

# Short term use of empagliflozin does not improve left ventricular function in non-diabetic hypertensive patients: Results from a non-randomised controlled trial



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## Biography

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## Abstract

**Background:** A selective inhibitor of sodium-glucose cotransporter 2 (SGLT2), empagliflozin, has demonstrated its effects in reducing cardiovascular mortality and hospitalization rates for heart failure in type 2 diabetes patients. However, the cardiac-intrinsic mechanism for this cardiovascular benefit has not been sufficiently studied. We therefore aimed to investigate the effect of empagliflozin on left ventricular function in a group of patients with grade I hypertension.

**Methods:** We carried out a single-arm non-randomized clinical trial at the National Obesity Centre in Yaounde over a period of 8 months (October 2016 to May 2017), where patients to receive 25mg of empagliflozin once daily. Cardiac ultrasound, 24 hour ambulatory blood pressure measurement, resting electrocardiography and biological assessment were carried out at baseline and at the end of a 6-week treatment period with empagliflozin. The primary outcome was the improvement of the left ventricular relaxation evaluation criteria. Ethical approval was obtained from the Centre Regional Ethics Committee in Yaoundé, Cameroon.

**Results:** A total of 11 patients were treated (median observation time, 6 weeks). We noted a non-significant improvement in the early lateral annular velocity from 9.7 [9.2-11.4] cm/s to 9.1 [8.8-10.2] cm/s,  $p=0.21$ . We also noted a nonsignificant improvement of the material profile (E/A) from 0.71 [0.58 – 0.75] to 0.82 [0.79 – 0.93],  $p=0.008$ . There were no differences in E/E' ratio, 5.0 [4.1 – 6.3] vs 5.6 [4.9 – 7.4],  $p=0.07$ . There was a non-significant drop in both systolic ( $p=0.06$ ) and diastolic ( $p=0.09$ ) blood pressure. We also observed on ECG a drop of the PR interval from 200 [157- 200] ms to 160 [143- 186] ms,  $p=0.04$ .

**Conclusion:** Short-term treatment with empagliflozin does not show an improvement of the left ventricular function in grade I hypertensive patients with diastolic dysfunction.

