RESPONSE TO 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 thank Lin et al. (1) for their interest in our article, which showed that abstainers from alcohol after diagnosis of type 2 diabetes had a lower risk of atrial fibrillation (AF) than the constant drinkers (2). Lin et al. suggested two issues with our article, namely, immortal time bias and drug-related confounding factors.

Immortal time bias is an issue in some observational studies when the treatment exposure occurred after the initiation of the study (3). Study subjects should survive long enough to receive treatment, so time-dependent events should be analyzed appropriately. Dep-ending on the definition of the exposed and unexposed groups in the observational study, immortal time could be misclassified under the time exposed to an intervention when an individual was not yet exposed (3). In our study, it could be doubtful whether there was an immortal time between the time of diagnosis of type 2 diabetes and the abstinence of alcohol (intervention). However, the index date for initiating follow-up, rather than the time of diagnosis of type 2 diabetes, was defined as the date of the last health screening examination. This event occurred before alcohol abstinence. The immortal time pertained to the interval between enrollment and intervention that exists before the follow-up was initiated. Thus, the outcome event (i.e., AF) was not influenced by the immortal time bias in our study.

Second, the confounding factors, inherent in the nature of the retrospective study design, are essential. To correct for confounders, a subgroup analysis and Cox proportional hazards analysis were conducted. Previously, many studies identified the potential risk factors for AF (4). Accordingly, major risk factors, including age, BMI, smoking, and comorbidities, such as hypertension and heart failure, were considered confounding factors in the current study. The drugs that Lin et al. referred to had limited use for specific conditions (e.g., chemotherapy). They were rarely used in our study population. Since the study population includes patients with type 2 diabetes, oral hypoglycemic agents and/or insulin were likely confounding factors. Heart failure also was used as a correction variable. Overall, this study sufficiently verified the reliability of the study results while accounting for the major confounding factors.

This study used the appropriate time-dependent analysis to avoid immortal time bias and adjusted for confounding variables that had a significantly more potent effect than the drug. Our data supported the holistic approach (including lifestyle changes) to AF care, which is associated with improved clinical outcomes (5) and is promoted in guidelines.

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

Reference

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