

Ischemic “memory image” in acute myocardial infarction of ^{123}I -BMIPP after reperfusion therapy: A comparison with $^{99\text{m}}\text{Tc}$ -pyrophosphate and ^{201}Tl dual-isotope SPECT

Teruhito MOCHIZUKI,* Kenya MURASE,** Hiroshi HIGASHINO,*** Masao MIYAGAWA,*
Yoshifumi SUGAWARA,* Takanori KIKUCHI* and Junpei IKEZOE*

*Department of Radiology, Ehime University School of Medicine

**Department of Medical Engineering, Division of Allied Health Sciences, Osaka University Medical School

***Department of Radiology, Ehime Imabari Hospital

Ischemic “memory image” is a phenomenon of ^{123}I -15-(*p*-iodophenyl)-3-(*R,S*)-methylpentadecanoic acid (BMIPP) in which an area at risk of acute myocardial infarction (AMI), could be detected as a defect in a couple of weeks even after successful reperfusion therapy.

The purpose of this study was to clarify the incidence of the ischemic “memory image” of ^{123}I -BMIPP in patients with AMI by comparing $^{99\text{m}}\text{Tc}$ -PYP and ^{201}Tl dual-isotope SPECT.

Materials consisted of 14 patients with successfully reperfused AMI and 20 patients with old myocardial infarction (OMI). All AMI patients underwent PYP/Tl dual-isotope SPECT within 1 week after the onset of AMI, and BMIPP SPECT was performed within 1 week after the PYP/Tl dual-isotope SPECT. The extent and severity of the defect of BMIPP and Tl were visually scored into four grades: 0 = no defect to 3 = large or severe defect. These scores were compared.

PYP positive AMI lesions were concordant with BMIPP defects (13/14). In AMI, both the extent and severity scores of BMIPP were higher than ^{201}Tl ($p < 0.001$). Differences (BMIPP – Tl) of extent and severity scores were greater in AMI than in OMI ($p < 0.001$).

In conclusion, the ischemic “memory image” obtained by means of the BMIPP is a common phenomenon (13/14) in AMI, and helpful in evaluating the area at risk.

Key words: fatty acid metabolism, acute myocardial infarction, $^{99\text{m}}\text{Tc}$ -pyrophosphate, ^{201}Tl