COST AND CLINICAL CONSEQUENCES OF STRESS/SINGLE-PHOTON EMISSION COMPUTED TOMOGRAPHY TESTING WITH SPECIFIC MEDICATIONS

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Background: Pharmacological stress (ST) and single-photon emission computed tomography (SPECT) techniques have been shown invaluable to diagnose and monitor patients with suspected or known coronary artery disease and are most commonly performed with coronary vasodilators, such as adenosine and dipyridamole. We identified the cost of care and clinical events associated with dipyridamole vs adenosine use in ST/SPECT myocardial perfusion testing using real-world data.

Methods: Utilizing de-identified patient longitudinal data, the study included commercial health plan members who received adenosine or dipyridamole as an adjunct to ST/SPECT testing during the identification period of 01 January 2006 through 30 November 2008. Propensity Score Matching techniques were used to compare associated risk-adjusted test-related complications, symptoms and costs. Risk adjustment was done by controlling for age, gender, region, baseline clinical factors and costs.

Results: 12,351 patients used dipyridamole and 53,969 adenosine. Patients in the dipyridamole group were more likely to be female, older and reside in the northeast and west of the United States, had higher comorbidity scores and more frequent cardiovascular/coronary artery disease at baseline. Most of the risk-adjusted test-related complications and symptoms were similar. Patients who received dipyridamole had a significantly higher number of emergency room (ER) visits (0.65% vs. 0.23%) and angina pectoris (7.22% vs. 6.10%) while the likelihood of shortness of breath was significantly higher (6.60% vs. 7.30%) in adenosine group. One-day risk-adjusted total costs, office visits costs, outpatient hospital costs and other utilization costs for same day of ST/SPECT testing were higher for the adenosine group. However, risk-adjusted ER visit costs were higher for the dipyridamole group ($1,276 vs. $1,095, p<0.001).

Conclusion: Using retrospective analysis of health insurance claims data and controlling for confounders, we showed that the likelihood of symptoms, complications and cost with the use of dipyridamole and adenosine is significant.