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Diagnostic Performance of Biological Scores for Hepatic Steatosis and Advanced Liver Fibrosis among Hemodialysis Patients

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Objectives : Non-invasive diagnostic modality for hepatic steatosis and advanced liver fibrosis, e.g., ultrasonography and transient elastography might not be easily accessible to hemodialysis patients. Hence, biological scores such as fatty liver index (FLI), fibrosis-4 (FIB-4) score and NAFLD fibrosis score may be useful to predict hepatic steatosis and advanced liver fibrosis. We aim to study the diagnostic performance of FLI, FIB-4 score and NAFLD fibrosis score among hemodialysis (HD) patients.
Methods : In a cross-sectional study of HD patients from 10 HD centers, FibroTouch transient elastography examination was performed on all patients as the surrogate gold standard. Fatty liver and advanced liver fibrosis were diagnosed based on ultrasound attenuation parameter (UAP) >/=248 dB/m and liver stiffness measurement (LSM) >/=10 kPa, respectively. Prediction of hepatic steatosis using FLI and the prediction of advanced liver fibrosis using FIB-4 score and NAFLD fibrosis score were done using the area under the receiver operating characteristic curve (AUROC), sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV).
Results : This study included 447 HD patients with median age of 59 (50-67) and 55% were male. Dialysis vintage was 49 (22-93) months. The AUROC, sensitivity, specificity, PPV and NPV of FLI for prediction of hepatic steatosis were 0.874 (95%CI=0.843-0.906, p=<0.001), 77.4%, 92.8%, 87.3% and 86.5%, respectively. AUROC, sensitivity, specificity, PPV and NPV of the FIB-4 score were 0.588 (95%CI=0.527-0.649, p=0.005), 10.7%, 97.9%, 61.5% and 77.7% respectively while the AUROC, sensitivity, specificity, PPV and NPV of the NAFLD fibrosis score were 0.629 (95%CI=0.571-0.687, p=<0.001), 41.7%, 83.5%, 42.6% and 83.0% respectively for the prediction of advanced liver fibrosis.
Conclusions : FLI is a good predictor of hepatic steatosis in hemodialysis patients. However, both FIB-4 score and NAFLD fibrosis score might not be suitable to predict advanced liver fibrosis in hemodialysis patient hence a new index tailored for this population might be required.