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Comparison of incidence of acute kidney injury, chronic kidney disease and end-stage renal disease between atrial fibrillation and atrial flutter: real-world evidences from a propensity score-matched national cohort analysis

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Objectives: We investigated the adverse renal outcomes in patients affected by either atrial fibrillation (Afib) or atrial flutter (AFL).

Methods: Using the Taiwan National Health Insurance research database, both cohorts were 1:1 propensity score matched based on age, sex, index year, and comorbidity using logistic regression model. Hazard ratios (HRs) and corresponding 95% confidence intervals (CIs) of acute kidney injury (AKI), chronic kidney disease (CKD), and end-stage renal disease (ESRD) between the two cohorts were obtained using Cox proportional hazard regression models. Competing-risks regression models were applied to calculate the subhazard ratios (SHRs) and corresponding 95% CIs of the adverse renal outcomes.

Results: Afib patients were 1.15 and 1.33 times more likely to experience CKD and ESRD, respectively, than AFL patients (incidence rate per 10,000 person-years (IR): CKD, 10.8 vs 9.41; ESRD, 4.44 vs 3.34), with the adjusted HRs of 1.18 and 1.32 (CKD, 95% CI = 1.07-1.30; ESRD, 95% CI = 1.12-1.55). Afib patients were 1.08 times (95% CI = 1.01-1.16) more likely to have AKI than AFL patients after adjusting for confounding covariates. Competing risk analysis showed that Afib patients were 1.08 (95% CI = 1.01-1.15), 1.18 (95% CI = 1.07-1.30) and 1.32 (95% CI = 1.12-1.55) times more likely to experience AKI, CKD and ESRD than AFL subjects.

Conclusions: This study showed that Afib conferred worse renal events of AKI, CKD and ESRD than AFL.