BACKGROUND

- Association of heart failure (HF) among patients with type 2 diabetes mellitus (T2DM) has been estimated to be 2 to 30 cases per 1,000 person-years.†
- It is important to characterize the burden of HF hospitalization in order to understand the potential value of new oral antidiabetic medications.

STUDY OBJECTIVES

- Among patients with T2DM, determine the direct cost of an HF-related hospitalization.
- Compare healthcare resource utilization and costs of T2DM patients with an HF-related hospitalization to T2DM patients who did not have an HF-related hospitalization.

METHODS

Data Source and Study Design

MSL LinkOn PharmaStats PQA™ Claims Database.

- Retrospective, matched cohort study design.

Figure 1. Retrospective, Matched Cohort Study Design

- Study cohort: Patients with T2DM who had an HF hospitalization in the pre-index period were matched to T2DM patients without an HF hospitalization (non-HF cohort).
- Exclusion: Patients who died during the index period were excluded.
- Definition: HF hospitalization: hospitalization with primary discharge diagnosis for HF (ICD-9-CM: 428.xx, 402.x1, except 427.5).
- Sample characteristics: All analyses were conducted separately for low- and high-risk patients, using SAS® version 9.2 (SAS Institute, Cary, NC, USA).

Sample/Population Selection

- Target Population: T2DM patients with an HF hospitalization (HF cohort) during the index period were matched to T2DM patients without an HF hospitalization (non-HF cohort).
- T2DM diagnosis: Based on a commercially insured population.

RESULTS (CONTINUED)

- Sample characteristics: Mean age was 68 years, male gender was 54%, and mean body mass index (BMI) was 32 kg/m².
- Outcomes: Inpatient costs accounted for the largest difference, and were 5.4 and 7.9 times higher in the high-risk cohort compared to patients in the non-HF cohort among both high- and low-risk patients.

Figure 2. Number of All-cause Healthcare Visits, per Patient per Month by Setting of Care During the Post-index Period* Type of Visit HF Non-HF * All comparisons were statistically significant at p < 0.001.

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 3. Mean Length of Stay and Bed-days

- Healthcare costs in 2015 United States dollars (USD): - Inpatient costs - Other outpatient visits may include labs, diagnostics, home health, etc.
- Bed-days during the post-index period among patients with 1 hospitalization.

Figure 4. Healthcare Costs During Index Hospitalization and per Patient per Month During the Post-index Period†

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 5. All-cause Healthcare Costs, per Patient per Month by Settings of Care During the Post-index Period* Type of Visit HF Non-HF * All comparisons were statistically significant at p < 0.001.

- Financial costs accounted for the largest difference, and were 3.4 and 4.9 times higher in the HF cohort compared to the non-HF cohort among low- and high-risk patients, respectively.

Figure 6. Mean Costs (USD 2015)

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 7. Mean Costs (USD 2015)

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 8. Mean Costs (USD 2015)

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 9. Mean Costs (USD 2015)

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 10. Mean Costs (USD 2015)

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)

Figure 11. Mean Costs (USD 2015)

- Study outcomes: All patients were included for analysis of outcomes from the index HF hospitalization, but only those surviving the index discharge were included for analyses of outcomes during the variable post-index period.
- HF hospitalizations (HF cohort only): Length of stay - 30-day all-cause readmission - Percentage of patients discharged as deceased - Healthcare resource utilization: Length of stay by post-index period - Bed-days during the post-index period among patients with 1 hospitalization - Number of all-cause visits by setting of care (reported per patient per month)