to inflammation and fibrosis. This is well-known entity underlying the decompansation of liver failure. Recently, it has been shown that the ratio of lymphocyte to monocytes that can be measured easily in peripheral blood reflects many inflammatory processes. In this study, we aimed to find the novel inflammatory parameters predicting subclinical hepatic encephalopathy in patients with liver failure who were routinely followed up in outpatient clinics.

METHODS: Seventy-six cirrhotic patients who were followed up in Ege University Medical Faculty Hospital Gastroenterology-Hepatology out-patient clinic were included in the study. Thirteen similar healthy volunteers in terms of age and gender were also recruited. We applied psychometric hepatic encephalopathy score (PHES) and Critical flicker frequency test (CFF) for both patient groups (with and without covert hepatic encephalopathy (CHE)). We analyzed neutrophil-to-lymphocyte ratio (NLR), lymphocyte-to-monocyte ratio (LMR), mean platelet volume as well as INR, CRP, albumin, total bilirubines and platelet counts from routine clinic testing samples, retrospectively.

RESULTS: According to West-Haven criteria, CHE was detected in 41 patients and not detected in 35 patients. When CFF test was applied, patients with CHE completed by reacting late compared to non-CHE patients ($p<0.001$). While NLR was inversely related to LMR, albumin and serum sodium, it was also found to be significantly proportional to serum bilirubin, INR, and CRP levels. In addition to all tests used in PHES, LMR results were significantly correlated with serum albumin and sodium levels ($p<0.05$) while total bilirubin, INR, and CRP levels were found to be inversely proportional ($p<0.05$). We found that LMR and NLR levels correlated significantly with MELD score and Child Pugh score (-,477 and -,722 vs,487 and,664 resp. $p<0.001$). Lower LMR levels also correlated significantly with psychometric tests (p is 0.005 for Serial Dotting Test (SDT), 0.003 for Number Collecting Test (NCT), 0.011 for Line Tracing Test (LTT), 0.042 for Digit Symbol Test (DST)) which are considered as gold standard by some authorities.

CONCLUSION: LMR and NLR, which are cheap and easily available hemogram parameters, can provide early warning to clinicians for cirrhotic patients in outpatient follow-up.

Keywords: Covert hepatic ensephalopathy, neutrophil-to-lenfocyte ratio, lymphocyte-to-monocyte ratio, mean platelet volume