

**COMPARATIVE ASSESSMENT OF STRESS ECHOCARDIOGRAPHY
DURING EXERCISE ON A SEMI-RECUMBENT BICYCLE ERGOMETER
AND TREADMILL IN PATIENTS WITH CHRONIC CORONARY SYNDROME**

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Stress echocardiography is an important method for detecting inducible myocardial ischemia in patients with chronic coronary syndrome (CCS). The exercise modality can affect image quality and the assessment of ischemia. A semi-recumbent bicycle ergometer allows echocardiographic imaging during exercise, whereas treadmill assessment is usually performed immediately after exercise.

To compare stress echocardiography using a semi-recumbent bicycle ergometer and treadmill, focusing on image quality, detection of ischemia, and its impact on treatment decisions in patients with CCS.

The prospective study included 40 patients with CCS (mean age 58.6 ± 7.4 years; 65% men). Patients were divided into two groups of 20 according to the exercise modality. Achievement of submaximal heart rate, image quality, inducible regional wall motion abnormalities, and the number of ischemic segments based on the 17-segment left ventricular model were assessed. The influence of stress echocardiographic findings on treatment strategy was also evaluated.

Submaximal heart rate was achieved in 85% of patients in the bicycle group and 90% in the treadmill group. Adequate echocardiographic images were obtained in 95% and 75% of patients, respectively ($p < 0.05$). Ischemia was detected in 45% of patients in the bicycle group and 35% in the treadmill group, with no significant difference in frequency. However, the mean number of ischemic segments was higher with bicycle ergometry (3.4 ± 1.2 vs. 2.6 ± 1.1 ; $p < 0.05$). Revascularization was recommended in 35% and 25% of patients, respectively.

Semi-recumbent bicycle ergometry provides better echocardiographic image quality and may allow more ischemic segments to be identified compared with treadmill testing. Although treadmill exercise is more physiological, echocardiographic imaging at peak exercise is more difficult. The choice of stress modality should therefore consider the clinical objective, functional capacity, and acoustic window. Larger crossover studies are needed to confirm these findings.