CLINICAL INSIGHTS

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Effects of empagliflozin on functional capacity, LV filling pressure, and cardiac reserves in patients with type 2 diabetes mellitus and heart failure with preserved ejection fraction: a randomized controlled open-label trial

Artem Ovchinnikov, et.al; Cardiovasc Diabetol, 2025 May 9;24(1):196.

- Prospective single-center trial, with 70 diabetic patients enrolled with stable HF. The patients were randomly assigned in an open-label fashion to the empagliflozin group (10 mg a day, n = 35) or the control group (n = 35) for 6 months.
- After 6 months of empagliflozin therapy, the 6-min walk test distance (6MWTD) significantly increased, whereas the left atrial (LA) volume index and the early mitral inflow to mitral annulus relaxation velocity (E/e') ratio both at rest and during exercise decreased compared with those of the control group ($P < 0.05$ for all).
- LV diastolic, LA reservoir and contractile, and chronotropic reserves also improved in the empagliflozin group compared with those in the control group ($P < 0.05$ for all).
- Also, treatment with empagliflozin led to improvements in N-terminal pro-brain natriuretic peptide(NT-proBNP) and profibrotic biomarker (ST2) blood levels compared with those in the control group ($P < 0.05$ for both).

In diabetic patients with HFpEF, empagliflozin treatment improved exercise capacity, which appeared to be the result of favourable effects on LV diastolic dysfunction and key cardiac reserves: LV diastolic, LA reservoir and contractile, and chronotropic.

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