Abstract: P787

Long-term prognostic value of the combination of fibrosis-4 index and acute kidney injury in patients with admitted for acute decompensated heart failure

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Topic(s):
Acute Heart Failure – Epidemiology, Prognosis, Outcome

Citation:
European Heart Journal (2019) 40 (Supplement), 388

Background: Liver dysfunction in patients with heart failure (HF) is caused by liver congestion, which is related to liver stiffness. It was reported that liver stiffness assessed by non-invasive fibrosis marker such as Fibrosis-4 (FIB4) index (based on age, aspartate aminotransferase [AST] and alanine aminotransferase [ALT] levels, and platelet counts) predicts mortality in HF pts. Acute kidney injury (AKI) during HF treatment is associated with poor outcome in pts admitted for acute decompensated heart failure (ADHF). However, there is no information available on the long-term prognostic significance of the combination of FIB4 index and AKI in ADHF pts.

Methods and results: We studied 299 ADHF pts with survival discharge. FIB4 index was calculated by the formula: age (yrs) × AST[U/L]/(platelets [10^3/μL] × (ALT[U/L])^{1/2}). AKI during ADHF treatment was defined according to AKI Network criteria (stage 1: mild, stage 2: moderate, stage 3: severe). During a follow-up period of 4.3±3.3 yrs, 94 pts died. At multivariate Cox analysis, FIB4 index and stage 2/3 AKI, but not stage 1 AKI, significantly associated with total mortality, independently of prior HF hospitalization and serum sodium and blood urea nitrogen levels after adjustment with BMI, systolic blood pressure, hemoglobin, serum creatinine and albumin levels, left ventricular end-diastolic and left atrial dimension indexes. Pts with both greater FIB4 index (>2.674: median) and stage 2/3 AKI had a significantly higher risk of total mortality than those with none of them. Adjusted hazard ratio in pts with both greater FIB4 index and stage 2/3 AKI was 3.5 (95% CI 1.6–7.7), which was two-fold of that in pts with either of them (1.7 [95% CI 1.1–2.7]).

Conclusion: The combination of FIB4 index and moderate to severe AKI might identify higher risk subset for total mortality in ADHF pts.