

**ALBUMIN BILIRUBIN SCORE ACROSS REDUCED AND PRESERVED
EJECTION FRACTION PHENOTYPES IN CHRONIC HEART FAILURE****Rajabova Z.R.**

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The albumin–bilirubin (ALBI) score combines two routinely available laboratory measures. A between-phenotype difference may identify a distinct biochemical profile, but does not establish liver fibrosis or independent prognostic value.

Because ALBI is calculated from albumin and bilirubin, its interpretation depends on both the underlying measurements and their units. A comparison based on directly traceable numeric inputs is preferable to reconstructing ambiguous spreadsheet entries. The present work therefore focused on an auditable complete-case analysis rather than maximizing the nominal sample size.

Objective. To compare recalculated ALBI values between patients recorded as having reduced and preserved left ventricular ejection fraction in a single-centre chronic heart failure cohort.

Methods. Patients admitted to the cardiology department of Bukhara Regional Multidisciplinary Medical Centre in 2023–2024 were enrolled prospectively. The source cohort included 65 patients recorded as having reduced EF and 46 recorded as having preserved EF. This analysis examined baseline measurements. ALBI was recalculated as $0.66 \times \log_{10}(\text{total bilirubin in } \mu\text{mol/L}) - 0.085 \times \text{albumin in g/L}$. Two preserved-EF bilirubin cells were stored as dates and were excluded without reconstruction, leaving 65 and 44 evaluable patients. Means $\pm$ SD and medians [Q1; Q3] were calculated; groups were compared using a two-sided Mann–Whitney test. This was a secondary exploratory analysis; no adjusted prediction model was fitted.

Age, was 64.3 $\pm$ 8.2 years in the reduced-EF source group and 60.0 $\pm$ 9.2 years in the preserved-EF source group. The analysis retained the source phenotype labels without reclassification. One reduced-EF-labelled record had an EF of 40.5%; consequently, the results describe the source groups rather than a newly adjudicated strict EF $\leq$ 40% population. Patients were not selected according to ALBI category, and no threshold was optimized against the observed group difference.

Results. Mean ALBI was -2.306 ± 0.276 in the reduced-EF group and -2.631 ± 0.213 in the evaluable preserved-EF group. Median values were -2.306 [-2.514 ; -2.111] and -2.705 [-2.768 ; -2.475], respectively. The between-group difference was statistically significant ($p=7.30 \times 10^{-9}$). The less negative ALBI in reduced

EF was consistent with a less favourable combined albumin–bilirubin profile. The groups differed in age, and no adjustment for age, nutritional status, primary liver disease or treatment was performed. No fibrosis staging or ALBI-based treatment threshold was inferred.

The mean score difference was approximately 0.324 units. The upper and lower quartiles shifted in the same direction, although the distributions overlapped. This pattern supports a group-level difference while limiting the use of a single score to identify an individual patient's phenotype. Exclusion of two date-formatted bilirubin entries ensured that each included ALBI value could be traced to numeric albumin and bilirubin measurements.

The score was analysed continuously, without applying liver-cancer grading categories to this heart failure cohort. No sensitivity, specificity or clinical decision rule was derived from the baseline comparison. A higher ALBI should therefore be understood here as a less favourable combined laboratory profile, not as proof of impaired hepatic reserve, advanced fibrosis or a validated mortality risk category.

Conclusion. Patients recorded as having reduced EF had a higher, less negative ALBI than the preserved-EF comparison group. The association supports further assessment of ALBI within a multivariable clinical framework. This baseline comparison alone does not demonstrate independent prognostic value.