Abstract

Introduction: We evaluated international variations in management and clinical outcome for patients with type 2 diabetes and heart failure (HF) by region in the Trial Evaluating Cardiovascular Outcomes with Sitagliptin (TECOS).

Methods: Among 14,671 TECOS patients, those with a baseline history of HF for whom documented baseline ejection fraction (EF) was available (N=1591) were categorized by geographic region. We examined regional variation in baseline characteristics and clinical outcome (death/HF hospitalization) using adjusted Cox models with North America as the reference cohort.

Results: Of 1591 (10.8%) patients with HF and documented EF, the majority originated from Eastern Europe [Eastern Europe (N=847; 21% of enrolled in region), North America [N=237; 9% of enrolled in region], Western Europe [N=191; 9% of enrolled in region], Asia Pacific [N=162; 4% of enrolled in region], and Latin America [N=154; 10% of enrolled in region]]. Most patients had EF≥40% (N=1267, 79.6%). Patients with EF<40% overall had highly prevalent use of beta-blocker (82%) and ACEI/ARB (87%), similar across geographic regions; mineralocorticoid antagonist use ranged from 19% to 37%. A joint test of whether any regions differed from North America in rates of death/HF hospitalization was statistically significant (p=0.004). However, during a median follow-up of 3.0 years, only Eastern European patients had significantly lower event rates (adjusted hazard ratio: 0.47; 95% CI: 0.31-0.72; Figure), largely driven by this region having the lowest HF hospitalization event rate among all regions. No significant difference was found in all-cause death rates.

Conclusions: In patients with type 2 diabetes and HF enrolled in an international clinical trial, variation exists with respect to the prevalence of HF and in the adjusted composite outcome of death/HF hospitalization across regions. These data may inform the design of future global trials that enroll patients with diabetes and HF.