BioSpectrum the business of Bio & Health Sciences ASIA EDITION

Singapore study reveals surprising twist in how diabetes drugs help the heart

May 31, 2024 | News

Unveils unexpected mechanisms of SGLT2 inhibitors, challenging the assumption that their beneficial, organ-protective effects stem from a diuretic effect



A randomised, placebo-controlled clinical trial led by a collaboration between Duke-NUS Medical School, National Heart Centre Singapore (NHCS) and Klinikum Nürnberg, Germany, has revealed surprising new insights into how SGLT2 inhibitor drugs, originally developed for diabetes, benefit patients with heart failure. Contrary to common assumptions, these drugs may improve cardiac outcomes and heart health without acting as diuretics.

SGLT2 inhibitor drugs are the new blockbuster treatment for chronic heart failure because they very quickly stabilise heart function and reduce hospitalisations and patient deaths. The drugs release more glucose into the urine, and thereby have the potential to pull more fluid from the body into the urine, alleviating the congestion experienced by patients with heart disease. Given this diuretic potential, leaflets accompanying the drugs list dehydration as a common side effect of their use.

However, results from this clinical trial, published in the *Journal of the American College of Cardiology*, cast doubt on the presumed diuretic action of SGLT2 inhibitors in patients with heart failure.

In parallel to the clinical trial in Singapore, the team's collaborators in Germany have developed methods that are now available to detect activation of the ancient metabolic pathways in patients' urine.

The team will use this to uncover the actual mechanisms behind these drugs' organ-protective benefits and investigate how these changes may improve the healthspan not just of patients with heart failure but also with kidney disease, diabetes or living with other ageing-related ailments.