Chest Pain Observation: Does Post-Discharge Stress Testing Influence Physician Management Decisions?

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Chest Pain Observation Unit: Does Post-Discharge Stress Testing Influence Physician Management Decisions?

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BACKGROUND:

Chest pain (CP) accounts for approximately 6 million emergency visits per year in the United States. There is growing interest in strategies to effectively risk stratify patients for coronary artery disease (CAD) related events in a cost-effective manner. The use of chest pain observation units followed by early stress testing is frequently employed in these pts. However the utility of stress testing in this population is not well defined, and the effect of stress test results on subsequent management decisions is a topic of controversy. In the present study we examined the relationship of stress myocardial perfusion imaging (MPI) results to physician decisions regarding cardiac catheterization in a single community teaching hospital.

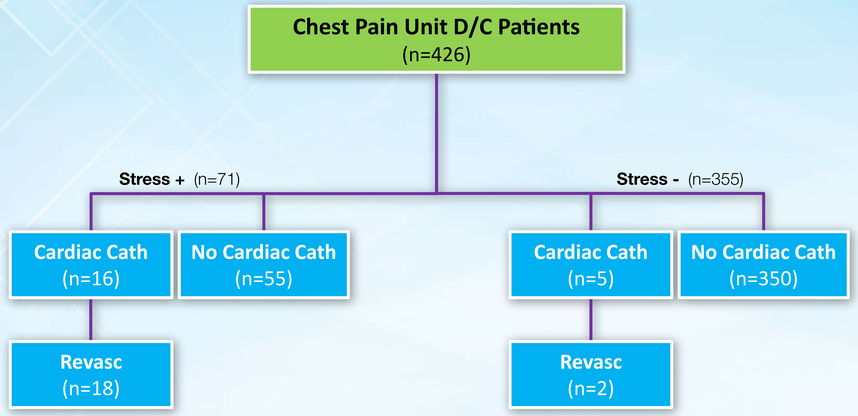
METHODS:

Retrospective study of 426 patients undergoing a chest pain observation strategy over a 24 month period. Patients eligible for the program had CP deemed possibly related to CAD but no diagnostic ECG changes and negative TnI measurements x2. All patients underwent outpatient stress MPI within 72 hours of discharge. Patients saw a cardiologist the day of stress MPI who reviewed the CP history, MPI results, and made decisions regarding further risk stratification. Demographic and medical history was collected from the patients chest pain observation unit record. Multivariate regression analysis was used to determine significant independent variables related to physician decisions regarding further risk stratification. **Table 1.**

RESULTS:

Of 426 patients who underwent outpatient stress MPI, 71(16.7%) were positive for ischemia, and 16 (22.5% of +MPI) underwent catheterization with reperfusion performed in 8 (5PCI, 3 CABG, 11.3% of +MPI). Of the 355 patients with negative stress MPI, 5(1.4% of -MPI) underwent catheterization with reperfusion performed in 2 (2PCI, 0 CABG, 0.5% of -MPI).

A MLR model suggested only stress MPI results were independently predictive of the use of cardiac catheterization for risk stratification.



Disclosure:
Authors have no disclosures.

CONCLUSION:

Stress MPI was an important factor in physician decision-making regarding the need for cardiac catheterization in patients managed in a chest pain observation unit. The low rate of cardiac catheterization among stress MPI+ patients indicates physicians are using other variables to make decisions downstream of MPI, in particular the presence of hypertension and prior CAD diagnosis. **Table 2.** The rate of +MPI and subsequent use of cardiac catheterization in our institution supports MPI as an appropriate step in risk stratification of low to moderate risk CP patients triaged through a CP observation unit. Other variables were also used by the physician to further stratify patients with a (+) MIP for cardiac catheterization.

TABLE 1. Independent Predictors of Use Cardiac Catheterization in Patients Managed in Chest Pain Unit.

	Odds Ratio	95% CI	p
MPI+	26.19	9.55-71.86	<0.001
Age (per year)	0.99	0.95-1.03	0.570
Sex (F)	0.91	0.36-2.31	0.836
Smoker	3.09	0.76-12.58	0.116
Prior CAD History	1.20	0.43-3.41	0.727
Hypertension	2.95	0.94-9.30	0.065
Diabetes	0.67	0.21-2.17	0.804

TABLE 2. Down Stream Drivers of Cardiac Catheterization Among Patients With (+) MIP

	Cath Performed	Cath Not Performed	p
Male sex (%)	68.8	58.2	0.636
Pharmacologic stress test (%)	43.8	36.4	0.807
Diabetes mellitus (%)	25.0	20.0	0.934
Family history of CAD (%)	6.3	5.5	0.621
Prior CAD diagnosis (%)	75.0	41.8	0.040
Hypertension (%)	93.8	45.0	0.001