



Evaluating Prescribing Trends of Guideline Directed Medical Therapy for HFrEF in Southern Illinois: A Retrospective Study

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SCHOOL OF PHARMACY

BACKGROUND

- **Background:**
 - **Prevalence:** Heart failure with reduced ejection fraction (HFrEF) affects 1.9%-2.6% of U.S. adults.
 - **Guidelines:** April 2022 ACC/AHA guidelines emphasize angiotensin receptor-neprilysin inhibitor (ARNi) and sodium-glucose cotransporter 2 inhibitors (SGLT2i) as first-line therapies.
 - **Objective:** Assess uptake of these guidelines in a large federally qualified healthcare system (FQHC).

METHODS

- **Design:** Retrospective cohort study using ICD-10 codes for heart failure.
- **Population:**
 - All patients within FQHC from June 2022 to September 2024.
 - Demographics
 - Sex: Male, Female
 - Race: Caucasian, African American, Declined, Other
- **Primary Outcome**
 - Full GDMT for HFrEF
- **Secondary**
 - Demographic predictors
 - Sex, Gender, Race
- **Statistical analysis:** Conducted using SPSS 29.0 (IBM).

RESULTS

Results

• **Patient demographics:** Median age: 66 years, range: 18-80 years. Predominantly White (55.3%) and African American (36.7%).

• Primary Outcome:

- GDMT adherence rates:
 - No GDMT (0 drugs): 7.9%.
 - 1 recommended drug: 24.2%.
 - Full GDMT (≥4 drugs): 11.4%.
- Drug-specific rates:
 - ARNi: 16.3%.
 - SGLT2i: 40%.
 - ARNi/ARB/ACEi: 69.4%
 - Evidence-based beta-blockers: 66.2%.

• Secondary Outcome:

- Demographic predictors
 - AA: 57% on full GDMT (Statistically significant) (Odds ratio, 0.565; 95% confidence interval [CI], 0.434 - 0.735; P < 0.001)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	183	7.9	7.9
	1.00	559	24.2	32.1
	2.00	793	34.3	66.4
	3.00	512	22.2	88.6
	4.00	264	11.4	100.0
Total	2311	100.0	100.0	

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1934	83.7	83.7
	Yes	377	16.3	100.0
Total		2311	100.0	

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	.00	707	30.6	30.6
	1.00	1604	69.4	100.0
Total		2311	100.0	

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	1386	60.0	60.0
	Yes	925	40.0	100.0
Total		2311	100.0	

	B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. Lower	95% C.I. Upper
Step 1 ^a race			20.442	3	<.001			
race(1)	-.571	.134	18.161	1	<.001	.565	.434	
race(2)	.307	.429	.510	1	.475	1.359	.586	
race(3)	-.764	.740	1.064	1	.302	.466	.109	
Constant	-1.762	.091	376.245	1	<.001	.172		

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	1239	53.6	53.6
	Male	1072	46.4	100.0
Total		2311	100.0	

CONCLUSION

Despite updated guidelines, gaps in GDMT adherence for HFrEF persist. Addressing barriers like ARNi underutilization and patient-specific predictors is essential for optimizing care. Further research should explore underlining causes for racial disparities in prescribing patterns, policy driven efforts to mitigate cost barriers, and real time prescribing interventions.

References

- American College of Cardiology, & American Heart Association. (2022). 2022 AHA/ACC/HFSA guideline for the management of heart failure. Journal of the American College of Cardiology, 79(17), e263-e421. <https://doi.org/10.1016/j.jacc.2022.03.015>
- Malgie, Jishnu et al. "Guideline-directed medical therapy for HFrEF: sequencing strategies and barriers for life-saving drug therapy." Heart failure reviews vol. 28,5 (2023): 1221-1234. doi:10.1007/s10741-023-10325-2