

00190 Survival Analysis on Implantable Cardioverter Defibrillator for Primary Prevention Indications in Chronic Kidney Disease Patients

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Aims: Observational studies as well as meta-analysis have shown that implantable cardioverter defibrillator (ICD) patients with chronic kidney disease have increased mortality and therefore the value of device therapy remained uncertain. Accordingly, we sought to perform survival analysis on ICD for primary prevention indications in chronic kidney disease patients in our centre.

Methodology: This is a retrospective study using ICD registry from 2009 to 2017. Chronic kidney disease (CKD) is defined as $\text{GFR} < 60 \text{ mL/min/1.73m}^2$. Those patients with secondary prevention indications were excluded. Survival analysis using Kaplan—Meier was performed comparing those with CKD versus those without CKD.

Result: 240 patients received ICD as primary prevention indication during the study period. 41.2% of patients have chronic kidney disease. Mean follow up was 3.0 ± 1.3 years (95% CI: 2.7-3.3).

Comparing CKD with non-CKD, notably significant different including mean age at ICD implantation (67.0 ± 8.5 years old vs 57.6 ± 10.8 years old, $p < 0.001$), eGFR (42.3 vs 60.5 , $p < 0.001$), presence of diabetes (58.6% vs 43.3% , $p = 0.019$), hypertension (75.8% vs 46.1% , $p < 0.001$), ischemic cardiomyopathy (72.6% vs 59.0% , $p = 0.032$) and peripheral vascular disease (11.1% vs 2.2% , $p = 0.004$).

Mean cumulative survival was significantly lower ($p < 0.001$) in CKD (4.1 ± 0.2 years, 95% CI: 3.7-4.5) compared to non-CKD group (5.7 ± 0.1 years, 95% CI: 5.5-6.0). Independent predictors of survival using cox regression were age (HR: 1.075, 95% CI: 1.0-1.1, $p < 0.001$) and absence of atrial fibrillation (HR: 0.4, 95% CI: 0.2-0.7, $p = 0.006$). In term of cause of death, compared with non-CKD patients (16.7%), most CKD patients (42.9%) died of cardiac related death in particular ischemic heart disease ($p = 0.31$).

Conclusion: In our cohort consists of multi-ethnic Asian population, CKD patients with ICD had decrease survival benefit as compared with non-CKD patients with ICD. Given the CKD prevalence is increasing in trend, these findings need to be confirmed by additional studies specifically focusing on patients with different stages of CKD.