

Abstract

Introduction: Coronary arteriography is the usual method for evaluating the anatomy of the coronary arteries. However, it is well known that the functional consequences of arterial lumen narrowing cannot be assessed accurately with coronary arteriography.

Coronary flow reserve, the difference between maximal and baseline flow, can contribute to the estimation of the functional consequences of the anatomic stenosis of the coronary artery.

Aim of the work: to determine the best value of Doppler-echocardiography-derived coronary flow reserve (CFR) for detecting $\geq 75\%$ LAD stenosis and assessing the relation of CFR to different cardiovascular risk factors.

Methods: 30 patients with Proximal LAD stenosis $\geq 50\%$, CFR was determined by dipyridamole stress trans-esophageal echo.

Results: The mean CFR was 1.797 ± 0.355 , 18 Patients (60 %) had limited CFR and 12 patients (40 %) had non-limited CFR, 20 [66.7%] patients had LAD stenosis $\geq 75\%$ while 10 [33.3%] patients had LAD stenosis $<75\%$. By ROC curve analysis, A cut-off point of CFR at 1.93 was sensitive by 70% and specific by 75% for prediction of $\geq 75\%$ LAD stenosis P 0.006 and Area under curve 0.81.

There was a significant negative correlation between CFR and LAD stenosis, CFR was statistically significant lower in patients with hypertension, DM, hypercholesterolemia & smokers [P_ 0.001, 0.044, 0.001, 0.046 respectively] while CFR was statistically significant higher in patients maintained on beta blockers, statins and clopidogrel [P_ 0.0005, 0.025, 0.0005 respectively]

Conclusion: Doppler echo can be used to assess coronary flow reserve in patients with intermediate LAD lesions & aid in the decision for angioplasty, however CFR value appeared to be affected with different cardiovascular risk factors.

Key Words:

Coronary flow reserve, Doppler echocardiography.