

The causes and clinical significance of exercise-induced silent myocardial ischemia evaluated by ischemic range and intensity with exercise Tl-201 myocardial SPECT

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We investigated the causes and long-term prognosis of exercise-induced silent myocardial ischemia (SMI) by means of exercise Tl-201 myocardial SPECT (Ex-SPECT) in 97 patients with effort angina or old myocardial infarction (OMI). These patients were proven to have significant stenosis by coronary angiography. The subjects were divided into three groups based on the presence or absence of Tl-201 redistribution or angina during exercise testing. Group one consisted of 34 patients who had redistribution on Ex-SPECT and angina during exercise testing; the painful myocardial ischemia (PMI) group. The second group consisted of 38 patients who had redistribution on Ex-SPECT, but no angina during exercise testing: the SMI group. The third group consisted of 25 patients who had no redistribution: the RD (—) group.

The ischemic range and intensity were quantified by the defect volume ratio (DVR) and defect severity index (DSI), respectively. Comparison of the DVR and DSI values for the PMI and SMI groups revealed that the DVR and DSI values for the SMI group were lower than those of the PMI group. Also the prognosis of the SMI group tended to be worse than that of the RD (—) group. Thus, we concluded that the SMI and PMI group should receive identical treatment.

Key words: exercise thallium-201 (Tl-201) myocardial SPECT, silent myocardial ischemia, prognosis