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Effect of Primary Percutaneous
Coronary Intervention on In-hospital
Outcomes among Active Cancer
Patients Presenting with ST-elevation
Myocardial Infarction: A Propensity
Score Matching Analysis

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Abstract

Aims:

Primary percutaneous coronary intervention (pPCI) is the gold standard, guideline-recommended revascularization strategy in patients presenting with ST-elevation myocardial infarction (STEMI). However, there are limited data on its use and effectiveness among patients with active cancer presenting with STEMI.

Methods and results:

All STEMI hospitalizations between 2004 and 2015 from the National Inpatient Sample were retrospectively analyzed, stratified by cancer type. Propensity score matching was performed to estimate the average treatment effect of pPCI in each cancer on in-hospital adverse events, including major adverse cardiovascular and cerebrovascular events (MACCE) and its individual components, and compare treatment effect between cancer and non-cancer patients. Out of 1 870 815 patients with STEMI, 38 932 (2.1%) had a current cancer diagnosis [hematological: 11 251 (28.9% of all cancers); breast:

4675 (12.0%); lung: 9538 (24.5%); colon: 3749 (9.6%); prostate: 9719 (25.0%)]. Patients with cancer received pPCI less commonly than those without cancer (from 54.2% for lung cancer to 70.6% for hematological vs. 82.3% in no cancer). Performance of pPCI was strongly associated with lower adjusted probabilities of MACCE and all-cause mortality in the cancer groups compared with the no cancer group. There was no significant difference in estimated average pPCI treatment effect between the cancer groups and non-cancer group.

Conclusion:

Primary percutaneous coronary intervention is underutilized in STEMI patients with current cancer despite its significantly lower associated rates of in-hospital all-cause mortality and MACCE that is comparable to patients without cancer. Further work is required to assess the long-term benefit and safety of pPCI in this high-risk group.

Keywords:

Cancer; Management; Outcomes; Percutaneous coronary intervention; STEMI.

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