Impaired myocardial fatty acid metabolism detected by $^{123}$I-BMIPP in patients with unstable angina pectoris: Comparison with perfusion imaging by $^{99m}$Tc-sestamibi

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The present study was undertaken to determine the potential diagnostic value of $^{123}$I-BMIPP scintigraphy for the detection of altered myocardial fatty acid metabolism in patients with unstable angina. Both myocardial metabolic imaging with $^{123}$I-BMIPP and perfusion imaging with $^{99m}$Tc-sestamibi were performed at rest in 28 patients with unstable angina in the pain-free state. The regional uptakes of $^{123}$I-BMIPP or $^{99m}$Tc-sestamibi were scored semiquantitatively (0 = normal, 4 = no activity) and compared with the coronary arteriographic findings. Decreased uptakes of $^{123}$I-BMIPP were observed in 18 patients, and 11 patients had abnormal $^{99m}$Tc-sestamibi images. Defect scores of $^{123}$I-BMIPP were larger than those of $^{99m}$Tc-sestamibi (7.8 ± 2.1 vs. 5.2 ± 1.9, p < 0.01). The sensitivity for the detection of patients with unstable angina was higher in $^{123}$I-BMIPP than in $^{99m}$Tc-sestamibi (77% vs. 45%, p < 0.01). The site of the decreased $^{123}$I-BMIPP uptake corresponded to the most stenotic coronary artery lesion in all patients.

Fatty acid metabolic imaging with $^{123}$I-BMIPP was more sensitive for detecting myocardial ischemia than perfusion imaging with $^{99m}$Tc-sestamibi. $^{123}$I-BMIPP may be a clue to define the culprit lesion in unstable angina and be helpful to decide the best treatment and guide coronary angioplasty.

Key words: $^{123}$I-BMIPP, $^{99m}$Tc-sestamibi, unstable angina