Effect of Chronic Kidney Diseases on Mortality in Patients Treated with Digoxin for Non-Valvular Atrial Fibrillation: A Nationwide Register-Based Retrospective Cohort Study.

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Introduction: Digoxin is commonly used worldwide as heart rate control agent in the treatment of atrial fibrillation [1]. Studies have examined the effect of digoxin on mortality [2], but no study has evaluated the direct effect of chronic kidney disease on mortality in patients that received digoxin for atrial fibrillation.

Aim: To investigate the impact of chronic kidney disease on all-causes and cardiovascular mortality in patients treated with digoxin for atrial fibrillation.

Methods: All Danish patients with a hospitalization diagnosis of non-valvular atrial fibrillation and/or atrial flutter from January 1, 1997 to December 31, 2012 were identified. Cox proportional hazard model was used to compare the adjusted risk of all-causes and cardiovascular mortality among patients with and without chronic kidney disease and among patients with different chronic kidney disease stages. The outcomes were evaluated within 180 days and 2 years from the first digoxin prescription.

Results: We identified 37,981 patients in treatment with digoxin of which 1,884 patients had the diagnosis of chronic kidney disease. Cox regression analysis of 180 days of follow-up period showed no statistically significant difference in all-causes (Hazard Ratio, HR 0.89; 95% confident interval, CI 0.78–1.03) and cardiovascular mortality (HR 0.88; 95%CI 0.74–1.05) among patients with and without chronic kidney disease. In the analysis performed on 2 years of follow-up period, no statistically significant difference was observed for both all causes (HR 0.90; 95%CI 0.79–1.03) and cardiovascular mortality (HR 0.87; 95%CI 0.74–1.02). Moreover, no statistically significant difference was observed in patients with and without estimated Glomerular Filtration Rate (eGFR) <30ml/min/1.73m2 compared to patients with eGFR >30ml/min/1.73m2. Moreover, when stages of chronic kidney disease were considered according to Kidney Disease Outcome Quality Initiative clinical practice guidelines (Stage 4: 15≤eGFR≤29; Stage 3: 30≤eGFR≤59; Stage 2: 60≤eGFR≤89; Stage 1: eGFR ≥90), no statistically significant difference was observed in comparison to the reference group (Stage 5: eGFR <15), for both all-causes and cardiovascular mortality within 180 days or 2 years from the first digoxin prescription.

Conclusions: No direct effect of chronic kidney disease and chronic kidney disease stages on all-causes and cardiovascular mortality within 180 days and 2 years from the first digoxin prescription was found in patients with non-valvular atrial fibrillation treated with digoxin.

References

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