Survival Analysis Without Defibrillator Shock in Patients with Renal Failure

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Introduction: Patients with advanced chronic kidney disease (CKD) with heart failure suffer from high rates of mortality. The benefit of implantable cardioverter defibrillator (ICD) is unclear in this group of patients. Accordingly, we aim to evaluate the mortality risk without ICD shock in this high risk population.

Methods: This was a retrospective study using ICD registry from 2009 to 2017. Advanced CKD is defined as eGFR < 30 ml/min/1.73m². Survival analysis using Kaplan Meier was performed comparing those with and without advanced CKD.

Result: A total of 269 patients received ICD in which 8.9% patients with advanced CKD. Mean follow up was 3.3 ± 2.43 years. Comparing with and without advanced CKD patients, notably significant difference including mean eGFR (21.2±9.3 vs 55.6±8.7, p<0.001), presence of hypertension (86.4% vs 58.3%, p=0.003) and diabetes (77.3% vs 44.1%, p=0.003). Mean cumulative survival was significantly lower in advanced CKD group versus without advanced CKD group (5.5+0.1 years vs 3.9+0.4 years, p<0.001). Independent predictors of survival using cox regression was absence of atrial fibrillation (HR: 0.14, 95%CI: 0.05-0.38, P<0.001). Majority of the cause of death were non cardiac/arrhythmic cause for both groups (advanced CKD: 75%, non-advanced CKD: 93.3%) 

Conclusion: Advanced CKD and heart failure patient without appropriate ICD shock had a significantly lower survival benefit as compared with patients without advanced CKD.