Potential Additional Benefits of Cardio-renal-metabolic Therapies on the Incidence of Atrial Fibrillation

Drug therapy for cardio-renal-metabolic diseases can prevent new-onset atrial fibrillation. A meta-analysis investigated which pharmacotherapies have an effect on the risk of new-onset atrial fibrillation.

To this end, 249 randomized clinical trials (RCTs) involving 745,041 patients were analyzed, which compared the effect of a non-antiarrhythmic cardio-renal-metabolic drug to a control group or another active substance in terms of the occurrence of atrial fibrillation.

A total of 249 RCTs involving 745,041 patients were included, of which 207 identified atrial fibrillation based on reports of adverse events, 161 were placebo-controlled, and 15 had atrial fibrillation as a prespecified endpoint. In the placebo-controlled trials there were significant differences in the incidence of atrial fibrillation in the treatment of heart failure with reduced ejection fraction (HFrEF) with angiotensin-converting enzyme (ACE) inhibitors and angiotensin receptor blockers (ARBs) (relative risk [RR]: 0.69; 95% confidence interval [CI]: 0.60–0.80), mineralocorticoid receptor antagonists (MRA) (RR: 0.62; 95% CI: 0.43–0.90), and SGLT2 inhibitors (RR: 0.62; 95% CI: 0.44–0.87), as well as in the treatment of chronic kidney disease with SGLT2 inhibitors (RR: 0.53; 95% CI: 0.33–0.85) and in the treatment of obesity with GLP-1 receptor agonists (GLP-1 RA) (RR: 0.79; 95% CI: 0.63–0.99). However, the number of atrial fibrillation events per study was low, and none of the studies was sufficiently conclusive with regard to the occurrence of atrial fibrillation.

This meta-analysis is limited by the fact that it is predominantly based on post hoc data, which often originates from reports of adverse events and is subject to bias as well as over- and underestimation with regard to treatment effects. However, according to the study authors, the available data provides hypothesis-generating estimates for future studies that the treatment of HFrEF with ACE inhibitors/ARBs, MRA, and SGLT2 inhibitors, the treatment of chronic kidney disease with SGLT2 inhibitors, and the treatment of obesity with GLP-1 RA could be associated with a relative risk reduction for the occurrence of atrial fibrillation. vh ◻

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