

# Heart Congress and Cardiac Surgery

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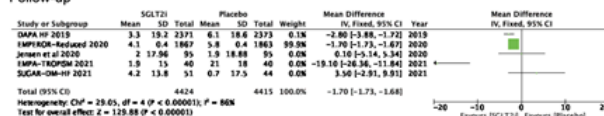
## Symptomatic and laboratory value effect of sglt2 inhibitors on patients with Heart failure reduced ejection fraction: A meta-analysis

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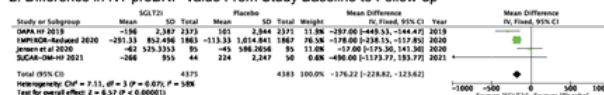
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Patients with heart failure commonly have other comorbidities including atrial fibrillation; diabetes mellitus type II, and chronic kidney disease. Recently, there have been advances in pharmacological treatment methods. Sodium-glucose co-transporter 2 inhibitors (SGLT2i), originally antidiabetic medications, have shown significant improvement in decreasing the risk of all-cause mortality, cardiovascular mortality, hospitalization for heart failure, Kansas City Cardiomyopathy Questionnaire (KCCQ), and N-terminal pro-B-type natriuretic peptide (pro-BNP) in patients with heart failure (both preserved and reduced). Recently, newer randomized controlled trials (RCTs) have been published on this topic. We conducted a comprehensive review of all RCTs from inception to April 2021 that compared SGLT2i, both empagliflozin and dapagliflozin, to placebo specifically in patients with heart failure reduced ejection fraction (HFrEF). The two primary outcomes measured were KCCQ total symptom score and pro-BNP. Statistical analysis was conducted using Review Manager 5.4. Two-sided p values of <0.05 constituted statistical significance. Ultimately, five studies were included resulting in a total of 8,839 patients and a median-weighted follow-up period of 19.70 months. Heterogeneity was moderate-high across the trials (58-86%). Both KCCQ score (odds ratio [OR] -1.70; 95% CI -1.73 to -1.68; p<0.00001) and NT-proBNP (OR -176.22; 95% CI -228.82 to -123.62; p<0.00001) had significantly improved values in the SGLT2i group (Figure 1). This meta-analysis demonstrates that in addition to beneficial outcomes and decreased side effects, patients with HFrEF have significantly improved levels of symptomatic and laboratory values when treated with SGLT2i. Consequently, these medications should be highly considered in patients with HFrEF - especially in the setting of comorbid diabetes. Further randomized controlled trials with a larger patient population and longer follow-up duration should be conducted to confirm these findings. If SGLT2i are deemed beneficial, randomized controlled trials should also compare empagliflozin versus dapagliflozin in this patient population.

1. Difference in Kansas City Cardiomyopathy Questionnaire Score From Study Baseline to Follow-up



2. Difference in NT-proBNP Value From Study Baseline to Follow-up



### Biography

Rohan Prasad studied human biology at michigan state university (MSU), USA and graduated with a bachelors of science in 2015. He then received his doctor of osteopathy degree in 2020 from MSU college of osteopathic medicine. As of July 2021, he is completing the second year of an internal medicine residency at MSU - sparrow hospital. Thereafter, he aspires to complete a cardiology fellowship and career at the same institution. So far, he has published over 20 research articles in journals, including 10 in PubMed indexed

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