

# Impact of Treatment on Readmission Rates in Patients with Chronic Kidney Disease Admitted with Non-ST Elevation Myocardial Infarction

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## Abstract

**Background:** Despite the advances in care of non-ST elevation myocardial infarction (NSTEMI), readmissions remain a significant problem. It is well established that chronic kidney disease (CKD) influences the progression of atherosclerosis and development of coronary artery disease. While numerous demographic, social, clinical and hospital factors are known to impact readmissions, the impact of CKD is not well studied. In this study, we assessed the impact of CKD on 90-day readmission rates in patients with NSTEMI.

**Methods:** From the Nationwide Readmission Database (NRD), we identified hospitalizations between 2010 and 2016 with a primary discharge diagnosis of NSTEMI; we stratified each hospitalization by the presence of CKD. Multivariable logistic regression models were estimated to identify predictors of 90-day readmissions and whether the association between revascularization and readmission was moderated by presence of CKD.

**Results:** We identified a total of 1,955,656 hospitalizations for NSTEMI, of which 262,306 (13.4%) included CKD. A total of 498,126 (25.5%) were readmitted within 90 days of index hospitalization. Hospitalizations that included a CKD diagnosis had a significantly higher readmission rate compared to those without (26.1% vs. 22.0%,  $p < .001$ ). The 90-day cardiac-specific readmission rate (heart failure, STEMI, or NSTEMI) was significantly higher in the presence of CKD compared to those without (7.9% vs. 5.3%,  $p < 0.001$ ). Revascularization was associated with lower readmission rates, although its benefit

was smaller in hospitalizations that included CKD (5.3% lower vs. 6.0% lower in the presence or absence of CKD, respectively).

**Conclusion:** In patients admitted with NSTEMI, presence of CKD is associated with higher risk adjusted all-cause and cardiac-specific 90-day readmission rates. Further research is needed to identify mechanisms and interventions that may help reduce burden of readmissions in these patients.

**Keywords:**

Non-ST elevation myocardial infarction; chronic kidney disease; revascularization; readmission