Resting $^{123}$I-BMIPP scintigraphy for detection of organic coronary stenosis and therapeutic outcome in patients with chest pain

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Purpose: Resting $^{123}$I-BMIPP scintigraphy can detect coronary artery disease based on persistent abnormality of myocardial fatty acid metabolism after transient ischemia. The present study aimed to determine the value of resting $^{123}$I-BMIPP scintigraphy in diagnosing coronary artery disease and predicting the therapeutic outcome in patients with chest pain symptom.

Method: Five hospitals participated in this study, and scintigraphic and angiographic studies were performed in 104 patients without myocardial infarction. Twenty of them had non-coronary artery disease (chest pain syndrome), 26 had stable effort angina, 35 had unstable angina with organic coronary lesions, and 23 had vasospastic angina without significant organic stenosis.

Results: Overall sensitivity for diagnosing angina pectoris (stable, unstable and vasospastic) was 45%, and overall specificity for excluding non-coronary artery disease was 80%. The incidence of positive $^{123}$I-BMIPP was 54% among patients with organic coronary stenosis (50% in stable angina and 61% in unstable angina with organic stenosis), but it was low (22%) in vasospastic angina without organic stenosis. Patients with advanced coronary stenosis and multi-vessel disease were found to have a higher incidence of positive $^{123}$I-BMIPP. A positive $^{123}$I-BMIPP result was correlated with a higher rate of subsequent intervention therapy (catheter intervention or CABG) than a negative result (48% versus 27%, p = 0.03 at one month; and 63% versus 35%, p = 0.008 at one year).

Conclusion: Resting $^{123}$I-BMIPP scintigraphy was valuable in detecting advanced coronary lesions in angina patients associated with a high incidence of subsequent intervention therapy.

Key words: $^{123}$I-BMIPP, angina, CABG, PTCA, intervention