

Prognostic Implications of Mildly Abnormal SPECT MPI Results in Patients with Acute Chest Pain

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Background: Patients presenting to the emergency department (ED) with chest pain are increasingly managed in chest pain units (CPUs) using accelerated diagnostic protocols for risk stratification; SPECT myocardial perfusion imaging (MPI) is pivotal in such schemes. Although studies have shown that in patients with stable angina the finding of mild ischemia by MPI may warrant conservative therapy, data are scant regarding the prognostic implications of mildly abnormal scans in those presenting with acute chest pain.

Methods: We reviewed 2,865 consecutive patients who presented to the ED with chest pain and were admitted to the CPU. After an observation period, 1,314 patients were further evaluated by MPI. Of this group, we identified 99 patients who had coronary angiography within one week of MPI. Scans were scored using the extent and severity of stress-induced perfusion defects, and then classified into three groups: mildly abnormal, moderately abnormal, and severely abnormal. Moreover, the type of stress modality (exercise or pharmacologic) was noted.

Results: Of the 99 patients, 33 had mildly abnormal scans, 43 had moderately abnormal scans, and 23 had severely abnormal scans. In the mildly abnormal group 10 patients (30.3%) had coronary revascularization; in the moderately abnormal group 22 patients (51.2%) were revascularized; and in the severely abnormal group 18 patients (78.3%) were revascularized ($p=0.04$ for 51.2% vs 30.3%; $p=0.01$ for 78.3% vs 51.2%). Within the mildly abnormal group, the revascularization rate was higher in patients having pharmacologic testing (50%) than in those having exercise testing (16%) ($p=0.02$).

Conclusions: In contrast to patients with stable angina, mildly abnormal MPI results in patients presenting with acute chest pain may have significant prognostic implications. In the CPU population, mildly abnormal scans (especially in the setting of pharmacologic stress) should perhaps lead to more aggressive management.