

Evaluation of Pharmacy Post Percutaneous Coronary Intervention Education at an Urban Safety-Net Hospital

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Purpose:

Roughly 6.7% (18,200,000) of the U.S. population between 2013 and 2016 can be classified as having coronary heart disease (CHD).¹ The American Heart Association states that in 2014 there were roughly 480,000 percutaneous coronary intervention (PCI) performed, with 434,000 leading to stent placement within a cardiovascular artery.¹ Stent placement is more common in males than females; 294,000 vs. 140,000 respectively.¹ The majority of stents are placed in patients between the age of 45 and 64 years old.¹ This study evaluated patient demographics, medication management, and effect of education after receiving a PCI at an urban safety net hospital.

Methods:

This retrospective cohort study evaluating PCI discharge medication, education, and follow up phone call was approved by the institutional review board. The primary endpoint of the study was to look at specific patient demographics including; gender, age, reason for PCI, medication management, and education following a PCI. The study population consisted of any patient who received a PCI and was discharged between January 1st 2018 and December 31st 2018.

Results:

During the defined study time, 155 unique patients with a total of 172 admissions were identified. Males made up the majority of patients at 111 (71.6%) and the average age was 56.8 ± 10.6 years old. Reasons for PCI were elective (51.2%), non-ST segment elevation (NSTEMI) (27.3%), and ST-segment elevation (STEMI) (21.5%). Guideline mediated therapy was evaluated at discharge. Dual anti-platelet therapy (DAPT) was evident by aspirin 81mg (95.3%) and a P2Y12 inhibitor (95.9%). Specific P2Y12 inhibitors included; 33.3% on ticagrelor, 66.1% on clopidogrel, and 0.6% on non-specified medication. Beta blockers were evident in 89.5% patients with a metoprolol equivalent dose of 58 ± 49.2 mg. Statin therapy was seen in 94.2%, with 89% of patients on a high intensity statin.

Inpatient medication education following PCI was completed in 108 (62.8%) patients, and 116 (67.4%) follow-up phone calls were completed. Comparing education completed with rates of readmission in 30 days; 15.7% readmission with education and 18.8% readmission without education ($p=0.610$). More patients visited the emergency room (ER) who received education versus not receiving education; 12.0% vs. 10.9% ($p=0.828$). Follow up phone calls were meant to make sure the patient received their medications and were taking them accordingly. The amount of readmissions in comparison to receiving a follow-up phone call were similar; 17.2% were readmitted with a follow-up phone call vs. 16.1% were

readmitted without a follow-up call ($p=0.848$). ER visits were seen more in patients who received a follow-up call at 12% compared to those who did not at 10.7% ($p=0.795$).

Conclusion:

In comparing the national statistics of PCI's with our urban safety-net hospital, the results are similar. Males made up the majority of patients at 71.6%, and the median age of 56.8 ± 10.6 years falls between the national averages as well. Guideline directed therapy was initiated in nearly all patients. However, no documentation is provided for those it was not. The effectiveness of post PCI education cannot be determined from this set of data alone. The amount of educations completed, compared to readmission or ER visits showed no statistical significance. Further evaluation of a larger patient population may be beneficial.

References:

1. Benjamin, E., Muntner, P., Alonso, A., et.al. Faculty of 1000 evaluation for Executive summary: heart disease and stroke statistics--2019 update: a report from the American Heart Association. *Circulation*, 2019: 139(10), 1-473.