Editorial Comments to the Paper by Raineri et al

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To those who appreciate the health benefits of a cardiac rehabilitation program, any 'positive' study or patient response is considered confirmatory. However, study design and the problems of non-randomized trials or a series of case reports must be appreciated [1]. The following should be considered after reading the study reported in this issue by Raineri et al. First of all, it is not a randomized trial – no matter why the controls could not participate (i.e., distance from the hospital), this weakens any conclusions that can be made [2]. Also in this regard, data are only presented on half of the patients who underwent rehabilitation.

There are also problems with making conclusions from the measurements made on the patients. First, we have shown that exercise-induced R wave changes are not related to left ventricular function [3]. The changes reported could be due to the percent of maxi-

1 'Short- and Long-Term Results of Early Rehabilitation after Myocardial Infarction. Physical, Fitness, Hemodynamic Assessments and Psychological Aspects' (this issue).

2 Supported by Ischemic Heart Disease Specialized Center of Research (SCOR) Grant No. HL 17682 awarded by the National Heart, Lung, and Blood Institute to Dr. John Ross.

mal effort performed during exercise testing [4]. Secondly, M mode echocardiographic assessment is particularly difficult in postmyo-cardial patients when areas of scar or compensatory hypertrophy are present. Also, one could question measuring changes in the amount of E point septal separation. Our group performed echocardiograms in 14 coronary patients before and after 6 months of exercise and could find no significant changes [5]. In regard to the use of the nuclear stethoscope – it is difficult to utilize it particularly during exercise, since movement of the heart effects the measurements more than if a scintillation camera is used. Using a scintillation camera technique, we found no change in resting or maximal ejection fraction, but did find an improvement in submaximal ejection fraction after training [6].

However, in spite of the limitations this is an important study. It represents the first reported evaluation of patients in cardiac rehabilitation using both of the modern non-invasive imaging technique (i.e., echocardiography and nuclear) in the same group of patients. Also, it distinguishes an important group of patients who are usually forgotten but need to be better characterized – those who fail to get a training effect. These pa-

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tients probably should be recognized prior to 4 initiation of a cardiac rehabilitation program, so that they can be excluded and directed to more effective means of therapy [7]. The 5 demonstration of the decreased anxiety levels in the patients in the cardiac rehabilitation program is an important confirmatory finding as well. The authors should be congratulated for their efforts – and hopefully they will be encouraged to continue this work.

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