

Zachary T. LeBlanc

Medical Student L2
LSU Health Sciences Center, New Orleans, LA

Mentors: Gregory Davis PhD, Denzil Moraes MD
LSU Health Sciences Center – New Orleans, School of Medicine and Our Lady of the Lake
Regional Medical Center

“30-Day Readmission Patterns and Etiologies in HFpEF vs HFrEF Patients”

Abstract

PROJECT BACKGROUND: Thirty-day hospital readmissions are a significant problem for patients with heart failure and place a substantial burden on the healthcare system. Heart failure with reduced ejection fraction (HFrEF) and heart failure with preserved ejection fraction (HFpEF) differ in pathophysiology and patient characteristics, which may contribute to differences in readmission patterns.

PROJECT GOALS: To compare 30-day readmission frequency and principal diagnoses upon rehospitalization between patients with HFrEF and HFpEF.

METHODS: We conducted a retrospective review of a random sample of 190 patients with heart failure identified from a large urban regional medical center between 2024 and 2026. Patients who experienced at least one 30-day all-cause readmission were included in the analytic cohort ($n = 100$). Patients were classified as HFrEF (LVEF $\leq 40\%$) or HFpEF (LVEF $\geq 50\%$), while those with heart failure with mildly reduced ejection fraction (HFmrEF) were excluded. Overall, 52.6% of patients experienced at least one 30-day readmission. All recurrent 30-day readmissions were analyzed, yielding 205 all-cause readmission events. Chi-square tests and independent-samples t-tests were used for statistical comparisons.

RESULTS: There was no significant difference in the proportion of patients experiencing at least one 30-day readmission between HFrEF and HFpEF ($p = 0.48$). However, HFrEF patients experienced significantly more recurrent 30-day readmissions per patient than HFpEF patients ($p < 0.01$). Cardiac readmissions were more frequent among HFrEF patients, whereas pulmonary readmissions were more common among HFpEF patients (both $p < 0.05$).

CONCLUSION: Although the overall likelihood of 30-day readmission was similar between HFrEF and HFpEF, significant differences in recurrent readmission frequency and principal causes suggest distinct patterns of rehospitalization between the two heart failure phenotypes.

DISCUSSION/FUTURE DIRECTIONS: These findings are consistent with prior literature demonstrating that HFrEF is associated with predominantly cardiovascular readmissions, whereas HFpEF is more frequently associated with non-cardiovascular readmissions. Future multicenter cohort studies are needed to develop phenotype-specific interventions to reduce rehospitalization.