Procedural Complications and In-hospital Outcomes after Implantation of a Watchman Left Atrial Appendage Occlusion Device in Patients with Chronic and End Stage Renal Disease

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Background:
Left atrial appendage closure using a Watchman device has emerged as an alternative strategy for mitigating ischemic stroke risk in selected patients with atrial fibrillation (AF). The data on safety of Watchman device in specific patient sub-groups remain limited.

Objective:
To determine procedural complications and in-hospital outcomes after Watchman implantation in patients with chronic (CKD) and end-stage renal disease (ESRD).

Methods:
Data were extracted from National Inpatient Sample for calendar years 2015-2018. Watchman implantations were stratified on the basis of ICD codes of 37.90 and 02L73DK. The outcomes assessed in our study included overall and major complications from the Watchman implantation and inpatient mortality and resource utilization. We also studied the independent association of CKD and ESRD with key outcomes of major complication, in-hospital mortality, length of stay and hospitalization cost.

Results:
A total of 38,359 Watchman recipients were included in the final analysis. Black and Hispanic Watchman recipients had higher prevalence of CKD and ESRD when compared to White patients. CKD and ESRD Watchman recipients had higher rates of overall and major procedural complications in crude analysis compared to no CKD Watchman recipients (16.3% and 19% vs. 12.8% and 6.9% and 8.7% vs. 6%, p < 0.001). Crude inpatient mortality was also higher in both CKD and ESRD Watchman recipients when compared to no CKD patients (0.5% and 1.3% vs. 0.3%, p < 0.001). In adjusted analysis, ESRD remained an independent predictor of in-hospital mortality (adjusted OR 3.221, 95% CI 1.732-5.99).

Conclusion:
CKD and ESRD patients had increased procedural complications with the Watchman implantation in crude analysis while ESRD was also found to independently predict in-hospital mortality in these patients.
Figure: Independent association of chronic kidney disease (CKD) and end-stage renal disease (ESRD) with major outcomes after the Watchman implantation