Introduction: Although heavy habitual consumption of alcohol is well known to be associated with incident atrial fibrillation (AF), there is a paucity of data on the relationship between alcohol consumption and adverse events of atrial fibrillation. We investigated the association between alcohol consumption and composite adverse outcomes (stroke, TIA [transient ischemic attack], systemic embolic event, or AF related hospitalizations [AF rate or rhythm control & heart failure management]) and secondly, dose–response relationship between the amount of alcohol consumption and these adverse outcomes among patients with AF.

Methods: A total of 9411 patients with nonvalvular AF were consecutively enrolled in a prospective observational registry (COmparison study of Drugs for symptom control and complication prEvention of Atrial Fibrillation [CODE-AF] registry) from 10 tertiary hospitals in Korea between June 2016 and May 2019. Subjects were categorized into 4 groups according to their alcohol consumption and adverse events data (ischemic stroke, TIA, systemic embolic event or AF hospitalizations) were collected during the follow-up period to calculate hazard ratio using Cox proportional hazard model.

Result: Subjects were categorized as none -rare (converge to 0), Light (<100 g/week), Moderate (100-200g/week), and Heavy alcohol consumption group (≥200g/week) and their proportions were 7455 (79.2%), 795 (8.4%), 345 (3.7%), 816 (8.7%), respectively. During follow-up period (17.4±7.3month), patients in heavy alcohol consumption group showed an increased risk of adverse outcomes (ischemic stroke, TIA, systemic embolic event or AF hospitalizations) (adjusted Hazard Ratio [HR] 1.32, 95% confidence interval [CI] 1.06-1.66) when compared to those in none-rare alcohol consumption group. However, those in the light group (adjusted HR 0.88, 95% CI 0.68-1.13) and moderate group (adjusted HR 0.91, 95% CI 0.63-1.33) had no significant differences between adverse outcomes. J-shaped association was shown between the amounts of alcohol consumption per week and the risk of adverse outcomes in patients with atrial fibrillation.

Conclusion: Our findings suggest that heavy alcohol consumption increases the risk of adverse events
in patients with AF, whereas light or moderate alcohol consumption does not.