

## **Preoperative evaluation of myocardial viability by thallium-201 imaging in patients with old myocardial infarction who underwent coronary revascularization**

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The myocardial uptake and redistribution in thallium scintigraphy and the regional wall motion by echocardiography were evaluated by a semi-quantitative method in 42 patients who previously had myocardial infarction (50 target vessels) and underwent coronary revascularization. The aim of this study was to elucidate the significance of the initial image, delayed image and redistribution on thallium-201 scintigraphy for clinical diagnosis of the myocardial viability. As a semi-quantitative analysis, we used a bull's-eye display for thallium image and centerline method for echocardiographic wall motion, and compared the results before and after revascularization. As a result, the thallium grade improved postoperatively in all 17 areas which preoperative had showed redistribution, and also in 11 of the 32 areas without preoperative redistribution. The sensitivity, specificity and accuracy of preoperative thallium redistribution for predicting myocardial viability were 61%, 100% and 78%, respectively, when the postoperative improvement in the thallium grade was used as the standard. The postoperative probability of improvement in the thallium grade increased in proportion to the preoperative thallium grade (delayed image) ( $p < 0.01$ ). There was no correlation between the preoperative thallium delayed image and postoperative improvement in wall motion. Postoperative improvement in thallium image and wall motion could not be predicted from the preoperative wall motion. Thus, postoperative improvement in thallium images can be anticipated if redistribution is present on the preoperative thallium image, and the preoperative thallium delayed image is useful for predicting myocardial viability. Improvement in wall motion could not be predicted preoperatively by these methods.

**Key words:** thallium-201 exercise myocardial scintigraphy, bull's-eye display, coronary revascularization, myocardial viability