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

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^{123}I-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 ^{123}I-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 ^{99m}Tc-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, ^{123}I-9MPA myocardial distribution and clearance thought to be associated with left ventricular regional wall motion.

Key words: ^{123}I-iodophenyl-9-methyl-pentadecanoic acid (9MPA), Myocardial fatty acid metabolism, Myocardial infarction, ^{99m}Tc-sestamibi.