Abstract: **P5006**

Metformin reduces the risk of hospitalization for heart failure in type 2 diabetes patients: a retrospective cohort analysis

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Background: A beneficial effect of metformin on heart failure requires confirmation.

Purpose: To investigate whether metformin might affect the risk of heart failure hospitalization in type 2 diabetes patients.

Methods: Patients with new-onset type 2 diabetes during 1999-2005 were enrolled from the reimbursement database of Taiwan’s National Health Insurance and followed until December 31, 2011. Analyses were conducted in a propensity score (PS) matched-pair cohort (42,367 ever users and 42,367 never users) and hazard ratios were estimated by Cox’s hazard regression analysis incorporated with the inverse probability of treatment weighting using the PS.

Results: A total of 1,592 never users and 987 ever users were hospitalized for heart failure for the first time during follow-up, with a respective incidence of 843.34 and 499.18 per 100,000 person-years. The overall hazard ratio was 0.588 (95% confidence interval: 0.543-0.637), and the hazard ratios for the first (<29.13 months), second (29.13-61.63 months), and third (>61.63 months) tertiles of cumulative duration were 1.018 (0.914-1.135), 0.575 (0.511-0.647), and 0.340 (0.297-0.390), respectively. Sensitivity analyses conducted in an unmatched cohort before and after excluding patients who received an irregular refill of metformin or who were treated with incretin-based therapies during follow-up consistently supported such a protective effect of metformin on heart failure.

Conclusion: Metformin use is associated with a lower risk of hospitalization for heart failure.