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Biomarker-Based Risk Prediction of Incident Heart Failure in Pre-Diabetes and Diabetes



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ABSTRACT

OUTCOME OF INTEREST: INCIDENT HF. The primary outcome was incident HF. The HF adjudication protocols for each study are detailed in the [Supplemental Appendix](#).

STATISTICAL ANALYSIS. Participant-level data across all 3 cohorts were pooled. Baseline characteristics were compared among participants with diabetes versus participants with pre-diabetes using the chi-square test for categorical variables and the Kruskal-Wallis test for continuous variables. **In the overall study cohort, multivariable Cox proportional hazard models were constructed to evaluate the independent association of biomarkers of interest (hs-cTnT, NT-proBNP, hs-CRP, ECG-LVH) with the risk of incident HF.** Separate models were constructed using categorical and continuous measures of the biomarkers for the overall cohort and across subgroups

prevented per 1,000 participants treated with an SGLT-2i for 5 and 10 years was calculated across the biomarker score groups and pre-specified subgroups (age older than 65 years, 10-year ASCVD risk >10%) using previously reported relative risk reduction estimate of 36% for SGLT-2i (7). Number-needed-to-screen to prevent 1 HF event over 5 and 10 years was calculated for each biomarker score group by dividing the corresponding number-needed-to-treat by the prevalence of that score in the study population with diabetes. Sensitivity analyses were performed to evaluate the 5- and 10-year risk of incident HF across key subgroups stratified by body mass index (<30 and ≥30 kg/m²) and estimated glomerular filtration rate (<60 and ≥60 ml/min/1.73 m²).

All statistical analyses were performed using SAS version 9.4 (SAS Institute Inc., Cary, North Carolina).