

## POTENTIAL USEFULNESS OF DOBUTAMINE STRESS TESTING

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This study examined the feasibility of performing simultaneously two-dimensional echocardiography (2.DE) and MIBI-SPECT (MS) by using a dobutamine (DOB) infusion stress to detect and locate coronary artery disease (CAD).

Fifty-four (54) consecutive patients with documented coronary angiography (CA). 21 of them with a history of recent or previous myocardial infarction (MI) and 14 "controls" were included in the study. Six (6) angiograms were considered either normal or with non significant stenosis. DOB was administered at increasing doses from 5 or 10 to 40 µg/kg/min for 3 min/step. MIBI was injected at the end of 2DE test.

DOB infusion increased the heart rate from 67 to 113 ( $p < 0.001$ ). The systolic blood pressure from 12.2 to 15.1 ( $p < 0.001$ ) and the rate pressure double product from 8338 to 16042 ( $p < 0.001$ ). Most patients had transient minor side effects and a few of them (20%) had significant side effects with DOB consisting of chest pain in 12%, hypotension in 2%, ventricular arrhythmias in 2% and tremulousness and/or headache or dyspnea in 5%. Ischemic ECG changes (significant ST segment depression) were observed in 19%.

In patients with CAD and without MI ( $n = 27$ ) by reference to controls ( $n = 14$ ) and cases with normal CA ( $n = 6$ ), the overall sensitivity of each test was 85% for MS and 78% for 2.DE, and specificity was 80% and 90%, respectively.

In patients with MI, a positive response was observed outside the infarct zone by 2.DE in 1/18 patients without multivessel CAD (specificity: 94%) and a residual ischemia was falsely evidenced by MS in 2/18 patients (specificity: 88%). The area of necrosis was identically well located by both techniques in all cases. The identification of multivessel CAD was observed in 2/3 patients by MS and 1/3 patients by 2.DE.

In conclusion, the dobutamine stress testing at increasing doses is a feasible and well tolerated stress in any condition.

It has some potential advantages over currently used non-invasive stress testing methods, particularly in patients with myocardial infarction.