

# Impact of sodium glucose cotransporter-2 inhibitors on atrial fibrillation recurrence after catheter ablation in heart failure patients

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**Introduction:** Atrial fibrillation (AF) is a common arrhythmia in patients with heart failure (HF), and its recurrence after catheter ablation (CA) remains a significant clinical challenge. The use of SGLT2 inhibitors (SGLTi), has shown cardiovascular benefits in HF patients, including potential impacts on arrhythmias.<sup>1</sup> This study aims to evaluate the effect of SGLT2 inhibitors on recurrence of persistent AF in HF patients following CA, focusing on different heart failure subtypes: HFpEF (preserved ejection fraction), HFmrEF (mid-range ejection fraction), and HFrfEF (reduced ejection fraction).

**Patients and Methods:** This study included 74 patients with heart failure, divided into two groups of 37. Group 1 (mean age 65 ±7, female 27 %, mean NT-proBNP 2458 ±3299 pg/ml) consisted of patients who did not receive SGLT2 inhibitors, while group 2 included patients who were on SGLT2 inhibitors (mean age 66 ±8, female 18,9%, mean NT-proBNP 242 ± 1371 pg/ml). Each group was further categorized based on heart failure subtypes: HFpEF, HFmrEF, and HFrfEF. AF recurrence after CA was recorded for all patients. In Group 1, there were 28 patients with HFpEF, 4 with HFmrEF, and 5 with HFrfEF. In Group 2, 13 patients had HFpEF, 4 had HFmrEF, and 21 had HFrfEF. The primary outcome was the recurrence of AF within a specified follow-up period.

**Results:** In Group 1 (without SGLT2 inhibitors), the recurrence of AF was observed in 6 patients with HFpEF (21,4%), 1 patient with HFmrEF (25%), and 2 patients with HFrfEF (40%). In Group 2 (with SGLT2 inhibitors), AF recurred in 3 patients with HFpEF (23%), 0 with HFmrEF, and 6 with HFrfEF (28%). Conclusion The results suggest that the use of SGLT2 inhibitors may reduce AF recurrence in HFpEF and HFmrEF subtypes but may have limited or no effect on HFrfEF patients. The lower recurrence rates in these subgroups suggest potential benefits of SGLT2 inhibitors in modulating arrhythmic risk, likely through mechanisms related to improved cardiovascular function and reduced inflammation.

**Conclusion:** In patients with HFrfEF, the effect of SGLT2 inhibitors on AF recurrence appears to be less pronounced, which could be due to the more advanced structural heart changes seen in this population. Further studies with larger sample sizes and longer follow-up periods are needed to confirm these findings.

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## LITERATURE

1. Soliman Y, Abuelazm M, Amer BE, Hukamdad M, Ellabban MH, Hendi NI, et al. Impact of SGLT2 Inhibitors on Atrial Fibrillation Recurrence after Catheter Ablation in Type 2 Diabetes Mellitus: A Meta-Analysis of Reconstructed Kaplan-Meier Curves with Trial Sequential Analysis. *Am J Cardiovasc Drugs.* 2024 Sep;24(5):629-640. <https://doi.org/10.1007/s40256-024-00661-5>