Survival and Cardiovascular Outcomes Associated With GLP-1 Receptor Agonist Exposure in Patients With Multiple Myeloma and Metabolic Comorbidities: A Propensity-Matched Real-World TriNetX Analysis

Nnamdi Omenuko MD, MPH[1], Nneoma Ubah MD, MPH[2], Mckenna Andrews MD[1], Emma Self[1], Alexander Mays [1], Nathan Stanko[1], Janamejey Gaur MD[1], Alina Bhat MD[1], Sakshi Singal MD[1]

1. East Tennessee State University, Johnson City, TN, USA
2. Montefiore St. Luke Cornwell Hospital, Newburgh NY, USA

QUILLEN COLLEGE of MEDICINE
EAST TENNESSEE STATE UNIVERSITY

INTRODUCTION

•Patients with multiple myeloma (MM) frequently have diabetes, obesity, hypertension, chronic kidney disease, and other metabolic disorders that contribute substantially to cardiovascular morbidity and mortality.

•GLP-1 receptor agonists (GLP-1RAs) have demonstrated cardiovascular and renal benefits in diabetes and obesity but have not been well studied in patients with hematologic malignancies.

AIM

To evaluate associations between recorded GLP-1RA exposure and survival, cardiovascular, thrombotic, and acute-care outcomes among patients with MM and cardiometabolic comorbidities.

METHOD

- Retrospective cohort study using TriNetX federated research network
- Adult patients with MM and at least one cardio-metabolic comorbidity were identified
- Excluded patients with plasma cell leukemia or amyloidosis
- GLP-1RA exposure defined as liraglutide, semaglutide, tirzepatide, dulaglutide, exenatide, or lixisenatide
- 1:1 propensity score matching based on demographic, diagnostic, procedural, and laboratory characteristics
- Primary outcome was all-cause mortality using Kaplan-Meier analysis
- Secondary outcomes included heart failure, hospitalization-coded encounters, arrhythmia, ICU admission, VTE, stroke, and ischemic heart disease

CONCLUSIONS

- Recorded GLP-1RA exposure was associated with lower all-cause mortality, fewer hospitalization-coded encounters, and lower VTE risk.
- Higher observed rates of heart failure and ischemic heart disease in GLP-1RA-exposed suggest residual cardiometabolic confounding, surveillance bias, or differential baseline risk

RESULTS

After PSM: GLP1-RA- 2618, Controls= 2618

Associated with Lower Risk
✓ 43% lower mortality hazard
Kaplan-Meier analysis HR 0.57; 95% CI, 0.49-9.65; log-rank P< 0.001
✓ ✓ 36% lower hospitalization
✓ ✓ 17% lower VTE
No Significant Difference
✓ Stroke
✓ ICU admission
✓ Arrhythmia
Higher Observed Risk
✓ Heart failure
✓ Ischemic heart disease

Outcome	RR	95% CI	Interpretation	
Death	**0.655**	0.576–0.744	↓	
Hospitalization	**0.640**	0.501–0.818	↓	
VTE	**0.827**	0.700–0.977	↓	
ICU Admission	0.922	0.801–1.063	NS	
Arrhythmia	1.093	0.947–1.260	NS	
Stroke	1.207	0.953–1.528	NS	
Ischemic Heart Disease	**1.378**	1.210–1.568	↑	
Heart Failure	**1.480**	1.284–1.706	↑	

Limitations

•Residual confounding cannot be excluded
•Medication adherence unavailable
•No treatment duration or dose information
•No myeloma-specific disease response data