ORIGINAL ARTICLE

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Limitations of spontaneous reperfusion and conventional medical therapy to afford myocardial protection through antecedent angina pectoris in acute myocardial infarction

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Despite the cardioprotective effect of rapid coronary reperfusion, the effects of spontaneous recanalization on myocardial viability and metabolism are unknown. We studied whether preinfarction angina affords cardioprotection when spontaneous coronary reperfusion occurred in acute infarct patients. Myocardial tomographies with thallium and I-123-labeled-β-methyl-p-iodophenyl penta-decanoic acid (BMIPP) were performed in 27 acute myocardial infarct patients treated medically: 15 patients had preexisting angina before infarction (group A) and 12 did not (group B). Thallium and BMIPP abnormalities and regional function were quantified by a polar map and contrast ventriculography, respectively. There was no significant difference between thallium and BMIPP in the severity index in groups A and B (89 ± 97 vs. 85 ± 68, 97 ± 28 vs. 95 ± 27, respectively), and no significant difference between the groups in the thallium or BMIPP severity index. The ratio of the thallium severity index to that of BMIPP and the regional wall-motion abnormality index were identical in groups A and B. Both patient groups were divided into 2 subgroups based on the presence or absence of spontaneous coronary reperfusion: subgroups A1 and A2, and subgroups B1 and B2, respectively. There were no significant differences among the 4 subgroups in severity indexes for both tracers, the thallium/BMIPP ratio, or the asynergy score. The BMIPP severity index correlated significantly with that of thallium in all subgroups, but no significant difference between the regression lines was found. It is therefore unlikely that spontaneous coronary recanalization affords beneficial effects through preservation of myocardial viability in an ischemia-related zone, suggesting that the cardioprotective effect of preinfarction angina is a limited phenomenon in patients undergoing rapid coronary reperfusion.

Key words: fatty acid metabolism, pre-infarction angina, cardioprotection, spontaneous coronary recanalization