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Original Article

Usefulness of Dipyridamole Myocardial Perfusion SPECT in Patients with Left Bundle Branch Block

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Abstract:

**Background:** Diagnosis of coronary artery disease (CAD) in patients with left bundle branch block (LBBB) is considered as a challenge in cardiology due to the low accuracy of noninvasive methods such as basal and stress electrocardiography (ECG). This diagnostic challenge can be reduced but not eliminated using dipyridamole as a stress method instead of exercise. The aim of this study was to assess the diagnostic value of dipyridamole stress Tc-99m Sestamibi single photon emission computed tomography (SPECT) myocardial perfusion imaging in patients with complete LBBB.

**Methods:** We studied 40 patients with permanent and complete LBBB using Tc-99m Sestamibi SPECT and dipyridamole stress to evaluate CAD. Perfusion defect was considered fixed when there was no difference between rest and stress score, while reversible defect was defined as a segment with higher score on stress images. All patients underwent coronary angiography.

**Results:** Eleven patients (27.5%) had normal myocardial perfusion SPECT and 29 patients (72.5%) had reversible perfusion defects. Angiography was positive in 30 patients, while 10 cases showed normal angiography. The sensitivity, specificity, positive predict value and negative predict value of our study for detecting >50% coronary stenosis was 86.6%, 70%, 89% and 64% respectively.

**Conclusion:** We found 33 (82.5%) patients with concordant angiography and myocardial perfusion SPECT results ( $p=0.002$ ). Angiography was positive in 90% of patients with reversible perfusion defects on myocardial perfusion SPECT. In summary, Tc-99m Sestamibi SPECT in patients with LBBB showed high accuracy (82.5%) in detecting >50% coronary stenosis.

Keywords:

Myocardial perfusion imaging , SPECT , Dipyridamole , Left bundle branch block , Technetium-99m Sestamibi

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