Effects of Canagliflozin on Cardiovascular Biomarkers in Older Adults With Type 2 Diabetes

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Original Investigation

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Editorial Comment: Leaving the Glucocentric View: Can SGLT2 Inhibitors Halt CVD in Patients With Type 2 Diabetes? *

Canagliflozin Effects on CV Biomarkers

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be at least partially responsible for the observed outcomes **(4)**. Hypotheses regarding the mechanism of cardiovascular benefit for SGLT2 inhibition observed in the EMPA-REG OUTCOME study have focused on the multiple effects beyond glucose lowering, such as diuresis and natriuresis, weight loss, BP lowering, metabolic effects on the myocardium, favorable hemodynamic changes, and attenuation of cardiac remodeling **(5–12)**; each may result in improved cardiovascular outcomes **(11)**.

Biomarkers are useful in prognosis determination and informing the mechanism of benefit provided by therapeutic agents **(13)**. N-terminal pro–B-type natriuretic peptide (NT-proBNP) is recommended for the diagnosis and management of heart failure, with potential utility in the prediction of coronary heart disease and stroke outcomes **(14)**. Similarly, biomarkers of cardiomyocyte injury (e.g., high-sensitivity troponin I [hsTnI]) and those involved in cardiovascular stress/tissue fibrosis (e.g., soluble [s]ST2, galectin-3) may help elucidate prognosis and disease progression, with recent data, in particular, for hsTnI in T2DM **(15)**.

There are very limited data on the effects of SGLT2 inhibitors on cardiovascular biomarkers **(16–18)**. In this study, we sought to assess the longitudinal changes in the concentrations of NT-proBNP, hsTnI, sST2, and galectin-3 in older patients with T2DM randomized to receive canagliflozin or placebo in a 104-week study **(19,20)** to gain insights into the mechanisms of the potential beneficial cardiovascular effect of SGLT2 inhibitors.