

**Abstract Submission No.: A-0098****Liver elasticity in elderly heart failure patient -the role of kidney in cardio-hepatic interaction-**

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**Objectives :** Liver elastography is a novel ultrasound technique assessing elasticity of liver tissue. However, clinical indication of liver elastography remains unrevealed. We have investigated the cardio-hepatic interaction using liver elastography in heart failure subtypes.

**Methods :** We prospectively enrolled 58 consecutive patients with heart failure admission from April 2022 to March 2023. Liver elastography, transthoracic echocardiography and blood sampling were done at the time of discharge from heart failure treatment.

**Results :** Patients were divided into two groups according to the left ventricular ejection fraction (LVEF) of echocardiography: heart failure with reduced ejection fraction (HFrEF) group (EF  $\leq$ 40%, n = 11) and non-HFrEF group (EF >40%, n = 31). The mean age of all patients was  $83 \pm 11$  years. The mean age was higher in HFrEF group. The prevalence of hypertension and diabetes mellitus was higher in non-HFrEF group. LV end-diastolic diameter, LV end-systolic diameter was larger in HFrEF group. Tricuspid regurgitation pressure gradient (TRPG) was higher in non-HFrEF group. Inferior vena cava diameter was not different between two groups. The mean values of almost liver function tests of all patients were within the normal range. Hb and eGFR was lower in non-HFrEF group. Liver elasticity was higher in non-HFrEF group than in HFrEF group ( $7.1 \pm 2.7$  vs.  $5.1 \pm 1.5$  hPa; P=0.008) indicating liver stiffness. Pearson's correlation coefficient showed that liver elasticity was positively correlated with the prevalence of diabetes mellitus, LVEF, TRPG, serum creatinine, AST, GGT and was negatively correlated with LV end-diastolic diameter, LV end-systolic diameter.

**Conclusions :** Liver stiffness was elevated and renal function was decreased in EF-preserved heart failure patients. Liver elasticity was correlated with parameters of congestion (TRPG) and useful for the assessment of congestion in patients with heart failure. Renal function was also correlated with liver elasticity.