

Value of Mitral Annular Plane Systolic Excursion in Assessment of Global Contractile Reserve During Dobutamine Stress Echocardiography Before Revascularization

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BACKGROUND:

Dobutamine stress echocardiography (DSE) has become the preferred method of stressing the heart in Europe with similar diagnostic accuracy to exercise. Mitral annular plane systolic excursion (MAPSE) is an easy way to assess global LV function and contractile reserve irrespective of image quality.

PATIENTS AND METHODS:

The current study was carried out on 50 adult patients with coronary artery disease (CAD) presented to Alexandria university echocardiography labs for assessment of viability and contractile reserve before coronary revascularization by coronary artery bypass graft (CABG) or percutaneous transluminal coronary angioplasty (PTCA) and 20 control subjects with normal wall motion and normal MAPSE. The inclusion criteria included patients with LV ejection fraction (EF) \geq 35%. The patients underwent a full echocardiographic examination at rest and during peak stress with low dose dobutamine. The controls underwent a full echocardiographic examination at rest only.

RESULTS:

At baseline, a cut off value of 1.39 cm for MAPSE gave 92% sensitivity and 100% specificity in diagnosing myocardial contractile reserve. At peak low dose dobutamine, a cut off value of 1.71 cm for MAPSE gave 100% sensitivity and 95% specificity in diagnosing myocardial contractile reserve. The contractile reserve was assessed in our study by EF and wall motion score index (WMSI).

CONCLUSIONS:

Echocardiography can detect viable myocardium during infusion of dobutamine which has ability to elicit an enhanced contractile response. MAPSE measured at rest and at peak low dose dobutamine stress is a potentially useful tool to identify patients with contractile reserve.