COMMENT ON CHOI ET AL.

Alcohol Abstinence and the Risk of Atrial Fibrillation in Patients With Newly Diagnosed Type 2 Diabetes Mellitus: A Nationwide Population-Based Study. Diabetes Care 2021;44:1393–1401

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We read with great interest the article by Choi et al. (1), who investigated the impact of alcohol abstinence on the prevention of new-onset atrial fibrillation (AF) in patients with type 2 diabetes. They reported that alcohol abstinence was associated with a low risk of AF development in patients newly diagnosed with type 2 diabetes. This study is a valuable addition to clinical practice. However, two issues have not been addressed by the authors, preventing the generalization and ultimate application of the study results to clinical practice.

First, although the conclusion appeared to be intuitively and statistically sound, it could be the result of immortal time bias. Immortal time is a follow-up period during which, because of the definition of exposure, the outcome under study does not occur (2). New-onset AF can occur at any time during follow-up, and patients live longer during the follow-up period and can have more chances of reporting new-onset AF. Immortal time was incorrectly attributed to exposure to new-onset AF; however, in reality, new-onset AF does not contribute to survival time (2). In this study, 112,271 patients were initially identified in the control group. However, 9,602 patients were excluded due to death or loss to follow-up. On the other hand, the heavy alcohol consumption (alcohol intake ≥40 g/day) group had the same number of patients before and after the follow-up period. Thus, the incidence of new-onset AF may have been underestimated in the control group, since immortal time bias and the observed new-onset AF and its associations may have been overestimated in this study.

Second, the occurrence of drug-induced AF is more likely in patients with risk factors and comorbidities that commonly coexist with new-onset AF, such as advanced age, family history of AF, hypertension, thyroid dysfunction, sleep apnea, and cardiovascular disease (3). New-onset AF has been associated with medications such as adenosine, dobutamine, milrinone, corticosteroids, ondansetron, paclitaxel, mitoxantrone, and doxorubicin (4,5). These medications have been reported to induce new-onset AF. However, the data regarding current medications between the three groups were not available in this study. Thus, the possibility of drawing accurate or reliable conclusions is limited.

In conclusion, although we share some concerns about this article, we applaud the authors for their commendable work and hope that this study will benefit the readers. We also look forward to further research on the relevance of lifestyle modification in the reduction of new-onset AF.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

References

1. Choi Y-J, Han K-D, Choi E-K, et al. Alcohol abstinence and the risk of atrial fibrillation in patients with newly diagnosed type 2 diabetes mellitus: a nationwide population-based study. Diabetes Care 2021;44:1393–1401
2. Gleiss A, Oberbauer R, Heinze G. An unjustified benefit: immortal time bias in the analysis of time-dependent events. Transpl Int 2018;31:125–130
3. Tamargo J, Caballero R, Delpón E. Drug-induced atrial fibrillation. Expert Opin Drug Saf 2012;11:615–634
4. Kaakeh Y, Overholser BR, Lopshire JC, Tisdale JE. Drug-induced atrial fibrillation. Drugs 2012;72:1617–1630
5. Alonso A, MacLehose RF, Chen LY, et al. Prospective study of oral anticoagulants and risk of liver injury in patients with atrial fibrillation. Heart 2017;103:834–839

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