Clinical Profile of Patients Hospitalized for Heart Failure with Severely Reduced Ejection Fraction: From the GWTG-HF Registry

Josephine Harrington MD,[1,2] Jie-Lena Sun MS,[2] G. Michael Felker, MD MHS,[1,2] Gary Binder MBA,[3] Robb Kociol MD,[3] Punag H. Divanji MD,[3] Larry A. Allen MD MHS,[4] Brooke Alhanti PhD,[2] Clyde W. Yancy MD MSc,[5] Nancy M. Albert PhD,[6] Gregg C. Fonarow MD,[7] Adam D. DeVore MD MHS,[1,2] Stephen J. Greene, MD[1,2]

[1] Division of Cardiology, Duke University School of Medicine, Durham, North Carolina, USA
[2] Duke Clinical Research Institute, Durham, North Carolina
[3] Cytokinetics, South San Francisco, California
[4] Division of Cardiology & Colorado Cardiovascular Outcomes Research Consortium, University of Colorado School of Medicine, Aurora, Colorado
[5] Division of Cardiology, Northwestern University Feinberg School of Medicine, Chicago, Illinois
[6] Nursing Institute and Kaufman Center for Heart Failure, Cleveland Clinic, Cleveland, Ohio
[7] Division of Cardiology, Ahmanson-UCLA Cardiomyopathy Center, University of California Los Angeles Medical Center, Los Angeles, California

BACKGROUND

- Many patients with heart failure (HF) have severely reduced ejection fraction (EF) but are frequently not considered for advanced therapies.
- The clinical profile, outcomes, and management of these patients in US practice are not well-described.

OBJECTIVES

- To compare patient characteristics, treatment patterns, and clinical outcomes among patients with worsening HFrEF with and without severely reduced EF ≤30%

METHODS

- **Data Source:** 423 US hospitals within the Get With the Guidelines-HF Registry® between 2014-2019
- **Study Population**: Patients hospitalized for a primary diagnosis of worsening chronic HFrEF without severe kidney disease (defined as eGFR <20 mL/min/1.73m^2) who did not receive heart transplantation or a ventricular assist device.
- Patients were grouped by EF (≤30% vs 31-40%) and data were compared using absolute standardized differences.
- Among Medicare beneficiaries aged ≥65 years, post-discharge outcomes and costs were compared by EF groups

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Patients with EF ≤30% comprised **more than two-thirds** of all patients hospitalized for worsening HFrEF

Patients with EF ≤30% were **younger** and **more likely to be Black and male** than patients with EF 31-40%

Patients with EF ≤30% **were more likely to receive GDMT at discharge** than patients with EF 31-40%

Patients with EF ≤30% had **significantly higher risk of death and HF readmission,** and **nominally higher healthcare costs** than patients with EF 31-40%

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For more information, please contact:
Dr. Josephine Harrington, *josephine.Harrington@duke.edu*, ***@JLHarrington_MD***
Dr. Stephen Greene, *stephen.greene@duke.edu*, ***@SJGreene_md***

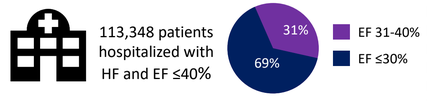
RESULTS

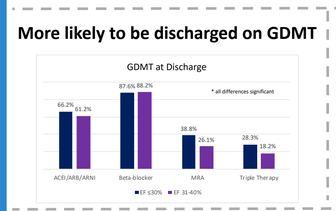
Table. Patient Characteristics by Ejection Fraction Group

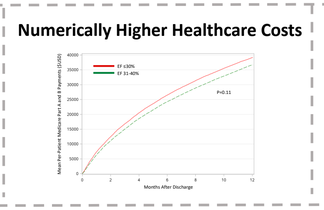
	EF ≤30% (N=78,589)	EF 31-40% (N=34,759)	Standardized Difference (%)
Age, years	68.0 (57.0-79.0)	74.0 (63.0-83.0)	36.8
Female Sex	24,451 (31.1%)	13,664 (39.3%)	17.2
Race			24.0
White	45,409 (57.8%)	23,910 (68.8%)	
Black	23,228 (29.6%)	7,020 (20.2%)	
Other	9,943 (12.7%)	3,824 (11.0%)	
Ejection Fraction	22.0 (18.0-25.0)	35.0 (33.0-39.0)	--
Discharge Medications			
ACEI/ARB/ARNI	52,018 (66.2%)	21,279 (61.2%)	17.0
Beta-blocker	68,878 (87.6%)	30,667 (88.2%)	12.1
MRA	30,486 (38.8%)	9,063 (26.1%)	36.2
Triple Therapy	22,235 (28.3%)	6,327 (18.2%)	35.6

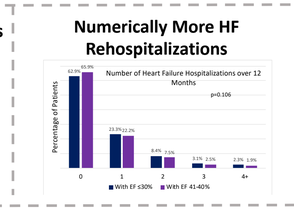
Standardized difference of ≥10 indicates a meaningful difference. Data presented as n (%) or median (25th – 75th)

Worsening Heart Failure with Severely Reduced EF

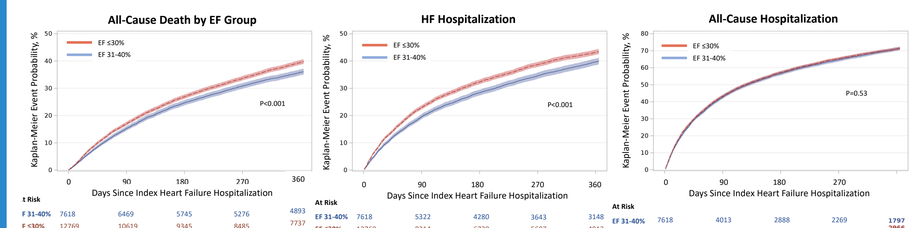








Significantly Higher Rates of Death and Re-Hospitalization for Heart Failure



Outcomes at 12 months	Hazard Ratio (95% confidence interval), p value [Referent group = EF 31-40%]
Mortality	**1.13 (1.08-1.18), p<0.001**
HF readmission	**1.14 (1.09-1.19), p<0.001**
All-cause readmission	**1.01 (0.98-1.05), p=0.54**

LIMITATIONS

- Hospitals voluntarily participating in GWTG-HF may not be representative of all US hospitals.
- Outcome and cost data limited to Medicare beneficiaries aged ≥65 years and generalizability to younger patients with HF uncertain.
- Outcomes and costs data by EF group are unadjusted, and do not account for differences in other patient risk factors.