Epidemiology, Outcomes, and Health Care Utilizations of Myeloid Leukemia With and Without Heart Failure: A Retrospective Analysis of the NIS 2022 Database

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Introduction

- Myeloid leukemia is a malignant hematologic disorder characterized by the rapid proliferation of immature myeloid cells. This leads to impaired hematopoiesis, cytopenias, and a wide range of systemic complications. Advances in therapy have improved survival, but comorbid conditions play a pivotal role in determining patient outcomes.
- Patients with concomitant HF and myeloid leukemia often present with greater clinical complexity, higher health care utilization, and poorer outcomes. However, there is limited large-scale data exploring the epidemiology, outcomes, and health care burden associated with this overlap.

Aim

- To evaluate the epidemiology, outcomes, and health care utilization among patients with myeloid leukemia with and without heart failure using the NIS 2022 database.

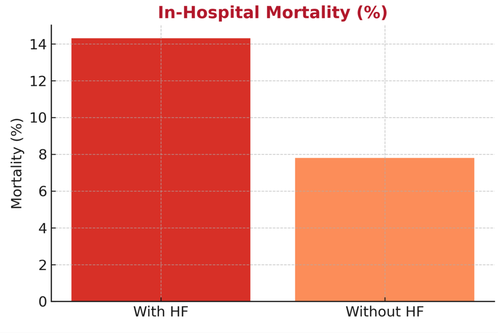
Methods

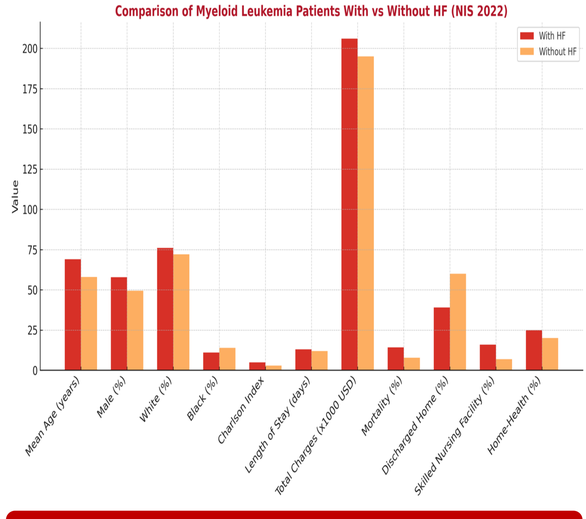
- Data Source: National Inpatient Sample (NIS) 2022
- Cohort: Hospitalizations with myeloid leukemia, stratified by presence or absence of HF
- Outcomes Measured:
  1. Epidemiology (age, sex, race, region)
  2. Clinical outcomes (mortality, Charlson comorbidity index, discharge disposition)
  3. Health care utilization (length of stay, total charges)
- Statistical Analysis: Descriptive and comparative statistics, significance at P < 0.05

Variable	With HF [2,046]	Without HF [13,720]	p-Value
Age			
Mean Age (years)	69	58	0.01
Gender			
Male (%)	57.8	53.5	< 0.05
Female (%)	42.1	46.4	
Race			
White (%)	76	70	0.002
Black (%)	11	9	
Hispanics (%)	7.3	11.4	
Asian or Pacific Islander (%)	3	4.7	
Native American (%)	0.2	0.3	
Charlson Comorbidity Index	5	3	< 0.001
Length of Stay (days)	13	12	0.04
Total Charges (USD)	$205,919	$195,009	0.03
Mortality (%)	14.3	7.8	<0.001

Results

- Total hospitalizations: 15,766
  - With HF: 2,046 vs. Without HF: 13,720
- Mean Age: 69 years (with HF) vs. 58 years (without HF) (P = 0.01)
- Sex: HF is more common in males (57.8%) than in females (42.1%)
- Race: White 76% vs Black 11% (with HF) (P=0.002) & White 70% vs Black 9% (without HF)
- Charlson index: 5 (with HF) vs. 3 (without HF)
- LOS: 13 (with HF) vs 12 days (without HF)
- Total charges: $205,919 (with HF) vs $195,009 (Without HF)
- Mortality: 14.3% (with HF) vs 7.8% (without HF) (P < 0.00)
- Discharge Outcomes:
  - With HF: 39% home, 16% SNF, 25% home-health
  - Without HF: 60% home, 7% SNF, 20% home-health





Discussion

- Myeloid leukemia with HF is associated with worse clinical outcomes and greater health care burden than myeloid leukemia without HF. These findings highlight the need for aggressive treatment strategies and multidisciplinary care in this high-risk subgroup.