P019. Left ventricular function assessed by gated SPECT after vasodilator stress in correlation with myocardial perfusion

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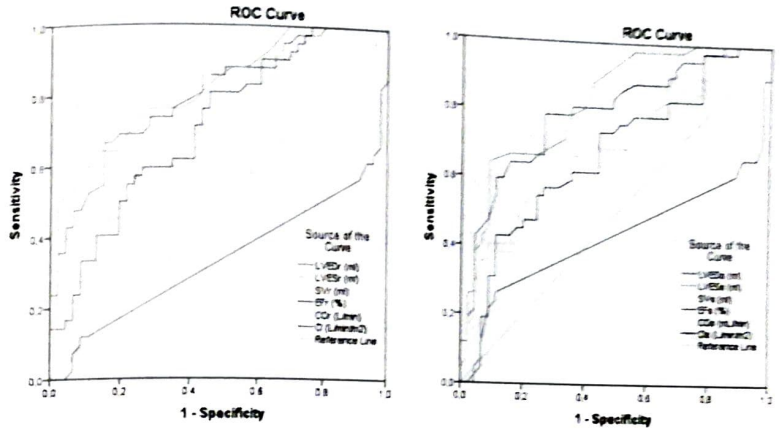
Objective. To evaluate the relationship between the presence of myocardial perfusion abnormality during an adenosine or dipyridamole stress test and the changes in left ventricular (LV) function obtained at rest and after stress with gated SPECT. **Material and Methods.** Retrospective observational study, with the study population of 92 patients, equally divided in adenosine and dipyridamole vasodilator stress. The gated SPECT acquisition was performed both at rest and after vasodilator stress, by utilizing rest-stress Tc99m sestamibi ECG gated SPECT. Global left ventricular ejection fraction (LVEF), end-diastolic, end-systolic and stroke volumes (EDV, ESV, SV), cardiac output and cardiac index at rest and after stress were analyzed, as a function of presence and type of perfusion defect. **Results.** In our study population, 44 (47,8%) patients had abnormal myocardial perfusion, 38 (41,3%) having ischemia (extent 12,6±7,4%), 2 (2,5%) scar (extent 10,3±4,5%), and 4 (4,3%) having fixed defect (extent 10,7±6,7%) consistent with LBBB. Patients with perfusion defects had statistically significantly higher end-diastolic, end-systolic and stroke volumes, both in rest and after stress, however significantly lower ejection fraction was observed as compared to normal. They also had OR 2,5 for RV enlargement (CI 0,9-6,4), p=0,048. However, they had preserved even significantly higher cardiac output and cardiac index as compared with patients without perfusion defect. The post-stress LVEF and ESV were significantly different from those measured at rest. ROC curves demonstrated excellent performance of classification of LV functional parameters during rest and over stress conditions, except for LVEF after stress (Graph 1).

Graph 1. ROC curves of LV functional variables at rest and over stress in discrimination of abnormal myocardial perfusion



Variables	area	sig	95% CI lower	95% CI upper
LVEDr (ml)	,805	,000	,715	,895
LVESr (ml)	,822	,000	,735	,908
SVr (ml)	,712	,001	,605	,819
EFr (%)	,341	,010	,223	,459
COr (L/min)	,731	,000	,626	,836
CIr (L/min/m2)	,720	,000	,615	,825
LVEDs (ml)	,796	,000	,702	,890
LVESs (ml)	,825	,000	,739	,911
SVs (ml)	,691	,002	,579	,803
EFs (%)	,432	,273	,304	,559
COs (L/min)	,680	,004	,566	,794
CIs (L/min/m2)	,674	,005	,560	,788

Conclusion. Presence and extent of myocardial perfusion abnormality is reflecting in left ventricular functional parameters, except for the post-stress LVEF, that may not reflect true resting measurements.