

# Medication Use Before and After Acute Kidney Injury in General Medicare Patients

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## Introduction

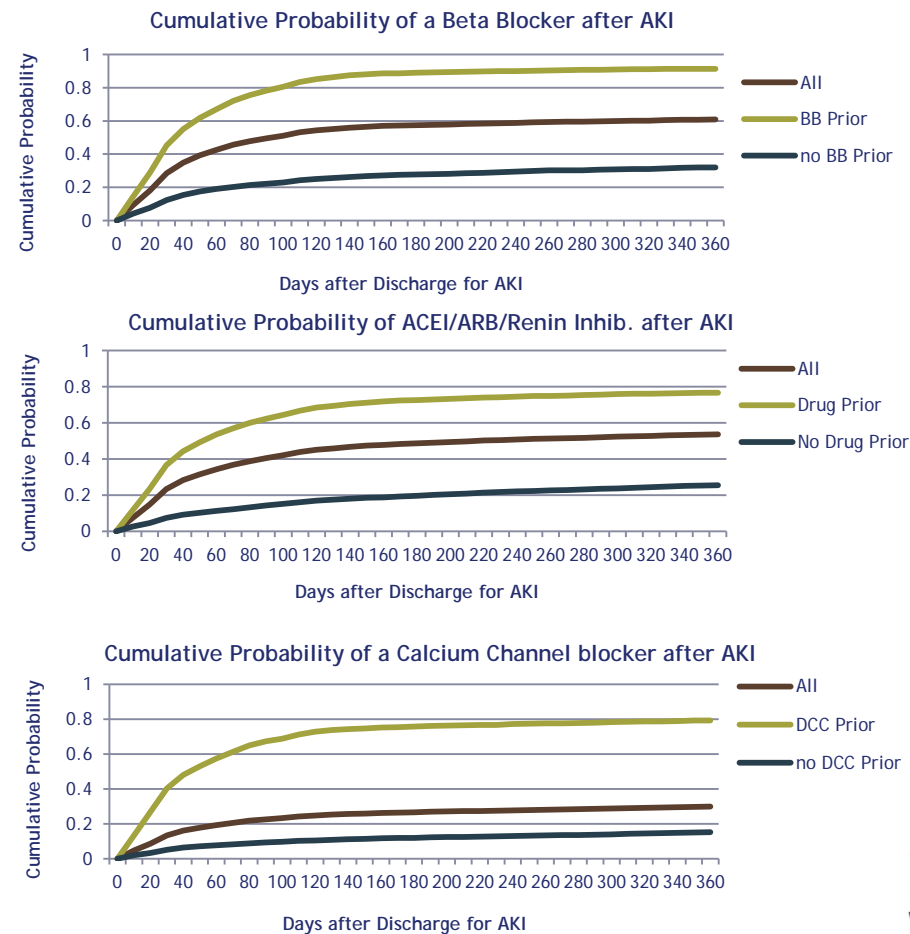
- AKI association with short-term morbidity and mortality has been defined in the medical literature, with estimated 30 day mortality to be 50-80%.
- Recently long-term outcomes of AKI in development of CKD, ESRD and mortality are becoming available.
- The precise mechanism by which AKI leads to CKD and ultimately to ESRD is unknown.
- One proposed mechanism is the maladaptive repair of the renal epithelial cells leading to increased production of profibrotic cytokines.
- Other possibility could be reductions in therapies known to slow progression of kidney disease like ACEI/ARBs and anti hypertensive medications around the time of AKI.
- We studied the influence of AKI on cardio protective and reno protective medications in the Medicare population.

## Methods

- We used the Medicare 5% Random Sample to identify patients aged 65+ who had a hospitalization for Acute Kidney Injury (AKI) between April 1st 2009 - Dec 31st 2009.
- Patients were required to have Medicare Part D for at least 3 months before and at the time of their AKI hospital discharge
- Medicare Part D claims data was used to identify prescription medications that were filled 3 months before and up to 1 year after the AKI episode.
- The cumulative probability of obtaining a medication for select medications was evaluated in the cohort overall and in those who had been on the medication prior to the AKI episode.
- Patients were censored at death, ESRD, recurrent AKI hospitalization, or loss of Part D coverage

## Results

- We identified a total of 15233 patients with an AKI episode in 2009 with prescription drug coverage.
- Of these, the percent with Part D claims for medications prior to the AKI were as follows:
  - Beta Blocker: 49%;
  - ACE-I/ARB/Renin inhibitor 53.6%;
  - Calcium Channel Blocker 23.1%
- Figure demonstrates the cumulative probability of receiving these medications after an AKI episode
- In patients previously on specific classes of medications the follow percentage of patients were continued on the medication at 1 year post AKI discharge:
  - Beta Blocker: 91.5%
  - ACE/ARB/Renin inhibitors were 76.6%
  - Calcium Channel Blocker were 79.1%



## Conclusions

- Many antihypertensive medications are stopped during an AKI episode
- Most patients have their cardio and reno protective medications restarted by 1 year after an AKI episode.
- Future studies should determine why a percentage of patients on ACEI/ARBs do not have their medications restarted after an AKI episode.