

**Differentiation of transiently ischemic from infarcted myocardium
by Thallium-201 exercises scintigram after active
ergometer rehabilitation**

Tomoyuki YAMBE, Shin-ichi NITTA, Motonao TANAKA, Tai-ichiroh MEGURO,*
Yoshifumi SAIJOH,* Shigeru NAGANUMA,* Shin-ichi KOBAYASHI,* Norio ENDOH,**
Yoshio TERASAWA,** Yoshiaki KATAHIRA,*** Taroh SONOBE,*** Keiko NITTA,***
Hisanao TAKEDA,**** Kazuhiko TAKAHASHI,***** Yoshihisa SHIMANUKI,***** and Hisao ITOH*****

*Department of Medical Engineering and Cardiology, Research Institute for Chest Diseases and
Cancer, Tohoku University, *Department of Cardiology, Sendai Kousei Hospital,
Department of Cardiology, Sendai Shakaihoken Hospital, *Department of
Cardiology, Tohoku Kousei-nenkin Hospital, ****Department of Cardiology,
Miyagi Prefectural Semine Hospital, *****Department of Radiology,
Tohoku University School of Medicine*

It has been frequently reported that while myocardial viability is neglected in conventional methods of diagnosis such as left ventriculography, ECG, and exercise thallium-201 myocardial scintigraphy (Ex-Tl), revascularization often results in improving left ventricular wall motility. In the present study, the authors contrived a method to accurately evaluate the viability of the myocardium by means of exercise rehabilitation, and tested the method in clinical cases. Among patients with myocardial infarction, we selected a patient with negative viability in the diseased area as determined by chronic ECG, left ventriculography (LVG), coronary angiography and Ex-Tl. This patient went through two weeks of active exercise rehabilitation gauged with an ergometer, and was then re-examined by Ex-Tl. After the evaluation, revascularization was performed for the patient who demonstrated viability of the infarcted myocardium in EX-Tl after rehabilitation, and significant improvement in contractility was shown in the chronic LVG. These findings indicate that our method of detecting potential viability of the infarcted myocardium is of clinical significance.

Key words: Exercise Tl-201 myocardial scintigraphy, Viability, Rehabilitation, Revascularization, SPECT