

Myocardial gated SPECT imaging in asymptomatic diabetic patients: clinical decision and optimal therapeutic approach

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Background: Diabetic patients have high prevalence of asymptomatic coronary artery disease (CAD) and silent myocardial infarctions. The dilemma of the best diagnostic approach to asymptomatic diabetic patients in relation to the optimal management is still ongoing. We wanted to evaluate the prevalence of myocardial ischemia in asymptomatic diabetic patients in relation to stress induced ECG changes and its influence on therapeutic decision.

Methods: We evaluated 60 asymptomatic diabetic patients (pts) who underwent SPECT myocardial perfusion imaging (MPI) for detection of suspected CAD. ECG changes during pharmacological stress were compared with MPI results. We use 17 segment model for MPI quantitative analysis. Myocardial perfusion scores and functional parameters were evaluated. We assess the influence of MPI results on final patient management. Logistic regression analysis was used to assess the impact of diabetes on myocardial ischemia prevalence.

Results: Stress inducible ischemia was found in 19 pts (33%), fixed defects in 13% and mixed defects in 9% of cases. The average percent of ischemia was 10%. Mildly abnormal scans were found in 7 patients (36%) — summed stress score (SSS) <8, moderate abnormality in 4 patients (22%) — SSS <13 and severely abnormal scans in 8 patients (42%) — SSS >13. Severe ischemia was only related to the duration of diabetes. Six pts with severe ischemia

(75%), had ST segment depression >2mm on pharmaceutical stress, and higher wall motion index ($p<0.01$). Pts with severe ischemia had fall of LVEF during stress >5% comparing to rest LVEF. Transit ischemic dilatation (TID) was observed in 5 pts with severe ischemia. Stepwise logistic regression analysis of stress induced ischemia showed OR 3.9 (95% CI 2.3-6.6) for stress induced ECG changes and OR 2.4 for presence of DM over 10y (95% CI 1.7-3.6). All pts with ischemia >10%, were referred for coronary angiography.

Conclusions: SPECT MPI is valuable method for preclinical assessment of diabetic patients. Diagnostic and prognostic value of MPI can improve cardiac risk stratification and guide management decision in asymptomatic diabetic patients.

KEYWORDS: myocardial SPECT imaging, diabetes mellitus, silent ischemia.

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