# Early Flozin Use Tied to Improved LA Strain in ACS With Diabetes

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July 05, 2022

*The study covered in this summary was published on ResearchSquare.com as a preprint and has not yet been peer-reviewed.*

## Key Takeaways

- The addition of the SGLT2 inhibitor empagliflozin to routine acute coronary syndrome (ACS) medications significantly improved left atrial (LA) reservoir and contractile strain. These changes were not seen in most conventional diastolic function markers or in patients who did not receive the agent.
- SGLT2 inhibitors might be unique among glucose-lowering agents in their ability to improve diastolic cardiac remodeling.

## Why This Matters

- This study is thought to be the first to assess the effect of early empagliflozin initiation on LA strain after an ACS in patients with type 2 diabetes.
- SGLT2 inhibitors (flozins) initiated before discharge might serve as a potential treatment approach in ACS, as they were associated with prompt improvement in LA function assessed by LA strain, and have previously been shown to improve diastolic function.
- LA strain might serve as a simplified marker of cardiac function, more specific than LA function and diastolic function, in the prediction of poor outcomes and the development of clinical heart failure.

## Study Design

- Empagliflozin was initiated in eligible patients with ACS and type 2 diabetes at an Australian hospital before discharge. Patients not started on empagliflozin served as a control group. LA strain was assessed at baseline and at 3- to 6-month follow-up with transthoracic echocardiograms and 2D-speckle-tracking echocardiography.
- Forty-four participants (n = 22 in each group) completed the study, representing 88% follow-up. Baseline characteristics were similar, except HbA1c was higher in the empagliflozin group.

## Key Results

- A significant increase in LA reservoir, conduit, and contractile strain was seen in the empagliflozin group at follow-up in the four-chamber view ($P = .005$, $P = .047$, and $P = .006$, respectively).
- The two-chamber view demonstrated a significant increase with empagliflozin in LA reservoir ($P = .005$) and contractile strain ($P = .024$), but not LA conduit strain ($P = .193$). There was no significant difference in the control group in LA reservoir, conduit, or contractile strain in two- and four-chamber views.
- The difference in change between groups from baseline to follow-up was significant for LA reservoir and contractile strain in the two-chamber ($P = 0.015$ and $P = .029$, respectively) and four-chamber ($P = 0.009$ and $P = 0.004$, respectively) views.
- HbA1c decreased significantly from baseline to follow-up in the empagliflozin group (9.8% - 7.5%; $P < .001$), but not in the control group (6.6% - 6.7%; $P = .728$).
- Changes in LA reservoir and contractile strain from baseline to follow-up were significantly associated with changes in HbA1c ($P = .004$ and $P = .016$, respectively).

## Limitations

- HbA1c differed significantly at baseline between the two groups. HbA1c change for all participants correlated significantly with change in LA reservoir and LA contractile strain, raising the question of whether LA function changes can be attributed in part to improved glycemic control.
- The use of LA strain has some key limitations, including poor access to the software, limited intervendor reproducibility, and no established normal reference ranges.

## Study Disclosures


- One author was supported by a Western Australia Health Research Fellowship.
- Two authors have received speaker honoraria and conference support from Sanofi, MSD, Boehringer Ingelheim, Lilly, AstraZeneca, and Novo Nordisk; one has also participated in advisory committees for Sanofi, Lilly, and Novartis. A third author reports paid lectures from AstraZeneca, Pfizer, and Amgen not related to the topic in the manuscript; provides consultancy services; and has equity interest in Artrya Ltd. A fourth author has received research funding, speaker honoraria from Sanofi, and conference support from Boehringer Ingelheim and Amgen.


*This is a summary of a preprint research study, Early SGLT2 Inhibitor Use is Associated with Improved Left Atrial Reservoir and Contractile Function Following Acute Coronary Syndrome in Patients with Type 2 Diabetes, written by Amro Sehly and colleagues from Fiona Stanley Hospital, Murdoch, Western Australia, on ResearchSquare.com and provided to you by Medscape. This study has not yet been peer-reviewed. The full text of the study can be found on ResearchSquare.com.*

Credits:

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Cite this: Early Flozin Use Tied to Improved LA Strain in ACS With Diabetes - *Medscape* - Jul 05, 2022.