

## Summary

### The Feasibility of Long-Term Outcome Prediction in Acute Myocardial Infarction Using the Discordance between Early and Delayed Image on <sup>123</sup>I-BMIPP Myocardial Scintigraphy

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**Objectives:** The feasibility of long-term outcome prediction using BMIPP myocardial scintigraphy was evaluated in cases of acute myocardial infarction.

**Methods:** BMIPP myocardial scintigraphy was performed on 165 patients with first acute myocardial infarction at the time of discharge from the hospital (average of 27 days after disease onset).

Discordance between early and delayed image was checked and its relation to later cardiac events (during the mean follow up period of  $64.2 \pm 9.8$  months) was analyzed. In 82 of these 165 cases TlCl scintigraphy was simultaneously performed (Tl/BMIPP dual SPECT) to examine mismatch from BMIPP scintigraphy and discordance between early and images.

**Results:** Discordance between early and delayed images was observed in 86 cases (52%). Among patients for whom dual SPECT was performed, mismatch between TlCl and BMIPP scintigraphy was observed in 30 cases (37%). When the relation between

mismatch and discordance was analyzed, mismatch was accompanied by washout. The incidence of later cardiac events was significantly higher for cases showing discordance accompanied by washout and cases showing mismatch on dual SPECT scintigraphy than cases without these findings. When multivariate analysis was conducted, involving age, sex, infarction related artery, left ventricular end-diastolic volume index, left ventricular ejection fraction, severity of disturbed fatty acid metabolism, washout and fill-in, washout was identified as an independent predictor of cardiac events.

**Conclusion:** Mismatch on Tl/BMIPP dual SPECT is important for predicting long-term prognosis of acute myocardial infarction. Furthermore, washout on BMIPP scintigraphy is also useful as a predictor of cardiac events.

**Key words:** Acute myocardial infarction, BMIPP, Mismatch, Prognosis, SPECT.