

Summary

Influence of Age on Serial Change in TL/BMIPP Dual Isotope SPECT Images after Direct PTCA in Patients with Acute Myocardial Infarction

Hideyuki SAKAI and Masao MOROI

Third Department of Internal Medicine, Toho University Ohashi Hospital

The purpose of this study was to investigate the influence of age on serial change in $^{201}\text{TlCl}$ (TL) and ^{123}I -BMIPP (BMIPP) dual isotope single photon emission computed tomography (SPECT) images after direct PTCA in patients (pts) with acute myocardial infarction (MI). Dual SPECT with TL and BMIPP at rest, radionuclide ventriculography for left ventricular ejection fraction (LVEF), and two-dimensional echocardiography for wall motion analysis were performed in 26 pts at the subacute and chronic phases after direct PTCA for acute MI. A defect score (DS) for SPECT images was interpreted as normal: 0, mildly decreased: 1, moderately or severely decreased: 2, complete defect: 3. The difference in DS between TL and BMIPP was defined as the mismatch score (MS). DS in BMIPP was greater than that in TL at the subacute phase in all pts. Significant improvement in the wall motion score was recognized in pts

who showed TL/BMIPP discrepancy at the subacute phase. Pts were classified by age into two groups; group I: younger than 65 years old ($n = 18$); group II: 65 years and older ($n = 8$). Improvement of MS from the subacute to chronic phase was significant in group I (5.2 ± 1.9 to 3.2 ± 1.9 , $p = 0.0001$), whereas not significant in group II (6.2 ± 2.9 to 6.1 ± 2.9 , NS). There was a significant negative correlation between relative MS (ratio of subacute MS to chronic MS) and age ($r = -0.78$, $p < 0.0001$). No significant correlation was observed between age and improvement in LVEF. These results indicate that disordered myocardial fatty acid metabolism, reflected by TL/BMIPP discrepancy, persist longer in elderly pts than younger pts after acute MI.

Key words: Acute myocardial infarction, Myocardial blood flow, Myocardial fatty acid metabolism, Aging, Radionuclide imaging.