Summary

Myocardial Distribution of Iodine-123-Iodophenyl-9-Methyl-Pentadecanoic Acid (9MPA) in Patients with Acute Myocardial Infarction: Comparison with Regional Wall Motion Obtained from Technetium-99m-Sestamibi Gated SPECT


*Department of Radiology, **First Department of Internal Medicine, Nippon Medical School

123I-iodophenyl-9-methyl-pentadecanoic acid (9MPA) is a modified long-chain (15 carbons) fatty acid with a methyl branch on its 9 carbon location. Myocardial SPECT images (two sets, 10 min each) were obtained starting 10 min (early phase) and 50 min (delay phase) after the injection of 160 MBq 123I-9MPA at rest in 10 patients with acute myocardial infarction. The segmental myocardial uptake (%uptake) and clearance (%washout) from early to delay image were calculated by the SPECT data. ECG-gated myocardial SPECT with 99mTc-sestamibi was also performed and segmental left ventricular (LV) wall motion was evaluated using QGS (quantitative gated SPECT) program.

The %uptake of LV segments with hypokinetic or akinetic wall motion were significantly lower than those with normokinesis (p < 0.01) for both early and delay phases. The %washout of hypokinetic segments were significantly lower than those of normokinetic regions (p < 0.01), while the %washout of akinetic segments were significantly higher than those of severely hypokinetic segments (p < 0.05).

Thus, 123I-9MPA myocardial distribution and clearance thought to be associated with left ventricular regional wall motion.

Key words: 123I-iodophenyl-9-methyl-pentadecanoic acid (9MPA), Myocardial fatty acid metabolism, Myocardial infarction, 99mTc-sestamibi.